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# PLANNING STATEMENT

## SITE ADDRESS: LONGNEWTON, NEAR GIFFORD, HADDINGTON EH41 4JW

## PLANNING APPLICATION: RESIDENTIAL DEVELOPMENT OF 9 DWELLINGS BY CONVERSION, ALTERATIONS & NEW BUILD CONSTRUCTION, DEMOLITION AND FORMATION OF ACCESS, PARKING & ASSOCIATED INFRASTRUCTURE.

## APPLICANT: BILL & MARGARET WHITEFORD

## 27 APRIL 2018

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

RTPI Chartered Town Planner

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Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

RTPI Chartered Town Planner

## 1.0 INTRODUCTION

1.1 This Planning Statement, prepared by Ferguson Planning, is submitted to East Lothian Council on behalf of our client, Bill & Margaret Whiteford for a development proposal for nine dwellings together with demolition, access, parking and associated infrastructure within a disused former farm steading at Longnewton, near Haddington. The proposal comprises the following:

- 3 units by conversion;
- 5 units by new build.
- 1 unit by re-building an 'infill' area within a traditional steading.

1.2 Planning Permission is being sought following the receipt and consideration of Pre-Application Advice (ELC ref: Dev 61065) from East Lothian Council on 3rd July 2017.

1.3 The application relates to Longnewton steading where the buildings are situated close to Longnewton Farmhouse on the north side of the classified C92 public road. The application site is bounded by agricultural land, the public road and an access track.

1.4 In 2007, Planning Committee approved planning application 07/00288/FUL for the development of **fourteen houses** within the same application site, together with a 26-space car port building and further parking and hardstanding areas.

1.5 Despite significant marketing efforts by Messrs Lindsays and by Savills, no significant interest was intimated in the site, based upon that high-density steading scheme, and the site remains unsold. This is principally due to the costs involved in a conversion-only project and lack of demand for the type and layout of properties which gained planning approval. The rural property market seeks larger dwellings with ample private garden area. Comment on market demand is made with section 6 of this report.

1.6 The proposal aims to secure a long-term viable future use for key buildings which retain the most historic and architectural value, and which are located towards the front of the site. This ensures that the proposed scheme retains its 'steading feel' as experienced from the key receptor (the public road).

1.7 This proposal involves a reduced level of development from the **14 units** permitted by the Council on the same site in 2008.

1.8 The proposal seeks to respect and maintain the character and setting of the traditional steading buildings which are worthy of retention (and the steading setting generally). It recognises the reduced level of development, the layout, and built form which are sought by those wishing to live in a rural setting.

1.9 The farm steading currently comprises a mixture of traditional stone and slate/ pantile roofed steading buildings as well as more modern utilitarian infill and standalone agricultural units. Large parts of the steading are in a dilapidated state and are falling down.

1.10 A Structural Survey has been prepared by CRA Engineers and is submitted as supporting information. It identified those buildings which are most suitable for retention and conversion to residential use.

1.11 Whilst the buildings are **not listed**, the structure to the front of the site (beside the public road) is attractive and the proposal seeks to convert this building to residential use and thereby safeguard its future. Likewise, parts of the traditional complex towards the east and centre of the site are in a state of repair which allows for conversion and these structures will thus see the creation of a further two residential units by conversion.

1.12 The new build elements of the proposal importantly seek to retain the "steading ambiance" of the site, being respectful in form, layout, scale, massing and use of materials. Full explanation and justification for the proposals is set out within section 6 of this report and within SDA's Heritage Design Statement.

1.13 Overall, the purpose of this Statement is to provide a good level of understanding of the application site, its components, and the context within which it sits, before providing background to the proposed development. A summary of national and local planning policies and guidance is then outlined, together with an explanation of the proposal's overall compliance.

1.14 The remainder of the Planning Statement is structured as follows:

- **Section 2:** Site Context
- **Section 3:** The Proposal
- **Section 4:** Planning History & Pre-Application Enquiry
- **Section 5:** Planning Policy Context
- **Section 6:** Proposal Compliance
- **Section 7:** Conclusions

1.15 The completed planning application forms, certificates and this Planning Statement are accompanied by the following:

- Existing and Proposed Architectural Drawings
- Heritage Design Statement
- Ecological Appraisal
- Structural Engineer's Report
- Site Investigation

## 2.0 SITE CONTEXT

2.1 The application site is located within Longnewton Farm which is situated approximately 6 miles south of Haddington, 2 ½ miles south west of Gifford and 3 miles south east of east Saltoun. The proposal is wholly within the confines of the existing steading, as was the previous planning permission.

2.2 The site comprises a wide range of traditional and more modern agricultural steading buildings. None is listed. A former sileage clamp is also present. The steading has been redundant for agricultural purposes for over 10 years and the majority of the buildings, other than those proposed for conversion, are significantly dilapidated and are lacking in structural integrity. A limited number of buildings are used for equestrian accommodation and some house agricultural machinery.

**Fig 1**: Aerial Image of Longnewton Steading

**Fig 2**: Overview of Longnewton Steading (view east)

2.3 The current access to the former steading is from the public road at a point to the south east of the site.

2.4 The land is bounded to the south by the public road, whilst adjacent to the eastern boundary lies the (former) Longnewton Farmhouse (now a private dwelling unrelated, in operational terms, to the farm steading). The site is otherwise surrounded by agricultural land which has been retained by the owner of the steading (applicant). Deciduous woodland is located within the garden of the adjacent dwelling, providing visual separation from the application site. An access track exists adjacent to the eastern boundary of the site which provides access to the rear of Longnewton Farmhouse and to the adjacent agricultural fields.

2.5 Images of (a) those traditional steading buildings to be retained and (b) those which are not suitable for retention are provided overleaf:

**BUILDINGS TO BE RETAINED & SECURED FROM FURTHER DETERIORATION**

**Fig 3**: Attractive traditional building adjacent to the public road – to be retained (unit 1)

**Fig 4**: Unit 1 (eastern elevation) – to be retained

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

**Fig 5**: Traditional building (unit 7, northern elevation) – to be retained

**Fig 6**: Traditional building (unit 7, eastern elevation) – to be retained

**Fig 7**: Attractive traditional Building - to be retained (unit 9, western elevation)

**EXAMPLES OF BUILDINGS UNSUITABLE FOR RETENTION**

**Fig 8**: Building not structurally suitable for retention ('infill' new build, unit 8)

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

**Fig 9**: Buildings not structurally suitable for retention (location of detached new build)

**Fig 10**: Building not structurally suitable for retention (location of detached new build)

**Fig 11**: Utilitarian modern agricultural buildings – site of units 2 & 3 (traditional structure to right of image to be retained)

2.6 In terms of services and accessibility, East Saltoun offers a primary school, general store, church and village hall. Gifford has a Co-op supermarket, together with two hotels/restaurants, a post office, newsagents, café and play park. Nearby Haddington offers additional shopping facilities including a Tesco supermarket. Edinburgh's city centre is approximately 40 minutes away and the city bypass and Edinburgh Airport are also easily accessible.

## 3.0 PLANNING HISTORY & PRE-APPLICATION ENQUIRY

**Application 07/00288/FUL -14 dwellings**

3.1 The principle of residential development at Longnewton steading has already been established through the approval of application 07/00288/FUL in December 2008 at Planning Committee. This consent allowed the creation of **14 dwellings** through conversion.

3.2 In respect of that previous proposal, the Officer's Report to Committee highlights that public representations included the expression of concern that the 14-house development was too intensive, and its scale would impact detrimentally upon the rural character of the immediate area. This application fully addresses this concern with a reduced number of units and a sensitively designed development.

**Pre-Application Enquiry 2017**

3.3 A pre-application enquiry was submitted to East Lothian Council in June 2017 relating to a proposed development of 6 houses (1 conversion and 5 new build properties). A response was received on 3rd July 2017 (reference Dev61065) outlining policy DC1 – Development in the Countryside and Undeveloped Coast and stating that new development in the countryside should only be permitted in the defined circumstances outlined in this policy.

3.4 The Officer cited the opportunity for conversion where buildings are substantially intact and where no significant demolition is required. It was also noted that new build would only be permitted where there was an operational requirement for rural business reasons.

3.5 This response did not appear to consider, or address:

- The material consideration at Longnewton whereby the principle of development at the steading has been established through the approval of a proposal for the development of 14 houses within the site. The current proposal is significantly less intensive, with a reduction in 5 units;
- The redundant nature of the former steading buildings and the very real risk of losing attractive traditional agricultural buildings, which are understood to date

from the 18th Century, if further deterioration takes place due to a viable and marketable development solution not being found;

- The brownfield nature of the site, together with its grouping with neighbouring residential properties.

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**NI Office:**
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**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

## 4.0 THE PROPOSAL

4.1 The proposal seeks the development of a total of nine dwellings, contained within the same steading area where planning approval was recommended in 2008 for fourteen dwellings. Three dwellings will be created, primarily through conversion, and six as new build, using a carefully considered design and layout which wholly respects the rural farm steading setting.

4.2 The Structural Engineer's report sets out the condition of the existing buildings and their suitability for conversion, or otherwise, from a structural perspective. The report identifies three parts of the steading to be worthy of retention and capable of conversion without substantial demolition.

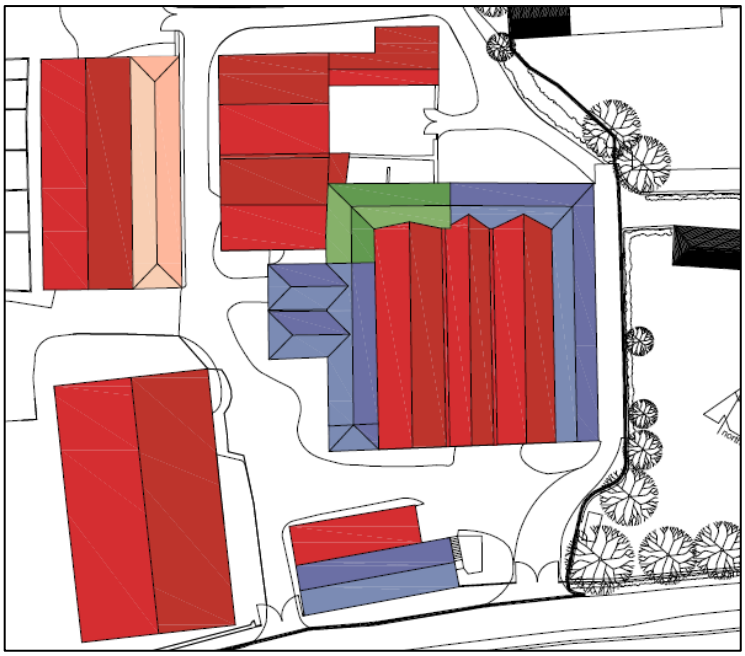
4.3 The remaining buildings, due to their dilapidated state and lack of structural integrity, are deemed to be unsuitable for conversion. Further, these latter buildings and structures detract from the visual amenity of the area and, due to their lack of structural integrity, are unsafe. Suitable stone from any unsafe buildings which require to be demolished will be re-used within the proposed development.

4.4 The buildings shaded **red** on Fig 11 (overleaf) are to be demolished as they have been confirmed as being unsuitable for conversion by the Structural Engineer, either by virtue of their construction or condition.

4.5 Whilst the Engineer deems the building shaded **pink** to be physically capable of conversion, it would likely be affected by the removal of the attached elements to the west. Furthermore, crucially, in order to establish a viable development, and prevent loss (through further deterioration) of the attractive traditional buildings with heritage value, (shaded **blue)**, it is essential to integrate three sensitively-designed new build dwellings into the proposal, located within the area where the 'pink-shaded' building lies.

4.6 It should be noted that the **green**-shaded building will be replaced with a structure of the same massing and height as the original which is in too poor a condition for conversion.

**Fig 11**: Demolition/ Retention Plan



**KEY**: (**Blue** = Retained; **Red/ Pink** = Demolish; **Green** = Replace)

4.7 As noted, three of the proposed dwellings would be created by conversion of existing traditional buildings which have been assessed as being capable of conversion by the Engineer without requiring significant demolition and rebuilding. On the submitted Site Plan, the dwellings to be created by conversion are units 1, 7 and the majority of unit 9.

4.8 The remaining six dwellings would be of new build construction. Units 2 and 3 have been carefully designed to offer a traditional steading/ courtyard format to complement the form, setting and location of Unit 1 and the existing 'U shaped' steading group (units 7-9). Unit 8 requires to be reformed (with the same height and massing as the original) as this part of the group has been assessed as being in too poor a structural condition for conversion.

4.9 Three new build detached dwellings (units 4-6) would be located towards the 'rear' of the steading site in order that they are not immediately visible from the public road and

do not break up the steading form at the front of the site. These detached units are, however, laid out around a courtyard format, in order to respect the wider setting.

4.10 The public road is the key receptor from which the proposed development will be viewed. The view from the road would contain the sympathetically-converted unit 1, with the converted U-shaped steading grouping beyond, and the new build (with steading form and massing) lying adjacent to the west.

4.11 In addition to the layout and form of the development, proposed landscaping and boundary treatments are clearly shown on the Site Plan. Certain aspects of the proposal are drawn to the attention of the Planning Authority:

4.12 The character of the traditional steading, its architectural form and heritage value has been given careful consideration in the design of the proposed development, which comprises three closely integrated elements: (1) the conversion of the building to the front and the development of 2 adjacent units in steading-style layout; (2) the conversion of the group of steading buildings towards the centre and east of the site and (3) the development of 3 detached houses to 'round off' the steading development to the rear.

4.13 A new entrance would be formed from the public road, towards the centre of the site, the initial section being 8 metres deep and 5.5 metres wide. It is noted that the 2008 permission confirmed adequate visibility could be achieved from the junction with the public road. A coloured tarmac access road would be formed to help preserve the rural setting, with transition strips used to break up the road, visually, between the three key elements of the proposal. The existing access to the steading, and onwards to Longnewton Farmhouse, would remain in place to serve the back of Longnewton Farmhouse and the fields to the north east only.

4.14 A new stone coped wall, with dressed stone gate pillars, would be formed at the entrance (adjacent to the eastern gable of unit 2) in order to maintain a traditional steading entrance and preserve the setting. A new dry-stone wall would be built between the converted unit at the front of the site and the eastern boundary. A further section of dry-stone wall would be formed from the south-west boundary, along the frontage, before turning in to meet unit 2. These traditional walls would enhance the

setting of the development, providing an appropriate means of enclosure for a traditional steading.

4.15 Parking areas and pedestrian access to houses would be formed in contrasting tegula paving and a covered parking area would be created under a pitched slate covered roof to the south of unit 9. Adequate parking would be provided as shown on the Site Plan comprising communal parking (10 spaces), including accessible spaces and the area of covered parking. Two private spaces are provided for units 2 and 3, and the three detached units have ample room for at least 2 cars each.

4.16 A courtyard to serve the detached units 4, 5 and 6 would be created, surrounded with a dry-stone wall in order to preserve the steading form and layout and balance the overall development with low-density coverage within the north western section.

4.17 Natural stone walling would be used to divide land within the 'courtyard' of units 7-9 to ensure the provision of private garden space to those units. A natural stone wall with grass cope would be formed enclosing the central parking area.

4.18 All new roofs would be formed to traditional pitches with a mixture of natural slate to all main areas.

4.19 Provision has specifically been made for bin stores and general storage areas to be accommodated within the proposed development with the aim of removing the need for individual home owners to position an array of sheds/ stores within garden ground which could, potentially, detract from the steading feel.

4.20 Proposed external materials are summarised overleaf:

**Fig 12**: Units 1, 2 & 3: Materials

| Component | Unit 1 | Units 2 & 3 |
|---|---|---|
| **Roof** | Natural slate. Existing skew stones to be retained and re-set. | Natural slate (with zinc where indicated) and lead-clad skews. |
| **Walls** | Existing walls re-pointed with lime mortar. | Reclaimed facing-stone from demolished structures to be re-used with the pattern and mortar bedding to match unit 1. Horizontal larch cladding and off-white render used as shown. |
| **Doors** | Timber door at upper level. (Upper level doorway opening retained). Timber framed doors elsewhere. | Timber framed doors. |
| **Windows** | Painted timber framed units formed in existing archways. Conservation style rooflights. | Painted timber framed units. Conservation style rooflights. Zinc-clad extruded dormers. |
| **Screens** | Fixed louvre screens to archways. | Fixed louvre screens. |
| **External Stairs** | Existing handrail replaced with traditional steel balustrade | Unit 3 – new hayloft style stairs with steel handrail |

**Fig 13**: Units 4 - 9: Materials

| Component | Units 4-6 | Units 7- 9 |
|---|---|---|
| **Roof** | Natural slate | Natural slate (part zinc) |
| **Walls** | Off white render, vertical larch boarding and random natural stone. | Reclaimed facing-stone from demolished structures re-used with pattern and mortar bedding to match existing. Vertical larch cladding. Lime mortar pointing. |
| **Doors** | Timber framed double glazed units | Timber framed double glazed units |
| **Windows** | Timber framed double glazed units | Timber framed double glazed units. Zinc-clad feature dormer windows. Conservation style rooflights. |
| **Screens** | | Hardwood fixed louvres |

## 5.0 PLANNING POLICY CONTEXT

5.1 This section provides an overview of key planning polices relevant to the proposed development. Scottish Planning Policy (SPP) sets out national planning polices and is a key material consideration in the determination of this application. The Development Plan is made up of the Strategic Development Plan for South East Scotland (SESPlan) and the East Lothian Local Plan (2008). The Council is in the process of preparing a Local Development Plan with the Proposed Plan having been submitted to Scottish Ministers in May 2017 and so should be afforded some weight in the determination of this application.

### SCOTTISH PLANNING POLICY (SPP) 2014

5.2 A key focus for SPP is the creation of well-designed, sustainable places and supporting sustainable economic growth and regeneration. Paragraph 75 sets out the policy principles to be applied in promoting rural development. These include (a) promotion of a pattern of development that is **appropriate to the character of the particular rural area** and (b) encouragement of development that **supports prosperous and sustainable communities** and businesses while protecting and enhancing environmental quality. The proposal meets with both these criteria.

5.3 SPP creates a presumption in favour of development that contributes to sustainable development. Policies and decisions will be guided by key principles, including:

- *giving due weight to net economic benefit;*
- *responding to economic issues, challenges and opportunities;*
- *supporting good design and the six qualities of successful places;*
- *making efficient use of existing capacities of land, buildings and infrastructure;*
- *supporting delivery of accessible housing, business, retailing and leisure development;*
- *supporting the delivery of infrastructure;*
- *supporting climate change mitigation and adaption;*
- *improving health and well-being by offering opportunities for social interaction and physical activity, including sport and recreation;*

- *having regard to the principles of sustainable land use;*
- *protecting, enhancing and promoting access to cultural and natural heritage;*
- *reducing waste, facilitating its management and promoting resource recovery; and*
- *avoiding over-development, protecting the amenity of new and existing development and considering the implications of development for water, air and soil quality*

**SESPLAN – STRATEGIC DEVELOPMENT PLAN (JUNE 2013)**

5.4 Key policies in relation to this proposal include:

- Policy 1A/ 1B Spatial Strategy; Development Locations/ Principles
- Policy 5: Housing Land
- Policy 6: Housing Land Flexibility
- Policy 7: Maintaining a 5-year land supply
- Policy 8: Transportation
- Policy 9: Infrastructure

**EAST LOTHIAN LOCAL PLAN 2008**

5.5 The following policies of the adopted 2008 Local Plan should be taken into consideration in the determination of this application although the date of the Plan renders the policies therein substantially out of date. Furthermore, in circumstances where the adopted plan is out of date or where there is a shortfall in the five-year supply of effective housing land, Scottish Planning Policy is clear that adopted plan policies on the supply of housing land will not be considered to be up to date.

5.6 Key policies in relation to this proposal include:

- Policy DC1: Development in the Countryside and Undeveloped Coast
- Policy H1: Housing Quality and Design
- Policy H4: Affordable Housing
- Policy DP1: Landscape and Streetscape Quality

- Policy DP2: Design
- Policy DP6: Extensions and Alterations to Existing Buildings
- Policy DP22: Private Parking

**Policy DC1 – Development in the Countryside and Undeveloped Coast**

5.7 This policy determines that development, including changes of use, will be acceptable in principle within the countryside where it is directly related to the needs of agriculture, horticulture, forestry and countryside recreation.

5.8 Other business use will also be acceptable where it is of an appropriate scale and character for its proposed location in the countryside, it can be suitably serviced and accessed and there are no significant traffic or other environmental impacts. Other circumstances in which development will be acceptable in principle include:

5.9 New build development – Enabling Development: New build development with an enabling function may be acceptable where it will fund the restoration of a significant feature of the built environment. Enabling development must not harm the setting of the feature to be restored.

5.10 Change of Use/ Restoration of a Building: Where dwellings are to be created by changes of use which are acceptable to the Planning Authority, the following requirements must be met.

a. *The building stands substantially intact (normally to at least wallhead height) and requires no significant demolition. Credible evidence of the building's structural stability at the time of the planning application must be provided, and*

b. *The existing building is physically suitable for the proposed use and any extensions or alterations are compatible with, and do not harm, any significant architectural or historic features of the building and are in keeping with its size, form, scale, proportion, massing and architectural character;*

c. *In the case of a farm steading conversion, a limited amount of new build may be acceptable where:*

i. *it reinstates a part of the original steading group demolished or altered by later development alien to its character and appearance, where there is clear physical and/or historic evidence of the original form, or*

ii. *it is a logical extension to an existing part of the steading that would provide a completeness to the steading's overall composition that is in keeping with its scale, form and character, and*

iii. *in all cases, the materials used on the exterior of the new buildings are sympathetic with those of the existing buildings proposed for conversion;*

*(d) In the case of a change of use of a building to a house, the existing building should be worthy of retention by virtue of its architectural or historic character;*

*(e) In the case of the change of use of agricultural buildings to housing, the change of use must involve the whole building group, and*

5.11 All applications for housing in the countryside must also meet with the following requirements:

*(a) Having regard to its nature and scale, new development must be integrated into the landscape, reflect its character and quality of place, and be compatible with its surroundings;*

*(b) New development must be sited so as to minimise visual intrusion and landscape impact within the open countryside or undeveloped coast, for example, by locating as part of an existing group of buildings, woodland or other well-contained setting, and by respecting and making use of the setting provided by landform or existing landscape features;*

*(c) The proposal must have no significant adverse impact on nearby uses;*

*(d) The proposed development must minimise the loss of prime agricultural land;*

*(e) Account must be taken of the design policy framework contained in the local plan;*

*(f) Suitable access and infrastructure is or can be made available;*

*(g) Where an existing building is demolished, any proposals for a replacement building will be treated as new build and considered as such against Policy DC1.*

**Policy H1 – Housing Quality and Design**

5.12 This policy provides that new housing development must create diverse, attractive and sustainable mixed residential communities. Key requirements relative to this proposal include:

- Providing a range and choice of house sizes, types and tenures that provide for the needs of all the community and all segments of the market;
- Providing a safe, accessible and secure residential environment that creates a vibrant community;
- Ensuring that best use is made of Sustainable Urban Drainage Systems and sustainable waste management;
- Complying with Local Plan development quality and design policies.

**Policy DP1 – Landscape and Streetscape Quality**

5.13 New built development must be well integrated into its surroundings by responding to and respecting landform, and by retaining existing natural and physical features that are important to the area and incorporate these into the development in a positive way, Appropriate hard and soft landscaping should be implemented to provide an attractive setting for the development.

**Policy DP2 – Design**

5.14 New development must be designed to:

- Be appropriate to its location in terms of its positioning, size, form, massing, proportion and scale, and use of a limited palate of materials and colours that complement its surroundings;
- Create or contribute to a sense of place and complement local character;
- Position and orientate buildings to articulate, overlook, properly enclose and

provide active edges to public spaces to create a sense of welcome, safety and security;

- Maximise opportunities to provide effective access and linkages to the surroundings;
- Provide a well-connected road layout within the site;
- Clearly distinguish public space from private space;
- Ensure privacy and amenity, with particular regard to levels of sunlight, daylight and overlooking;
- Retain physical or natural features which are important to the amenity of the area.

**Policy DP6 – Alterations to Existing Buildings**

5.15 This policy provides that alterations must be well integrated into their surroundings and be in keeping with the original building. Development must satisfy the following criteria:

(1) The must be no loss of amenity with neighbouring uses or adverse effect upon existing residential amenity;

(2) Extensions and alterations must be of a size, form, proportion and scale appropriate to their surroundings and, where the existing building has architectural merit, be in keeping with that building;

(3) The proposal must be finished externally in materials with colours and textures which complement existing buildings in the locality and the original building;

(4) There must be no significant loss of privacy and amenity for the occupants of existing neighbouring development and occupants of any new development must also enjoy privacy and amenity;

(5) The proposal must retain physical or natural features which are important to the amenity of the area or provide adequate replacements.

**Policy H4 – Affordable Housing**

5.16 This policy provides that Development proposals which will bring forward five or more houses (including conversions) must make provision for affordable housing. The

required proportion is 25%. In exceptional circumstances, off-site provision, or a commuted sum, can be considered.

**Policy DP22: Private Parking**

5.17 This policy provides that car parking provision must conform with the Council's adopted parking standards and should be sited and designed to minimise its visual impact and effect on neighbouring properties.

**PROPOSED LOCAL DEVELOPMENT PLAN (2016)**

5.18 Whilst this remains emerging policy it is advanced in its preparation and clearly indicates the direction of travel for future development within East Lothian. It should therefore be a material consideration in the determination of this application. Relevant polices are set out below:

- Policy DC2 Conversion of Rural Buildings to Housing
- Policy DC4 New Build Housing in the Countryside
- Policy DC5 Housing as Enabling Development
- Policy HOU3 Affordable Housing Quota
- Policy DP1 Landscape Character
- Policy DP2 Design
- Policy DP5 Extensions and Alterations to Existing Buildings
- Policy T1 – Development Location & Accessibility
- Supplementary Guidance – Affordable housing

**Policy DC2 Conversion of Rural Buildings to Housing**

5.19 This Policy provides support for the conversion of appropriate buildings in the countryside to residential use where:

i. *The existing building is worthy of retention by virtue of its architectural or historic character;*

ii. *The building is physically suitable for the proposed use and any extensions or alterations are compatible with, and do not harm, any significant architectural or historic features of the building, and are in keeping with its size, form, scale,*

*proportion, massing and architectural character; and*

*iii. The building stands substantially intact (normally to at least wallhead height) and requires no significant demolition. Credible evidence of the building's structural stability will be required.*

5.20 The policy confirms that in the case of a change of use of agricultural buildings to housing, the change of use must involve the whole building group.

5.21 In the case of a farm steading conversion, a limited amount of new build may be acceptable where:

*a) it reinstates a part of the original steading group demolished or altered by later development alien to its character and appearance, where there is clear physical and/or historic evidence of the original form; or*

*b) it is a logical extension to an existing part of the steading that would provide a completeness to the steading's overall composition that is in keeping with its scale, form and character.*

In all cases, the external finishes used must be sympathetic to those of the existing buildings proposed for conversion.

**Policy DC4 New Build Housing in the Countryside**

5.22 This policy provides that new build housing in the countryside will only be supported in connection with operational requirement of a rural business or it is a proposal for affordable housing which is a logical addition to an existing settlement.

**Policy DC5 Housing as Enabling Development**

5.23 This policy provides that housing as enabling development in the countryside may exceptionally be supported for a number of reasons, including where it will fund the restoration of building(s) with recognised heritage value, the retention of which is desirable. Proposals must protect or enhance the setting of such features. Any enabling development must be on the same site as, and part of, the main proposal. The benefits of the proposed development must outweigh the normal presumption against new

build housing development in the countryside.

**Policy HOU3 Affordable Housing Quota**

5.24 This policy determines that development proposals (including conversions) which, in their totality, will bring forward five or more dwellings must make provision for affordable housing as part of the proposal. The required proportion of affordable housing to be provided will be 25% of the total number of dwellings proposed for the site.

**Policy DP1 – Landscape Character**

5.25 This policy provides that all new development, with the exception of changes of use and alterations and extensions to existing buildings, must:

- *Be well integrated into its surroundings by responding to and respecting landform, and by retaining, and where appropriate enhancing, existing natural and physical features at the site which make a significant contribution to the character and appearance of the area, and incorporate these into the development design in a positive way;*
- *Include appropriate landscaping and multifunctional green infrastructure and open spaces that enhance, provides structure to and unifies the development and assists its integration with the surroundings and extends the wider green network where appropriate.*

**Policy DP2 – Design**

5.26 This policy requires the design of all new development to:

1. *Be appropriate to its location in terms of its positioning, size, form, massing, proportion and scale and use of a limited palate of materials and colours that complement its surroundings;*

2. *By its siting, density and design, create a coherent structure of streets, public spaces and buildings that respect and complement the site's context, and create a sense of identity within the development;*

3. *Position and orientate buildings to articulate, overlook, properly enclose and*

*provide active frontages to public spaces or, where this is not possible, have appropriate high quality architectural or landscape treatment to create a sense of welcome, safety and security;*

4. *Provide a well-connected network of paths and roads within the site that are direct and will connect with existing networks, including green networks, in the wider area ensuring access for all in the community, favouring, where appropriate, active travel and public transport then cars as forms of movement;*

5. *Clearly distinguish public space from private space using appropriate boundary treatments;*

6. *Ensure privacy and amenity, with particular regard to levels of sunlight, daylight and overlooking, including for the occupants of neighbouring properties;*

7. *Retain physical or natural features that are important to the amenity of the area or provide adequate replacements where appropriate;*

8. *Be able to be suitably serviced and accessed with no significant traffic or other environmental impacts.*

**Policy DP5 – Extensions and Alterations to Existing Buildings**

5.27 This policy requires that alterations and extensions must be well integrated into their surroundings and must be in keeping with the original building or complementary to its character and appearance. Development must:

- Not result in a loss of amenity with neighbouring uses, or be harmful to existing residential amenity through loss of privacy from overlooking or from loss of sunlight or daylight;
- Be of a size, form, proportion and scale appropriate to its surroundings and, where the existing building has architectural merit be in keeping with, or complement, that building.

**Policy T1 – Development Location & Accessibility**

5.28 This policy includes the requirement to provide adequate car parking provision.

**Housing Land Supply: Interim Planning Guidance (Feb 2016)**

5.29 The adopted East Lothian Local Plan 2008 does not provide an adequate supply of effective housing land for the next five years. In view of this continued shortfall interim Planning Guidance has been agreed on Housing Land Supply. This contains material considerations to be taken into account when determining planning applications for housing development on land not allocated for that purpose by the East Lothian Local Plan 2008.

5.30 Scottish Planning Policy requires planning authorities to maintain a supply of effective housing land for at least five years at all times to ensure a continuing generous supply of land for housebuilding to meet housing needs. Where there is not an effective 5 year housing land supply, planning applications for greenfield housing developments must be assessed against policy 7 of SESplan which allows for such proposals to be approved if they satisfy a number of criteria. These include where the development will be in keeping with the character of the settlement and local area. The interim planning guidance expands on the provisions of SESplan policy 7 and sets out criteria that will be used to assess the extent to which particular proposals might be acceptable. The interim guidance provides for on-going housing delivery in the intervening period whilst the new LDP is under preparation and whilst the Local Plan 2008 remains in force.

## 6.0 POLICY COMPLIANCE

6.1 This section will review the relevant planning policies outlined in Section 5 and will assess the proposal's compliance under the following headings:

- Principle of Development and Sustainable Development
- Development Economics – Project Viability
- Site Deliverability and Marketability
- Design and Layout
- Heritage Considerations
- Building Condition
- Landscape and Visual Impact
- Ecology
- Site Investigation
- Development Contributions

**Principle of Development**

6.2 A key consideration in the determination of this application should be that the principle of development on this brownfield site has already been established through the recommended approval of application 07/00288/FUL at Planning Committee in December 2008 which involved the creation of **14 dwellings** through conversion.

6.3 The proposal seeks permission for the development of a modest number of houses (a total of 3 through conversion and 6 through new build), as compared to the previous approval. The proposal presents a deliverable opportunity, with the site having been designed in consultation with a leading Estate Agent, in terms of the type of homes being demanded by the market.

6.4 In respect of the *previous* proposal for 14 houses, the Officer's Report to Committee highlights that public representations included concern that the 14-house development was too intensive, and its scale would impact detrimentally upon the rural character of the area. This application fully addresses this concern with a reduced number of units.

6.5 The conversion elements are compliant with Local Plan policy DC1 (Development in the Countryside) and LDP policy DC2 (Conversion of Rural Buildings to Housing). The

Engineer's report confirms that those buildings to be converted are substantially intact and are suitable for conversion without significant demolition. Further, where extensions are proposed they are subservient to, and compatible (in form, scale, massing and materials use), with the buildings to be retained, in compliance with Local Plan policies DC1 and DP6 (Alterations to Existing Buildings) and LDP policy DP5 (Extensions and Alterations to Existing Buildings).

6.6 In terms of the rebuild 'infill' proposal (unit 8), where part of an existing traditional building is not suitable for conversion due to its poor structural condition, Local Plan policy DC1 and LDP policy DC2 allow new build where it reinstates part of the original steading and where there is physical evidence of original form. These circumstances clearly exist in this instance.

6.7 In accordance with Local Plan policy DC1, the proposal will be wholly contained within the existing steading brownfield site and will not involve the loss of any agricultural land. The proposals are contained within the same area as the previous planning permission.

6.8 The provisions of the Interim Planning Guidance on housing supply are noted and although primarily concerned with unallocated greenfield sites on the edge of settlements, there is clearly acknowledgement that an effective 5-year housing land supply does not exist at present during the period in which the emerging LDP remains un-adopted. We consider that a proportion of that housing supply is based in rural areas and that such supports rural communities. Overall, the Guidance highlights the intention to support proposals which are in keeping with the character of the local area, as is the case in this instance.

**Access, Parking and Junction Sightlines**

6.9 The acceptability of the visibility from the proposed access was established in 2008, with splays of 2.5m x 160m being able to be achieved on the minor C class public road. In accordance with Local Plan policy DC1, a suitable access can be secured.

6.10 A new entrance would be formed from the public road, towards the centre of the site, the initial section being 8.0 metres deep and 5.5 metres wide. A coloured tarmac access road would be formed to help preserve the rural setting, with transition strips used to break up the road, visually, between the three key elements of the proposal. The

existing access to the steading, and onwards to the back of Longnewton Farmhouse is excluded from the development site. It will be narrowed and would provide access only to the back of the former farmhouse and onwards to the land to the north east.

6.11 Adequate parking would be provided as shown on the Site Plan in accordance with local Plan policy DP22 and LDP policy T1 (Development Location & Accessibility). Communal parking (10 spaces) would be provided, including accessible spaces. Two private spaces are provided for units 2 and 3, and the 3 detached units have ample room for at least 2 cars. A conscious effort has been made to ensure that parking areas do not dominate the development, rather they have been carefully integrated into the proposal, including 4 spaces under a pitched slate-covered roof. The communal parking has a 'courtyard' ambience, in keeping with the steading setting, being 'framed' by the covered area and a turfed stone wall.

**Development Economics – Project Viability**

6.12 Local Plan Policy DC1 and LDP Policy DC5 (Housing as Enabling Development) provide support for housing as enabling development in the countryside where it will fund the restoration of building(s) with **recognised heritage value**, the retention of which is desirable and where the 'enabling housing' is on the same site as the main part of the proposal. Proposals must protect or enhance the setting of such features. The set of circumstances which exists at Longnewton match those set out within this 'enabling development' policy and the new build elements of the proposal are considered to comply with this policy.

6.13 A indicative viability assessment has been prepared and is provided (under private cover). The development, without the new build units, is not a viable proposition. If the viability of the overall development cannot be secured through the inclusion of proposed 'enabling' housing units then the steading site will remain vacant and disused. The buildings will further deteriorate over the coming years, as has been the case since the unmarketable planning permission of 2008. Effectively, this proposal presents the last opportunity to secure planning permission for a viable development proposal and secure the heritage value of the buildings which are capable of retention.

6.14 Although significant deterioration has occurred since 2008, certain attractive buildings with heritage value do remain in a physical condition whereby they are suitable for

conversion to residential use, as confirmed by the Structural Engineer. There is genuine risk that these traditional steading buildings will be lost forever if planning permission for a viable development proposal cannot be secured in the near future.

6.15 In this regard, it is important that the Planning Authority does not ignore the economics of development, as set out within the appraisal, nor the demands of the property market in terms of the advice provided to the Applicant by the leading Estate Agent who would act as marketing agent for the site.

**Site Deliverability and Marketability**

6.16 Following the approval for 14 houses in December 2008, the site was placed on the market for sale. The market in East Lothian for traditional steadings with planning permission to be converted into multiple residential units disappeared following the financial crash of 2007/8, as the traditional buyers (smaller developers) of this type of property were unable to gain funding or, in some cases, went out of business. Consequently, a number of steadings with planning permission, including Longnewton Steading, and sites such as Tyninghame Links, have remained unsold for a number of years, during which time their condition has deteriorated.

6.17 One of the reasons for the loss of the market for projects which comprise only *conversion* of traditional steadings is the high cost of converting such buildings into dwellings. Further, the layout is often compromised by the footprint of the original building. This scenario has been illustrated throughout the unsuccessful marketing of Longnewton Steading (with planning permission for the creation of 14 residential units through conversion) by Messrs Lindsays and Savills. It is understood that the thorough marketing exercises carried out by both parties resulted in no serious interest from buyers looking to implement the planning consent, despite there being a general demand for houses in the area.

6.18 Despite the constrains of working with the footprint of the traditional buildings (relating to the current proposals for units 1,7,8 and 9), Stuart Davidson Architecture has designed an attractive development which is highly respectful of the existing steading form and its rural location. Further, whilst units 2 and 3 are new build, they are of a steading form, scale and massing and are carefully positioned within the overall steading curtilage to replicate a traditional steading layout.

6.19 The proposal for 9 units comprises a mixture of larger detached and semi-detached family homes. These properties will present a more viable option for developers as compared to the 2008 planning permission, as there is a blend of properties that is sought-after in the market. Crucially, the type of development will allow a developer to phase the construction project, with the retained steading buildings being secured by being made wind and water tight before any work is started on the new build houses.

6.20 It is essential, for viability purposes, that a developer has the ability to raise funds from the sale of the profitable part of the development, prior to investing further substantial sums (beyond making the buildings wind and water tight) in the traditional buildings to be retained.

6.21 The Estate Agent notes that it would be possible to sell the sites for the detached units as serviced plots to private individuals looking to build a family home, which would assist in funding the conversion of the traditional steading buildings. Confidence has been expressed that there will be a demand for the proposed properties.

**Design and Layout**

6.22 The proposals are considered to comply with Local Plan and LDP policies DP2 (Design). The development design has been carefully formed by the Applicant's Architect with the input of the proposed Estate Agent and with the knowledge of the previous (unmarketable) permission which was secured over the site in 2008.

6.23 The proposal is appropriate for the location in terms of scale, form and massing. It consolidates and preserves the sense of place of the steading (which will otherwise be lost, in time) and complements the local rural character. The buildings are oriented to ensure privacy whilst providing an attractive outlook from key elevations. The view of the development from the key receptor (the public road) will be attractive. Boundary treatments use traditional materials, namely a variety of stone walls and the re-use of stone from elements of demolition.

6.24 Local Plan policy DC1 and LDP policy DC2 also require that external materials are sympathetic to those present on the buildings to be converted. The materials which would be used have been summarised herein in section 4.0 and are explained more fully within the Architect's Heritage Design Statement. They have specifically been selected

to be appropriate for the rural steading setting and, in many cases, match existing materials. Significant re-use of stone and slate from those buildings which require to be demolished will be implemented.

**Heritage Considerations**

6.25 The Officer's Report relating to the previous application for 14 units noted that "*The steading buildings are well contained within their landscape setting and are part of the historic form and character of this part of the East Lothian countryside. They have some* ***architectural merit and make a positive contribution to the rural landscape and built heritage of the area.***" The Council's Heritage Officer previously noted that the steading is "***an historic steading dating back to the 18th Century***". It is clearly acknowledged by the Planning Authority that some buildings have heritage value and are worthy of preservation.

6.26 In 2007, the Planning Officer also noted, within their report, that "*some of the steading buildings are suffering from disrepair, giving an appearance somewhat detracting from the amenity of the area. If left unused…they would be likely to fall into a further state of disrepair with a greater harmful effect on the appearance and amenity of the area*." Unfortunately, due to the lack of demand for the development site in 2008/09 after planning permission was approved, exactly this situation has occurred, although, as noted, fortunately certain buildings with considerable heritage value do remain in a structural condition rendering them suitable for conversion, but at a higher cost than new build.

6.27 Whilst the buildings are not listed, those towards the front of the site (with public road frontage) are in fair condition and securing their long-term future through conversion to residential use would provide a clear and lasting link to the historic agricultural steading use of the site through a number of measures including:

- The use of appropriate external materials throughout;
- The conversion of the attractive building at the front of the site;
- The conversion of a key grouping of buildings to the east/ centre of the site;
- The use of appropriate and traditional boundary treatments;
- The implementation of appropriate new build forms, set out in a pattern which respects and reflects the 'steading layout'.

**Structural Engineer's Report – Building Condition**

6.28 In compliance with Local Plan policy DC1 and LDP policy DC2, the Applicant has procured a Structural Survey of all the buildings at Longnewton from CRA (Edinburgh) Consulting Structural and Civil Engineers. The report divides the buildings at Longnewton into 5 areas "A" to "E" as can be viewed on the buildings plan which forms part of their report.

**Fig 14**: Buildings Plan (CRA Edinburgh) Consulting Civil & Structural Engineers


6.29 **Block A**: The proposal includes the retention of traditional building 'A'. The attached more modern lean-to structure would be removed to restore the building's original form. The report confirms the traditional buildings to be structurally sound and suitable for conversion.

6.30 **Block B**: The development proposal includes the demolition of Building B, a modern steel-clad portal frame structure.

6.31 **Block C:** This comprises two elements: Part (X) with stone walls and slated roof is used for equestrian stabling at present. It is acknowledged that, from a structural

perspective, the engineer considers this element to be suitable for conversion. Part (Y) with stone walls, steel trusses and cement fibre roofing is not considered to be suitable for retention due to the very poor condition of all elements of the fabric.

6.32 Notwithstanding the engineer's findings that part 'X' is suitable for retention it is likely that upon removal of adjoining part 'Y', the integrity of the building may be compromised. Furthermore, in order to establish a viable development, and prevent loss (through further deterioration) of the attractive traditional buildings with heritage value, it is essential to integrate sensitively-designed new build dwellings into the proposal as part of the 'enabling development', including three houses which must be located within the area where this traditional building lies.

6.33 **Block D**: The Engineer has divided Block D into eight constituent parts (A) to (G) and (M).

6.34 Building (A), is of 1 ½ storey height with stone walls, slated roof and dormer to west elevation. It is considered to be suitable for retention. This is retained within the development proposal.

6.35 Areas (B) to (D) of the building are effectively more modern infill between the traditional surrounding structures. The Engineer considers these parts to be unsuitable for retention and the development proposal includes for their removal.

6.36 Building (E) is single storey with stone walls and pitched hi- ended slated roof. It is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.37 Building (F) is of single storey height with slated roof and hipped return with building E. It is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.38 Building (G) is of 1 ½ storey height with pantile roof covering. The building is considered to be in very poor condition by the Engineer and is not suitable for retention. The proposal involves its removal and replacement with an 'infill' building of similar massing and design.

6.39 Building (M) is a 1 ½ storey height double pitched extension which is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.40 **Block E**: The Engineer has divided Block E into four constituent parts (K), (J), (K) and (L) and advises that none of these parts is suitable for retention due to their very poor structural condition and clear evidence of structural movement. The development proposal involves the removal of this part of the steading.

6.41 In summary, the development proposal concurs with the conclusions of the Engineer in terms of suitability for retention, or requirement for removal, for all aspects which have been surveyed, aside from section (X) or Block C, which is to be removed as part of the development proposal.

**Landscape and Visual Impact and Residential Amenity**

6.42 The proposed development will not affect any areas subject to landscape designations and it will not appear intrusive or incongruous within the landscape setting in accordance with Local Plan policies DC1 and DP1 and LPD policy DP1 (Landscape Character). On the contrary, it will secure a viable long-term future for several attractive buildings with heritage value, of which unit 1 (the detached traditional building at the site frontage) will be most apparent from the public road. Views into the site will be obtained beyond traditional boundary dry stone walls, and the southern elevation of unit two will be viewed from the public road also. This new build unit is designed in 'steading form' and will complement the retained buildings to the east and north.

6.43 Again, in accordance with the above-noted policies, the proposed development would be well integrated into the landscape, reflect its character and quality of place and be wholly compatible with its surroundings. The site is already well integrated into its immediate setting and wider landscape setting as an 'established steading site' with existing boundary treatments which will be renewed/ reinforced.

6.44 The proposal is considered to comply with LDP policy DP1 in terms of making a significant positive contribution to the appearance of the area, particularly as the site currently contains a large number of dilapidated buildings, some of which are unsightly, and would become more so as further deterioration occurs through time.

6.45 Landscaping is proposed as illustrated on the Site Plan and, together with existing mature trees to the east, and the established hedge to the north west, this will help to integrate the development into its surroundings, although the site is already well contained within the landscape setting (as previously acknowledged by the Planning Officer in 2008). The proposal is thus considered to be compliant with Local Plan policy DP1 (Landscape and Streetscape Quality) and LDP policy DP1 (Landscape Character).

6.46 It has been established that the steading is, overall, now suffering from significant disrepair and as a result it is detracting from the appearance and amenity of the area. Further, many of the buildings are in a dangerous condition. It must be appreciated that significant investment to improve or maintain the buildings is not a reasonable expectation whilst no viable future has been secured for the site.

6.47 In terms of residential amenity of existing houses, it is noted that there are two houses in close proximity to the site (the eastern-most being occupied by the Applicant) but the presence of mature trees along the proposal's eastern side limits inter-visibility. Overall, it is considered that there would be no impact upon the residential amenity of neighbouring houses in accordance with Local Plan policy DC1 and LDP policy DP2. Longnewton Farmhouse will have use of the track which runs to the east of the site as this track is not to be used to serve the development.

6.48 The proposed development has been designed to ensure that each property has a high level of residential amenity, particularly as the Applicant has been advised that the market demands such, including reasonable levels of private garden ground. The layout has thus been carefully drawn up to ensure that there is private garden ground attributed to each property and that each house will have a good level of privacy. Large areas of communal ground are not attractive to buyers in this type of development.

**Ecology**

6.49 An extended phase 1 Habitat Survey and preliminary protected species survey has been carried out by Ellendale Environmental and is submitted with this application. The report confirms that due to the nature and/ or physical condition of the buildings, they are assessed as having negligible potential for bat roosts. No evidence of bat activity was found during the survey and no further surveys are considered to be required. Further, the hard standing around the buildings is assessed as not being suitable to

support protected species.

6.50 The Report provides recommendations for modest post-construction ecological enhancements proportionate with the low level of environmental impact from the development. The measures aim to increase the diversity of species present on the site.

**Site Investigation**

6.51 The Site Investigation Report which was prepared in 2008 is resubmitted with this application, given the nature of the report content.

**Development Contributions**

6.52 In response to the previous application, in terms of Affordable Housing, the Council's Housing Strategy and Development Services section advised that it would not be feasible to produce social rented housing or low-cost home ownership units on the site and therefore a commuted sum payment should be made in lieu of on-site provision.

6.53 The principle of contributions would be acceptable subject to the associated detail being reviewed and the contributions being proportionate to the scale of the development. Contributions must not subsequently lead to the non-viability of this sensitively balanced project.

## 7.0 CONCLUSIONS

7.1 Ferguson Planning has been appointed by Bill & Margaret Whiteford (the applicant) to submit a planning application for the development of 9 dwellings within a brownfield, former farm steading site at Longnewton Farm, near to Haddington. The principle of development at the steading was established in 2008 with approval given to the creation of 14 dwellings.

7.2 The proposal involves the retention of the majority of traditional buildings within the steading which have heritage value, and which are capable of conversion, as confirmed by the Structural Engineer's Report. Three dwellings are to be created through conversion and six by new build. This proposal will effectively 'save' traditional buildings which are at risk of being lost if a viable future is not found through an appropriate development proposal.

7.3 The application site is located in a rural location on the site of a dilapidated farm steading which has become unsightly and unsafe in an otherwise attractive rural landscape setting in close proximity to two other residential properties.

7.4 Significant marketing efforts were implemented by two separate Agents following the achieving of the 14-unit planning permission in 2008. However, due to the compact layout of the development, the small scale of the proposed units and the lack of private garden ground, the site did not attract any serious interest from developers and remains unsold. In the intervening period the buildings have deteriorated further, but it is positive that some do remain in a condition suitable for conversion and are thus able to be secured from further deterioration.

7.5 The proposal has been carefully designed to respond to the steading character of the site and the rural setting, generally. The new build dwellings and the conversion subjects are well integrated, with a clear 'steading theme' running throughout the design proposals. Traditional materials are used throughout the site and much of the stone/ slate from necessary demolition will be re-used within buildings and boundary treatments.

7.6 The new build dwellings are an essential part of the development as these elements

render the proposal viable from an economic perspective. The new build proposals will thus enable the long-term future of the traditional buildings, some of which are understood to date from the 18th Century, to be secured.

7.7 In terms of visual impact, the proposal is considered to be appropriate for the rural location and will offer a significant improvement from the current position. The key receptor is the public road (C92) and from here an attractive view will be obtained into the site beyond traditional boundary walls. Unit 1 is a detached traditional steading building, of pleasing form, which lies adjacent to the public road.

7.8 An extended phase 1 Habitat Survey and preliminary protected species survey has been carried out and confirms that due to the nature / condition of the buildings, they have negligible potential for bat roosts. Recommendations are made for modest post-construction ecological enhancements proportionate with the low level of environmental impact from the development to increase the diversity of species present on the site.

7.9 The Planning Authority is respectfully requested to approve this application which will provide good quality rural housing for East Lothian and assist in the delivery of a 5-year housing supply. The visual amenity of the areas will be significantly enhanced and traditional buildings with heritage value will be saved. The proposals are compliant with Local Development Plan policy, including that relating to: Development in the Countryside, Enabling Development, Design, Landscape Quality/ Character and policy on Extensions, Alterations and Conversions.

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# Steading Structural Condition Report
# Briefing on Porosity

**Proposed Development**
**Longnewton Farm**
**Haddington EH41 4JW**

**CRA (Edinburgh) Ltd**
**2 Lambs Pend**
**Penicuik**
**EH26 8HR**

**T:** 01968 671600
**E:** admin@craedin.co.uk
**W:** www.craedin.co.uk

**March 2018**

Consulting
Civil & Structural
Engineers

**Date Issued:** March 2018

**Job Number:** CE4142

**Report Number:** CE4142 / SR1

**Client Reference:** Longnewton Farm, Haddington

**Prepared By:** Mike Kelly, Senior Structural Technician

[redacted]

**Checked By:** Mark Hendry, B.Eng. (Hons). C.Eng. M.I.Struct.E
Chartered Structural Engineer

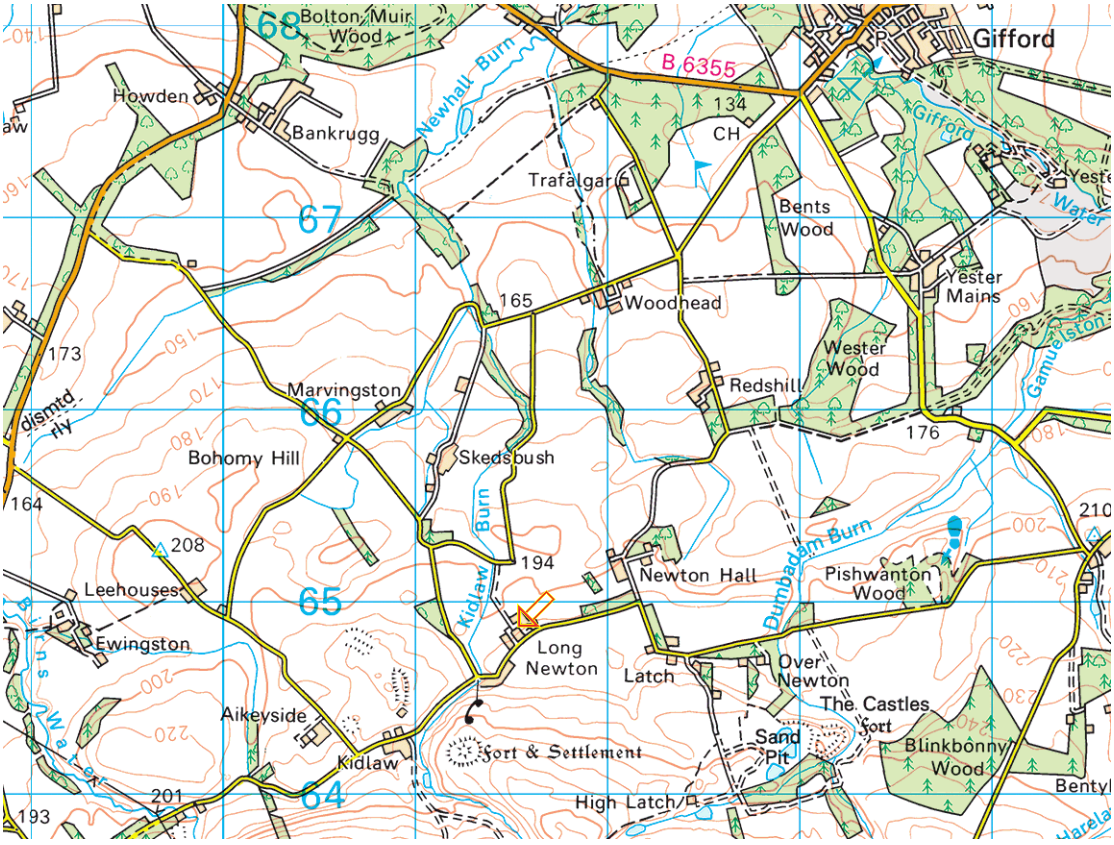
[redacted]

## SITE.

The site is located at EH41 4JW. NGR 351570E, 664770N at 210m Above Sea Level.

There are currently various farm buildings and sheds on the site in various states of disrepair as the farm is no longer currently in use. These range from single and two storey whinstone / sandstone constructed steadings with pitched roofs finished in pan tiles or slate, steel post and beam cattle courts with timber / angle iron trusses and cement fibre roof sheeting, and more modern steel framed and clad buildings.

The site is exposed in all directions and surrounded by grazing fields.




## GEOLOGY.

The British Geological Society (BGS) database was reviewed to consider the expected superficial deposits which could be expected on the proposed development site.
The mapped evidence suggested that the deposits were likely to be Glaciofluvial Deposits of Gravels, Sands, and Silts overlying the Shinnel Formation of Whake (Whinstone)

A borehole record was available some 120m to the North East which is appended to this report and confirms the expected strata.

No coal workings are present in the area.

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**STRUCTURAL CONDITION SURVEYS.**
( to be read in conjunction with A3 sketch CE4142-100 )

**BLOCK A.**

*Brief Description* - 1 ½ storey, 600mm stone walls, with sandstone arches full length of north elevation, concrete ground floor + channels, suspended timber 1st floor, raised tie trusses with plastic coated profiled metal roof sheeting, skew stones to each gable. 4No small windows at eaves level to north and south elevations, stone access stair and door to east gable. Currently contains galvanised grain bins.
Steel framed lean too frame off north elevation to be removed (hatched red)
*Observations* – Structurally sound with minor repointing works required though-out. Some localised taking down and re-building of wallhead to south elevation required due to mortar washout. Bedding and stitching of 2No vertical open joints to south elevation. Stone steps will require re-bedding and a handrail installed if being retained. New timber suspended floor will be required, new roof sarking and slate.
*Conclusions* – **Suitable for conversion.**

**BLOCK B.**

Modern steel clad portal frame to be demolished ( hatched red )

**BLOCK C.**

**X** *Brief Description* – single storey, 600mm stone walls, stone / concrete floor, raised tie trusses with hip ended pitch slated roof. Currently **used** as stable block.
**X** *Observations* – Structurally sound with minor repointing works required though-out. Roof level with no excessive dipping, will require stripped. Likely to require rafter end splices at eaves, especially along valley gutter line.
**X** *Conclusions* – **Suitable for conversion.**

**Y** *Brief Description* – 600mm stone walls of varying heights supporting angle iron steel trusses, timber purlins and cement fibre roof sheeting. Open gables each end.
**Y** *Observations* – Both gable ends suffering roof damage due to wind especially the north end, many twisted angle iron trusses, some with supports being added. Various sections of roof sheeting missing and damaged purlins. Gable stone walls in very poor condition and in a state of near collapse. Should the roof be removed, the remaining west wall would have no restraint, and its slenderness ratio would require it to be taken down to half its height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained.
**Y** *Conclusions* – **Not Suitable for retention**

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**BLOCK D.**

**A** *Brief Description* - 1 ½ storey, 600mm stone walls, concrete ground floor, suspended timber 1st floor, raised tie trusses with slated finish, dormer to west elevation, skew stones both ends. Single storey hipped roof the south gable end + small brick chimney stack. Currently contains grain bruiser, and parts store.
**A** *Observations.* – Structurally sound with minor repointing works required though-out. First floor joists currently propped midspan, will require replacing. Roof will require stripping. East elevation eaves 600mm higher than valley gutter so ends should be reasonably sound.
**A** *Conclusions* – **Suitable for conversion.**

**B** *Brief Description* – Cattle Court, dirt floor, angle iron trusses with plastic coated metal profile roof sheeting. Vertical open boarded gable apex panel of south gable. Trusses supported off east wall of building A, and steel posts / beams between building B and C.
**B** *Observations.* The south gable wall slenderness ratio would require it to be taken down to half its height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained.
**B** *Conclusions* – **Not Suitable for retention**

**C** *Brief Description* – Cattle Court, dirt floor, timber trusses and purlins, cement fibre roof sheeting. Trusses supported off steel posts / beams between building B and D.
**C** *Observations.* Many damaged / rotted trusses. The south gable wall slenderness ratio would require it to be taken down to half its height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained. Much wind damage + partial collapse of roof to south gable.
**C** *Conclusions* – **Not Suitable for retention**

**D** *Brief Description* – Cattle Court, dirt floor, timber trusses and purlins, cement fibre roof sheeting. Perforated plastic coated metal sheeting to gable apex panel of south gable. Trusses supported off steel posts / beams between building C and west wall of building E.
**D** *Observations.* Many damaged / rotted trusses. The south gable wall slenderness ratio would require it to be taken down to half its height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained.
**D** *Conclusions* – **Not Suitable for retention**

**E** *Brief Description* – Part Store, Part Cattle Court, single storey 600mm stone walls, concrete floors to store, dirt floor to cattle court, timber trusses, pitched hip ended slate roof.
**E** *Observations.* - Structurally sound with minor repointing works required though-out. Roof level with no excessive dipping, will require stripped. Likely to require rafter end splices at eaves, especially along valley gutter line. 2No large openings to west wall between buildings D and E have damage and cracking to the sides that will require repair / building up. Drainage channel + gully along base of south gable wall.
**E** *Conclusions* – **Suitable for conversion.**

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**BLOCK D.**

**F** *Brief Description* – Store, single storey, 600mm stone walls, concrete ground floor, raised tie trusses with slated finish, hipped return with building E, skew stones to west end.
**F** *Observations.* – Underside of ceiling and rafter leg ends at eaves boarded out with smooth cement fibre sheeting. ( possible asbestos content )
**F** *Conclusions* – **Suitable for conversion.**

**G** *Brief Description* – Byre, 1 ½ storey height but no 1st floor, 600mm stone walls, dirt floor, raised tie trusses with pan tile finish, hip / valley return onto building A, skew stones to east end.
**G** *Observations.* – Many tiles missing, rotten battens and rafters. North wall in very poor condition with much loss of outer stone face, loss of mortar, vegetation growth, and general dampness. Lower section of wall would appear to retain the dirt floor. Wall between buildings G and A has many large staggered openings and some structural movement as the result of failed lintols. This wall would require taking down and rebuilding if to be retained as part of building A
**G** *Conclusions* – **Not Suitable for retention**

**M** *Brief Description* – Store, 2 bay, 1 ½ storey height double pitched extension. Concrete floor, raised tie timber trusses with hip ended slate finish. Full height, full width opening to west end of northern bay, and full height, full width opening to south wall of southern bay. Roof valley between bays supported of steel beams and columns.
**M** *Observations.* – Gully drain and part channel to south west corner of wall.
**M** *Conclusions* – **Suitable for conversion.**

**BLOCK E.**

**H** *Brief Description* – Byre, single storey, 600mm stone walls, dirt floor, raised tie trusses with slate finish + slate finish mono pitch roof to the north side.
**H** *Observations.* – Many damage trusses, rotted and severely deflected rafters to mono pitch roof. South wall in state on near collapse due to loss of outer stones and wall core over much of its surface. Loss of stone wall to west side of mono pitch roof leaving triangular brick apex infill suspended.
**H** *Conclusions* – **Not Suitable for retention**

**J** *Brief Description* – Cattle Court, 600mm stone walls extended up using 10 courses of brickwork to long side walls, dirt floor, angle iron trusses with cement fibre roof sheeting. Vertical open boarded gable apex panel to west gable.
**J** *Observations.* Much eroded bed joint to west elevation. Much wind damage to the open east end. Should the roof be removed, the remaining walls would have no restraint, and their slenderness ratio would require them to be taken down to half height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained.
**J** *Conclusions* – **Not Suitable for retention**

**BLOCK E.**

**K** *Brief Description* – Cattle Court, 600mm stone walls extended up using 10 courses of brickwork to long side walls, dirt floor, angle iron trusses with cement fibre roof sheeting. Vertical open boarded gable apex panel to west gable.
**K** *Observations.* Much eroded bed joint to west elevation. Much wind damage to the open east end. Should the roof be removed, the remaining walls would have no restraint, and their slenderness ratio would require them to be taken down to half height to remain freestanding. Given that these walls are most likely shallow footed directly onto the ground, we would recommend demolition with any decent stone retained.
**K** *Conclusions* – **Not Suitable for retention**

**L** *Brief Description* – mono pitch infill roof between buildings K and M with cement fibre roof sheeting.
**L** *Observations.* – much collapse of roof over extent of infill.
**L** *Conclusions* – **Not Suitable for retention**

**Further Comments.**

Depending on existing / proposed ground and floor levels and the likely possibility that the existing stone walls are shallow footed directly onto the ground and may require underpinning should new ground floor make-up constructions undermine these.
This would also apply to areas where the external ground is higher / lower than the internal floor thus the wall would be retaining material.

Pointing works should be undertaken in lime mortar class NHL 3.5.

The temporary stability of existing walls to be retained should be assessed if any roofs / floors are to be removed during the course of renovation works.

All roofs will require stripping back, repair / renew rafters as necessary, with new sarking / underlay / and re-slating.

Due to the age of the buildings, a risk assessment / asbestos survey should be undertaken to ascertain if any of the cement fibre roof sheeting contains asbestos, similarly the ceiling boarding in Block D building F, and also at any electrical boards etc.

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**Drainage Assessment.**
( to be read in conjunction with A3 sketch CE4142-100 )

A site walkover was undertaken with the owner, Mr Whiteford, who described the current drainage system in place, although its full and exact route is not accurately mapped.

The majority of the roof drainage would appear to be connected to a piped drainage system which connects up to a large 600-900mm stone cundy running below the farm steadings down to a manhole in the field to the north. This manhole also collects from a drain / cundy from the large farmhouse to the east.

The drain from this manhole then runs north west along the fence line for some 165m before discharging into the Kidlaw Burn at NGR 3514000E, 665010N which then in turn joins up with the How Burn and Newhall Burn at NGR 350930E, 667180N

We were also advised that the field to the north of the farm steading has drainage field tiles laid across.

A shallow trial pit was dug in the field to a depth of 0.5m to establish the BGS information and borehole information was as to be expected.

**TP1.**

- Slightly Damp Topsoil and Subsoil ( Sandy Loam ) 0 – 300mm

- Slightly Damp Dense Fine to Course Sands with much small rounded gravel 300 – 500mm

Trial Pit 1 was used to undertake an initial surface water soakaway test, filling the 1800x700 pit with 200 litres of water from a barrel to a depth of 160mm.
All water had dispersed after 25 minutes indicating an infiltration rate of 9.4 seconds per mm. This is quicker than the 14 seconds / mm that SEPA look for in effluent disposal therefore secondary treatment would be requested.

**Drainage Conclusions.**

We can see no major difficulties with the disposal of both surface water nor foul effluent.
Surface water should be collected and discharged to the current system.
Foul Effluent could be discharged either to a header drain connected across a suitable number of field tiles, discharged to a closed soakaway system, or discharged to a rumble drain providing secondary treatment of the effluent before discharging into the existing drain running to the Kidlaw Burn.

Soakaways should not be constructed within 5m of a building or boundary, nor within 50m of a well / borehole used for the extraction of drinking water, nor within 10m of a water course.
Soakaways should be laid at between 1:200 fall and flat level.

All of the above would require SEPA approvals and consents to discharge.

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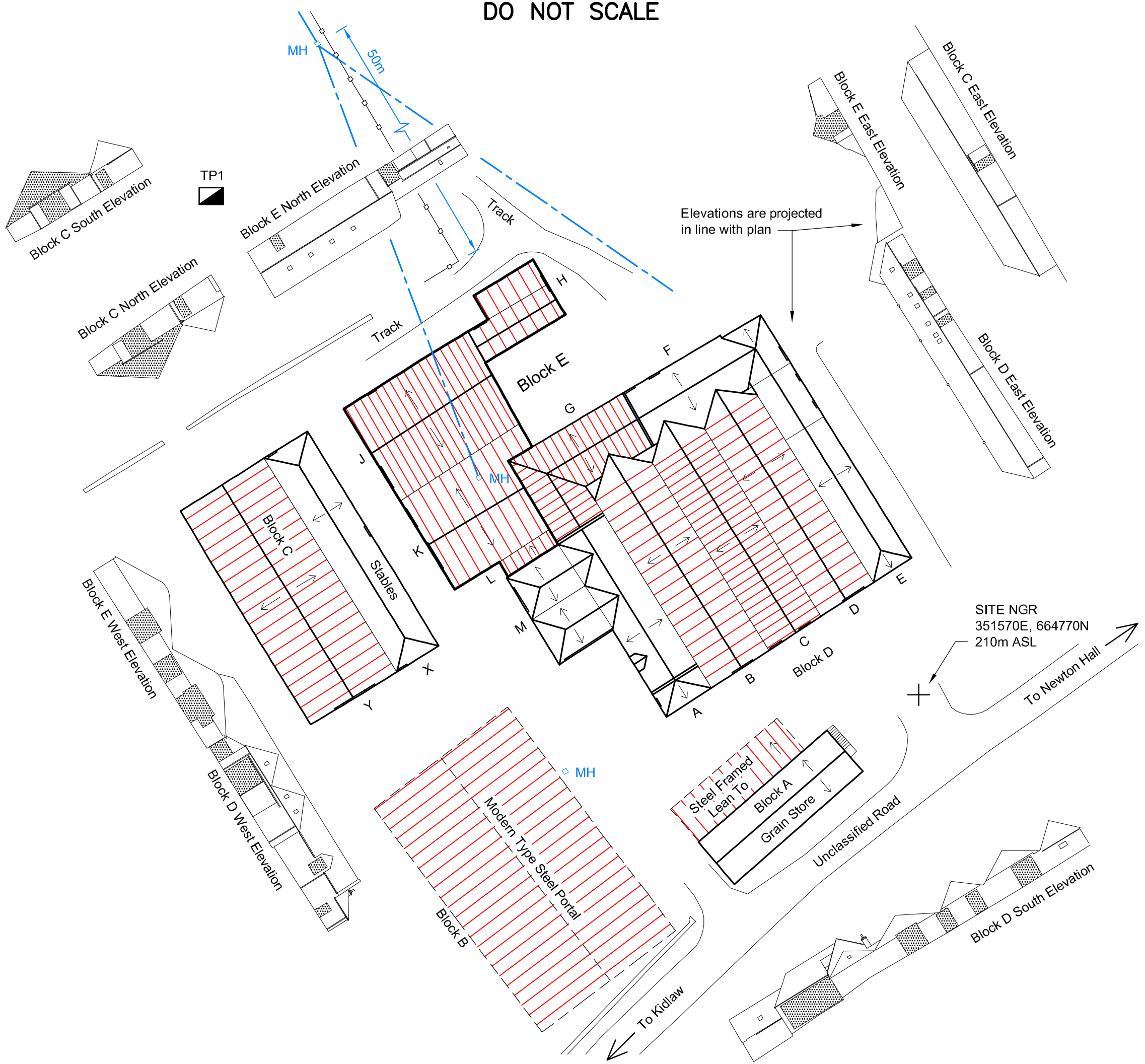
## APPENDIX

**CRA Sketch** – CE 4142 - 100

**Site Photographs**

**BGS Borehole Log**

DO NOT SCALE




REVISIONS

| STATUS | |
|---|---|


CRA
CONSULTING CIVIL AND STRUCTURAL ENGINEERS
SUITE 3
2 LAMBS PEND
PENICUIK
EH26 8HR
Tel: 01968 671600
Fax: 01968 677645


CLIENT
Mr & Mrs WHITEFORD

PROJECT
LONGNEWTON FARM
HADDINGTON. EH41 4JW

DRAWING TITLE
EXISTING SITE PLAN
To be Read with CRA Report

| | | | |
|---|---|---|---|
| PROJECT OFFICE | Penicuik | | |
| DATE | March 2018 | | |
| SCALES | 1:500 @ A3 | | |
| CHECKED BY | MK | DRAWN BY | MK |

DWG. No. CE 4142 - 100

North Wall of Block D, Building G.

North Wall of Block D, Building G.  East End of Building J.

South Wall of Block E, Building H.

South Wall of Block E, Building H.  East End of Building J.

Institute of Geological Sciences **IMAU borehole log form**

| | | | |
|---|---|---|---|
| NT 56 SW 8 | 5167 6485 | Long Newton, Yester | Block C |

| Surface level | + 212m (+ 696ft) |
|---|---|
| Water not struck | |
| Pit | |
| October 1984 | |

| Summary | Thickness (m) |
|---|---|
| Waste | 3.0m+ |

**LOG**

| Geological classification | Lithology | Thickness m | Depth m |
|---|---|---|---|
| | Soil: stony silty loam, greyish brown (5 YR 3/2) | 0.4 | 0.4 |
| Glacial sand and gravel | Gravel, clay bound<br>Gravel: coarse and fine with cobbles, subangular to rounded, mainly sandstone with greywacke<br>Sand: medium with coarse and fine, angular to rounded, quartz and rock fragments<br>Fines: disseminated silt and clay, light brown (5 YR 5/6) | 0.4 | 0.8 |
| Till | Diamicton: stony sandy clay, firm, with clasts composed mainly of sandstone, greywacke and igneous rocks, moderate reddish brown 10 R 4/6 | 2.2+ | 3.0 |

**From:** Tim Ferguson [redacted]
**Sent:** 23 May 2019 13:01
**To:** Ritchie, Linda (Dev Control) [redacted]; Dingwall, Keith [redacted]>; McFarlane, Iain [redacted]
**Subject:** RE: Planning application 18/00421/P - Longnewton Farm, Longnewton, Haddington

Hi Linda

Thank you for sending over this response.

We have reviewed together with our engineers.

The first point to make is that the engineer makes certain comments on not having justification and leads us to think that he may not have been provided with all the justification and viability information we lodged and thus not party to the complete picture.

We consider the engineer may not be aware of the proposal's enabling requirement following the previous conversion scheme not being marketable/sold or the position of requiring the limited number of new dwellings to cross fund keeping the high value buildings and that are the most visible from key public receptor points. A complete conversion proposal is not viable for reasons outlined previously.

That aside it is positive to note the engineers comments that they largely accept the demolition or do not consider the following units of being high value or maybe costly to retain. Those being Units 2, 3 6 and 8. Policy DC 2 allows for new extension of steadings and thus relates to Courtyard and units 7,8 and 9. Further justification in terms of structures etc is not considered necessary at this stage in the planning process and the engineer makes comment regarding that toward the end of his email.

Units 4 and 5 have been explained as to why they require demolition and beyond their lack of suitability and cost to convert they are needed to assist the limited new build enabling part of the proposal. They are not considered to be of significant value or architectural relevance. Those buildings that are of high value or character have been retained and would be converted.

The engineer himself has outlined that a number of his observations need not affect granting planning permission. The requests made as noted are adequately addressed by a suitable worded set of planning conditions and/or by the Building Warrant process as alluded to by our Client's engineer.

As we have discussed we have come forward with what we consider to be a balanced development that will save the steading from complete ruin and/or demolition due to health and safety concerns and with all development taking place within the existing steading (brownfield) confines. We have outlined how planning policy is complied with and reasoning where an element of flexibility in application should be applied in our opinion.

The proposal has sought to meet and comply with the general ethos set out within Policy DC 2 of the recently adopted LDP (2018) and the reasoning for the new build element has been detailed. Without a small element of new build the farm steading will very likely be demolished completely as it has been shown that pure conversion/extension is not a viable prospect in this individual application and is currently giving the owners increasing health and safety concerns.

We believe the information lodged and previous replies to earlier emails are sufficient for review and consideration of a planning application.

As such, it is not considered necessary to incur our Client further delays which have already been significant nor to be asked to outlay further significant costs to undertake detailed structural design engineering when we consider it not necessary at this stage or for a planning application. Most these matters would be reserved for the Building Warrant application and if anything is needed regarding planning that can be conditioned and prior to works being undertaken on site.

I trust you find the above informative and happy to discuss any related matter. Given the application has now been with the Council for over a year we kindly ask that the application be determined within the immediate future and we be notified of the assigned date as soon as possible.

Kind Regards

Tim

**Tim Ferguson**
**Director**

FERGUSON PLANNING
GOING THE EXTRA MILE

**T. 01896 668 744**
[redacted]
[redacted]
**W. www.fergusonplanning.co.uk**
[redacted]

**From:** Ritchie, Linda (Dev Control) [redacted]
**Sent:** 17 May 2019 10:42
**To:** Tim Ferguson <[redacted]
**Cc:** Dingwall, Keith [redacted]; McFarlane, Iain
[redacted]
**Subject:** RE: Planning application 18/00421/P - Longnewton Farm, Longnewton, Haddington

Tim,

In my last email to you I advised that the Council's consultant structural engineer was due to provide a further consultation response. That response was received by the Council on Friday last week and I have attached it for your information. Please let me know if you wish to make any comments on this latest response. I am out of the office until Wednesday next week but on my return I will discuss with Keith Dingwall a timescale for reporting the application on the Council's Scheme of Delegation List and will update you further on this. In the meantime please let me know if you wish to make any further comments on the advice provided by the consultant structural engineer.

Regards
Linda

[redacted].

**Linda Ritchie| Senior Planner, Planning Delivery | East Lothian Council | John Muir House | Haddington EH41 3HA |** [redacted] **|** [redacted] **|** [www.eastlothian.gov.uk](http://www.eastlothian.gov.uk) **| twitter: @ELCouncil**

**CRA** (Edinburgh) Ltd
2 Lambs Pend
Penicuik
EH26 8HR

**T:** 01968 671 600
**W:** www.craedin.co.uk
[redacted]

Consulting Civil & Structural Engineers

CE4142 / mk

5th February 2019

Ferguson Planning
Shiel House
Island Street
Galashiels

Dear Sirs

**RE Planning Application 18/00421/P Longnewton Farm**

Further to comments received from East Lothian Council's Linda Ritchie on the 14th January 2015 we can provide the following information.

Our report states Block A (Unit 1), Block D, Parts E and F (Unit 7), and Block D, Parts A and M (Unit 9) are suitable for conversion.
At Planning stage we are not required to design and detail any appropriate remedial works nor to defend the professional judgment of our considerable experience as to our findings and reasons why these decisions were made, out with those already provided in our report. These namely being on grounds of safety, both now and during likely renovation works. The other being cost, is it viable and safe to repair. We also have to bear in mind the unknown (hidden) construction of these walls, they way they have been constructed, the level of maintenance undertaken, various alterations and amendments made to them over the years and the fact a lot of them have been built to be purely functional and not aesthetic, again to provide the farm with cost effective large buildings with no future thoughts regarding possible use as domestic properties, hence building practices may not have been well adhered to. It is being asked of a certifying engineer to take a risk on their insurance only, that historically constructed walls will be viable in all cases despite their views otherwise.
Our report summary also advises of likely underpinning works, the use of appropriate lime mortars, temporary stability, and the possible presence of asbestos containing materials.

Block B (Units 2 and 3) are not suitable for conversion as noted as Block B is a large steel framed portal shed with a blockwork dado wall, metal clad side walls, and cement fibre roof and is outright agricultural and in our opinion could never see how a portal shed could be retained and incorporated into a domestic property. I am also unsure how building control, SER Certification, and also any engineer's insurance company would react to a proposal such as this.

We confirm in our report that the Stables, Block C Part X **is** suitable for retention and conversion as it is in good condition and have no issues with is conversion and structural suitability.
However, the Byre Block C Part Y is a large span open plan agricultural shed that has been added on to the rear of the stables, utilising the stable rear wall as end supports for the lightweight angle iron trusses. It only consists of 1 full height rear wall and 2 part height un-restrained gable walls. These gable end walls are poorly constructed, sections not bonded together, and with the sides of openings in a state of near collapse. The rear wall if left unrestrained by the roof as it currently is, is too tall and slender to remain freestanding by itself. If it could be incorporated into the design of the units and the retention on the stables then we would consider it for retention, however the proposals at this stage show a new build Unit 4.

The 2 buildings to the North East of the Stables referred to as partially ruinous , ie Block E, Parts J, and K, possibly including H are again large spanning cattle sheds with lightweight roofs, tall slender stone walls having various alterations made, poorly tied, undermined in places, openings formed faced up in brickwork with timber lintols, very poor state of repair, much cracking and washing out of mortars.

On Unit 8, our ref Block D Part G, the rear (north) wall is in very poor condition, retains the internal dirt floor, very wet, loss of mortar, mortar washout, vegetation growth, likely root damage to wall core, stone erosion and lamination, and would require full demolition due to these issues.
It is likely this wall may have collapsed had it no been for a buttressing raking wall being present.
The party wall abutting Part A has also suffered significant structural movement as the result of various large poorly lintolled openings and as such the remaining sections of wall are to narrow to repair, hence demolish and rebuilt if required as part of Unit 9

We are satisfied that the areas we have indicated as suitable for retention in our report stand, and that other than walls that we note require to be demolished and rebuilt as part of retaining that area of building, we have no intention of requesting further walls are demolished to satisfy any future amendments to the proposed layouts and positions of the units as currently proposed.

We hope the above is suitable for your records.

Yours sincerely

[redacted]

**Mike Kelly**
**Senior Structural Technician.**

[redacted]

**David Thomson, B.Eng. (Hons). C.Eng. M.I.Struct.E**
**Chartered Structural Engineer**

David R Murray and Associates

DRM Consulting Engineers

# Proposed Development
# Longnewton Steading
# Gifford

**E11602 RM/NJH**

July 2018


**150 St John's Road**
**Edinburgh , EH12 8AY**
**Tel 0131 334 0765**
**Fax 0131 316 4540**

10 Eyre Place
Edinburgh , EH3 5EP
Tel 0131 556 5155
Fax 0131 556 9147

20 Viewfield Terrace
Dunfermline , KY12 7HZ
Tel 01383 726075
Fax 01383 730605

## Contents

## Tables



## Appendices

# 1.0 INTRODUCTION

Mr & Mrs Whiteford are applying for planning permission to redevelop a small parcel of land located at Longnewton Steading, Longnewton, Gifford, East Lothian, Appendix A.

The proposed development would see the refurbishment and partial refurbishment of the some of the existing stone built barns with five new build properties being erected, Appendix A. All units would have private gardens and associated driveways and drainage infrastructure.

The site contains a number of stone built farm buildings which are for the most part no longer in use with a number of the roofs in a poor state of repair. A large and more recent steel frame building and area of concrete are located on the south-western portion of the site. Land in the vicinity of the site slopes down towards the north-west with agricultural land is present to the north, west and south and Longnewton House and grounds to the east.

A desk study and intrusive investigation were previously carried out on the site in 2008 to assess ground conditions and contaminant levels and the impact that these may have on the proposed future use. The purpose of this report is to review the findings of the previous investigation given the changes in guidance and legislation that have occurred since 2008 and to allow a walkover to re-inspect the site.

This report has been prepared taking due cognisance of current best practice and legislation with third party contractors undertaking the works in general accordance with Eurocode 7 methodologies. External documents reviewed are referenced in the final appendix of this report and are referred to in the text of the report thus [xx]. The assessments undertaken and recommendations are made on the basis of a residential end use with garden areas and associated infrastructure.

This report has been prepared for the exclusive use of Mr and Mrs Whiteford and their representatives. Any use of this report by a third party, or any reliance on or decisions made based on it, are the responsibility of such third parties unless written confirmation at the request of Mr and Mrs Whiteford been provided by David R. Murray and Associates.

If new information becomes available in respect of the site, and/or legislation changes after the submission of this report and/or one year has elapsed since submission, the report should be referred to David R Murray & Associates for comment or amendment of the report where necessary.

Recommendations on foundation solutions, potential construction constraints and suitable remedial measures, if deemed to be required as a result of the review of the intrusive investigations undertaken, are provided in this report.

## 1.1 Objectives

The objectives of the investigation were as follows:

- To review available archive and site investigation information, to identify any potential geotechnical, mineral and/or environmental constraints to the development proposed.
- Based upon the results of intrusive investigations, to provide an assessment of ground conditions in respect of the development proposals and provide recommendations on suitable and cost effective foundation solutions in order to support the development proposed.
- To provide recommendations, where necessary, on measures to address any identified soil contamination and soil-gassing levels identified by the intrusive investigations and risk assessments undertaken.
- To provide recommendations on any further intrusive investigation deemed to be necessary following review of archive information and a site walkover.

## 1.2 Overview of Investigation Methodology

A desk study review of the historic setting, landuse, potential contamination sources in the surrounding situation and the previous site investigation was used to formalise a preliminary Conceptual Site Model (CSM) in terms of potential contaminants and contaminant/pathway/receptor linkages, which might be associated with the site.

The intrusive investigations comprised boreholes and hand pits and site investigations have been undertaken at approximate 25m – 30m centres. Investigations were therefore spread evenly across the site where access allowed.

Representative soil samples were collected from the pits and boreholes for detailed geochemical and geotechnical testing. Gas monitoring was also carried out following installation of monitoring standpipes within three of the boreholes advanced.

The results of in-situ geotechnical and laboratory tests on disturbed and undisturbed soil samples were used to determine the geotechnical and geoenvironmental ground conditions which were identified in the desk study review to assist in the design of suitable foundation solutions for the development proposed.

The significance of the laboratory and gas monitoring data obtained was assessed in terms of site-specific contamination assessment criteria for various contaminant parameters and current guidelines relating to ground gas. This data was subsequently used to update the preliminary CSM and provide advice on remedial measures to adequately address potential risks, if identified.

## 2.0 SITE SETTING & DESCRIPTION

The site, the approximate centre of which is located at NGR 351530, 664780, is currently developed and contains a number of stone built farm steading buildings, the majority of which are no longer in use and in a poor state of repair with roof collapse noted, particularly within the buildings on the central portion. The site extends to around 0.81Ha in area.

A large steel framed building and area of (overgrown) concrete is present on the south-western portion of the site, with this building used to house farm machinery and a horse box. The stone built building on the north-western portion of the site is used as stables. We understand that the buildings were in use for sheltering and feeding livestock with these activities ceasing in the last 10 years. Tarmac and gravel surfaced access tracks surround the buildings with a number having concrete floors within them. Parts of the site northern and central portions are heavily overgrown.

A bund of soil is present around the western edge of the site and we understand that silage was formerly stored on the concrete within this area. Whilst the majority of the farm buildings contain slate and corrugated steel roofs, a number are roofed with asbestos cement, particularly within the central portion. Part of an asbestos cement roof has collapsed in the central portion and pieces of asbestos cement are therefore present on the ground in this area. Overhead cables and a telephone line cross the site and service a large house, Longnewton House to the east and a residential dwelling further to the east.

Whilst horse tack, household items and disused vehicles and farm machinery are present within and around the buildings on the site no evidence was noted during the site walkover for the storage of potentially deleterious materials.

Site levels across the site fall gently towards the north-west in common with the immediate surrounding area. The site is bounded by an adopted, although unclassified and apparently unnamed, access road to the south with ground levels rising towards the Lammermuir hills to the south of this. An iron age hill fort is present in the hills further to the south-west. As well as the residential development to the east, further residential development in the form of a row of cottages and former school house are present a little further to the south-west. The site is bounded by agricultural grazing land to the north and west as well as further to the east and south.

The nearest water course in the vicinity of the site is the Kidlaw Burn which is located 150m to the west of the site. This burn flows towards the north.

Selection of site photographs provided below.


Storage of silage 2008


Storage of silage 2008


Former silage storage area 2018 – all silage materials long since removed


Looking northwards across sites western portion 2018

Outbuilding on north-western portion.

Northern edge of site

Looking north-west across central portion of site.

Collapsed roof, central portion

Building on southern portion to be retained

Part of building on eastern portion to be retained.

# 3.0 DESK STUDIES

Archive information from the following sources was reviewed in order to allow an assessment of potential development constraints to be made.

- An Envirocheck Report, Appendix B, containing Ordnance Survey map extracts covering the period 1854 to 2007, and statutory information from SEPA and East Lothian Council.

- A Basic Geological Assessment by the British Geological Survey (BGS), Appendix C.

## 3.1 Summary of Site History

Examination of historic Ordnance Survey sheets, Appendix B, indicates that the site has remained in agricultural use since at least the mid-19th Century.

Farm steading buildings, have been present on the site from at least 1854, whilst Longnewton House has been present to the east since the same period. The configuration of the buildings (largely used to house livestock) on the site has essentially remained unchanged, although a small part of one building was demolished on the northern portion between 1907 and 1957. The modern shed on the south-western portion was erected around twenty years ago. The buildings on site have remained essentially unused since farming activities ceased in the last ten years.

The history of the site and the immediate surrounding area is summarised in Table 1.

**Table 1: Historic land use of the site and environs**

| Map Survey Date | Subject Site | Site Environs |
|---|---|---|
| **1855** (1:10,560) | Steading buildings occupy the bulk of the site area with a track running through its southern edge. | Land surrounding the site is largely agricultural in nature although a large residential property Longnewton House is present to the east. A larger Manor House, Newton Hall is located further to the east north-east.<br><br>A school and cottages are present 75m to the southwest, whilst a number of limestone quarries and a kiln are located over 500m to the west and west south-west, close to the small settlement of Kidlaw.<br><br>The Kidlaw Burn is located 160m to the west and meanders north north-eastwards. |

| Map Survey Date | Subject Site | Site Environs |
|---|---|---|
| **1894** (1:2,500) | The steading buildings enlarged. Road/track, realigned and now runs to the south of the site. South-western portion of site remains undeveloped. | Area surrounding the site largely unchanged, although Longnewton House has been enlarged and quarries and lime kilns further west indicated to be disused. School no longer referred to as such to the west south-west. |
| **1907-1908** (1:2,500 & 1:10,560) | Little significant change. | Little significant change, smithy located to the west of Longnewton cottages to the south-west. |
| **1957** (1:10,000) | Minor demolition of building on northern portion, and enlargement of building on central portion, but otherwise little significant change. | Little significant change. |
| **1967** (1:2,500) | Little significant change. | Extension to Longnewton House to the east, with some ancillary buildings erected to the north of this. Sheep folds indicated to be present to the west of the site boundary. |
| **1970-82** (1:10,500) | Little significant change. | Little significant change. |
| **1994** (1:2,500) | Little significant change. | Little significant change. |
| **1999** (1:10,000) | Little significant change. | Little significant change. |
| **2007** (1:10,000) | Large building erected on south-western portion of the site. | Little significant change. |
| **2018 Site walkover** | Little significant change, although some buildings in disrepair. | Little significant change. |

## 3.2 General Geology of the Area

A Geological Assessment by the British Geological Survey (BGS), Appendix C, confirms that their records show no evidence of significant made ground or infilled ground on the site. Some localised made ground may be present associated with the long standing steading development could be expected however.

Natural soils underlying any made ground present are expected to comprise poorly consolidated sands and gravels, overlying glacial till (boulder clay), which is typically firm to very stiff clay with pebble to boulder size rock clasts, and which is often softer and siltier where weathered close to ground surface. Irregular bands of sand and gravel can be expected within the till. The thickness of the drift deposits is unknown, but the BGS anticipate that rock would be expected at depths of less than 5m.

Solid strata underlying the drift deposits have been disrupted by faulting with the Lammermuir Fault, which trends southwest to northeast, thought to be present beneath the northern edge of the site.

This would be represented at rockhead by a zone of broken or disturbed rock.

To the south of the fault, solid rock underlying the drift deposits within the majority of the site boundary is expected to be of Ordovician age, and comprise medium to thick bedded sandstones, with thinner shales, mudstones and siltstones. The dip of these strata is likely to be up to 70° towards the northwest.

To the north of the fault, and perhaps underlying a very small area of the site, lies Lower Carboniferous strata comprising sandstones, siltstones and mudstones, which dip generally to the north or northeast.

The BGS confirm that they have no records of any former mineral extraction beneath or adjacent to the site, and would consider the presence of unrecorded workings to be unlikely.

## 3.3 Mining Issues

The site is located out with a Coal Authority reporting area with the strata not containing mineral seams of economic importance.

On the basis of the information supplied by the BGS and Coal Authority and our knowledge of the area it is considered that the mineral stability of the site is satisfactory given the absence of potentially economic mineral seams and further investigations in this regard are not considered to be necessary.

## 3.4 Regulatory Authorities Archives

The Envirocheck Report, Appendix B, contains information on landfill sites, waste treatment and transfer operations, discharge consents and emissions consents, sites holding radioactive substances authorisations and hazardous substances consents, information from contemporary trade directories and information on sites where fuels are stored.

Review of this information confirms that there are no records of prescribed processes, Local Authority Integrated Pollution Prevention and Control (LAIPPC) or Local Authority Pollution Prevention and Control (LAPPC) within the site boundary or within 500m. No fuel station entries are noted within 500m of the site.

There are two discharge consents associated with a septic tank discharge within 200m of the site, and a further consent at 206m.

A water abstraction permit, held by East Scotland Water Authority is present 747m to the southwest of the site, relating to abstraction from a small reservoir feeding the Kidlaw Burn.

Review of online radon maps indicates that the property is in a wider area with the potential for elevated radon gas levels to be present with 3-5% of homes having the potential to be above the action level. It is recommended that a site specific radon report be obtained to assess if radon protection measures will be required beneath the new development at this site.

In general none of the activities identified in the archive are considered to represent any significant risk to any future development proposed, although due diligence site investigations would, as standard, be necessary to assess the presence of soil contamination.

## 3.5 Hydrology and Hydrogeology

As previously confirmed the nearest watercourse in the vicinity of the site is the Kidlaw Burn which is located some 160m to the west of the site, and flows from south to north.

Based upon the local topography the general direction of groundwater and surface water flow in the immediate vicinity of the site area is likely to be towards the north-west. Any contaminated soils or groundwater on the site would be expected to impact upon groundwater and surface water bodies in this direction.

No classification of water quality was provided in the Envirocheck report, however given the water abstraction permits pertaining to the reservoirs upstream of the site, water quality would be anticipated to be good. We understand that the future development, in common with the surrounding properties, would be served by a private supply, drawn from surface/groundwater.

Review of information contained within the Envirocheck report and online SEPA flood maps (www.sepa.org.uk/flooding) showed that the site itself is not at risk of potential flooding from water courses or flooding from surface water runoff.

The bedrock underlying the site is classified as a Major to Highly Permeable Aquifer, essentially described as highly permeable strata usually with a known possible presence of significant fracturing rocks. However, the pathway of any mobile contaminants in the area may be restricted and broken by any low permeability clays which might be present.

There are however sands and gravels above these which would have a high leaching potential with little ability to attenuate diffuse source pollutants if any were present.

Depending upon the presence of glacial clays, any shallow water may not be considered as a water body given its likely perched nature due to the impermeable nature of glacial clays. An estimate of the hydraulic conductivity of glacial clays would be of the order of 1.0 x $10^{-6}$m/s or lower. This would result in yields of water of less than 10m3/day. Therefore, in relation to The Water Environment (Controlled Activities) (Scotland) Regulations 2005, the superficial soil or drift would be classified as a non-aquifer.

Whilst any sands and gravels may potentially hold perched water, given the local topography it is unlikely that they would have the potential to retain significant water with only low yields and slow recharge likely.

The underlying bedrock aquifer may be a receptor in terms of its potential as a future drinking water source. However, it is considered that the proposed residential end use would not have a significant adverse impact on any potential bedrock aquifer with ground disturbance being shallow and not extending to the rock. Any low permeability soils, if present, would provide a barrier to downward migration.

## 3.6 Previous Intrusive Investigation

Intrusive investigations were previously undertaken within the site area the supervision of DRM in 2008. The results of these investigations, which identified the presence of localised made ground are discussed in greater detail later in this report.

## 3.7 Summary of Desk Study Information

The following issues/potential construction constraints have been identified from the archive information reviewed.

*Engineering:* Significant made ground is not anticipated to be encountered on the site given its history albeit some made ground would be present. Shallow strip footings in competent natural materials at shallow depth are likely to be a feasible foundation solution. The foundations of the existing buildings to be retained would be expected to be within the natural soils. Given the age of the buildings on the site any settlement is likely to have long since occurred.

Site investigations was considered to be necessary to confirm the desk based study information and allow geotechnical laboratory testing of soils to determine their engineering properties to allow the most cost effective and appropriate engineering solutions to be determined.

*Environmental:* Investigation works were necessary to define the depth, extent and composition of any made ground on site to allow an assessment of potential environmental and health risks associated with any contamination.

Made ground was encountered during the previous works undertaken in 2008 with low level soil contamination noted. A re-appraisal of these results in line with current legislation and guidance is undertaken in this report to assess the requirement for remedial measures on the finished development.

*Mining:* Review of available archive information indicates that mine workings do not underlie the site and as such mineral stability is considered to be satisfactory with no further intrusive investigation necessary in this regard.

# 4.0 PRELIMINARY CONCEPTUAL SITE MODEL

One objective of the desk study review was to enable a preliminary assessment to be made of potential environmental risks and liabilities that might be associated with the site as a result of both its current and historical usage and the usage of adjacent properties. The information obtained from a review of available archive material was then used to prepare a Conceptual Model for the site in terms of potential types and sources of contamination and their potential impact on identified receptors and on the proposed end use of the site.

The Conceptual Site Model (CSM) is used to identify the presence of potential sources and types of contamination either on or within influencing distance of a development site. Where potential sources are identified it is necessary to identify viable routes of exposure (pathways) by which contaminants could migrate and, hence, the potential for contaminants to ultimately impact upon identified receptors. The types of receptors that may be impacted are dependent upon the proposed end usage of a site.

The CSM is also integral to the design of site investigations, which should be carried out to examine if any contaminants are present and whether viable pathways exist between contaminants and the receptors identified. Where possible the level of likely harm to receptors is risk assessed and recommendations to reduce/remove potential risks to acceptable levels are formulated.

Following completion of intrusive investigations and risk assessment the CSM is revised using quantitative data, and where necessary, recommendations to break identified potential pollutant linkages are made.

At desk study stage therefore, an assessment is undertaken based on review of historic archive information and published data. Therefore the risk assessment was undertaken using a low, moderate and high risk matrix, depending on the likelihood of contamination being present and the significance of the impact/consequences on the identified receptors assuming a residential end use.

Taking cognisance of DEFRA's R&D Publication, CLR8 and DoE Industry profiles[2], potential contaminants possibly associated with historical activities on site have been identified in the CSM summary which is provided in Table 2.

**Table 2: Preliminary Conceptual Site Model**

| Location of Potentially Contaminating Activity | Possible Contaminants | Potential Pathways | Receptor | Perceived Risk |
|---|---|---|---|---|
| Made ground is known to be present within the site boundary.<br><br>Buildings contain asbestos and these materials may locally be present at shallow depth in soils. Pesticides may also be present in soils given the previous agricultural use.<br><br>Possible presence of radon gas. | A general suite of analyses (including heavy metals, pH, sulphate, organic content) and, if made ground or other sources of contamination are identified, PAH's, TPH's, asbestos and pesticides, should be carried out on collected soil samples across the site in order to confirm the presence or absence of contaminants of concern.<br><br>Gas monitoring should also be undertaken across the site area. | 1. Dermal contact and ingestion.<br>2. Dermal contact.<br>3. Inhalation of dust/fibres/vapours (indoors and outdoors).<br>4. Contact with buildings/services.<br>5. Migration of contaminants and landfill gas through service runs and subsequent accumulation of gas in buildings.<br>6. Leaching of contaminants into groundwater and off-site migration.<br>7. Ingestion of site grown produce. | Site contractors during development. | 1,2,3 (low) |
| | | | Future site Residents | 1,2,3,5,7 (low) |
| | | | Adjacent Land Users | 3,5,6 (low) |
| | | | Flora and Fauna on the site and surrounding area. | 1,2,3 (low) |
| | | | Buildings and Services. | 4,5 (low) |
| | | | Groundwater and surface waters. | 6 (low) |

Based on the information reviewed, the potential environmental risks associated with the development proposed were considered to be low to moderate, but would depend upon the presence and nature of any made ground with further assessment and investigations to confirm following site investigation.

The most suitable form of remediation, if required, would depend to a large extent upon the contaminant identified, and the nature of risk and likely receptor. The aim of the remediation is to break the source-pathway–receptor linkage which can be achieved in a variety of ways. If any of the linkages are broken, the identified risk is deemed to have been removed. For instance, removal of a point source of contamination removes its potential to impact upon the identified receptor and the link between contaminant and receptor is broken. Likewise where a barrier is placed between the contaminant source and receptor the linkage is again broken as the receptor cannot come into contact with the contaminant source.

The potential for gas generation both within the site boundary and from off-site sources was not considered to be significant but investigation would be necessary to confirm.

Due diligence geotechnical and environmental investigations were necessary to confirm if significant risks were associated with the site and these are described in the following sections of this report.

# 5.0 SITE INVESTIGATION

The site investigations were undertaken in 2008 to achieve the following objectives:

- To confirm the geotechnical ground conditions identified at desk study stage and to assess the extent and depth of any unsuitable engineering soils with respect to foundations and development (i.e. made ground) or weak natural soils if present.

- To quantify any soil gassing levels within the site boundary.

- To assess the significance of contaminant levels associated with any made ground and/or natural soils by selecting samples for geochemical testing from across the site.

- To determine possible impacts that any contaminants, if identified to be present, are likely to have on identified site receptors both during and following development by undertaking detailed risk assessment.

## 5.1 Investigation Methodology

Following review of the desk study information the following exploratory works and testing were undertaken in 2008:

- Five percussion boreholes (BH01 – BH05) advanced to depths of between 2.65mbgl and 3.80mbgl by SKF Ltd. Gas and groundwater monitoring standpipes were installed in three (BH1, BH4 and BH5) of the boreholes advanced.
- Seven hand excavated pits, numbered HP1-HP7, were advanced to a maximum depth of 0.85m below existing ground levels adjacent to the existing buildings on the site to assess existing foundations and allow the collection of further soil samples for testing.
- Geotechnical and geochemical testing was undertaken on samples collected from the pits and boreholes and details of the specific tests carried out are provided in the following sections of this report.
- Two hand pits (S1 and S2) were also advanced in the vicinity of silage mound on the south-western portion of the site in order to assess ground conditions in this area and to allow the collection of soil samples.

The soil investigations undertaken took due cognisance of original and updated British Standards BS5930:2015 [3] and BS10175/2001+a2:2017 [4] guidance and codes of practice.

It is considered that the locations and spacing of the trial pits and soils bores are suitable to provide a representative indication of ground conditions across the site given its size.

The approximate locations of the trial pits and boreholes advanced in 2008 and are shown on Drawing No. E11602/0101, Appendix D. Hand pit and borehole logs prepared by SKF Limited are provided in Appendix E.

## 5.2 Geotechnical Sampling Strategy and Analysis

As the boreholes and hand pits were advanced, details and depth of the strata encountered were noted, together with the depth of disturbed and undisturbed soil samples taken. The stability of the sides of the pits was also recorded. In situ Standard Penetration Tests (SPT's) were taken and undisturbed samples were collected during the drilling of boreholes and observations on groundwater conditions noted.

Representative samples of each soil strata were collected from the hand pits and boreholes advanced by SKF in glass jars, tubs and bags for more detailed examination and geotechnical analysis.

The following testing was undertaken on samples collected from within the site:

- 5 particle size distribution determination tests.
- 3 Moisture content determination.
- 1 Immediate undrained triaxial compression test.
- 1 Oedometer test
- 2 Atterberg Limits test
- 1 California Bearing Ratio Test (CBR)

Given the largely granular nature of the soils at the site, tests normally carried out on cohesive soils were limited.

The results of these tests are provided in the SKF report, Appendix E.

## 5.3 Geoenvironmental Sampling Strategy and Analysis

Given the proposed end use the main identified receptors on the site would be construction personnel during development activities and future site residents. Therefore, soil samples selected for chemical analysis were generally collected from soil horizons within 1.0m of ground surface, as it is these soils that the identified receptors are most likely to come into contact with.

Following review thirteen soil samples were tested for; arsenic, cadmium, total chromium, copper, lead, mercury, nickel, selenium, zinc, total cyanide, pH, boron (water soluble), monohydric phenols, water soluble sulphate and sulphide with the majority of these comprising topsoil and made ground. Three samples of made ground were analysed for the presence of asbestos.

The percentage of natural organic matter in samples collected from various horizons was established by carrying out total organic carbon analysis on three samples. To provide an indication of organic contaminant levels associated with soils, three samples were analysed for the presence of speciated Texas Banded TPH's.

Two samples we tested for organochlorine pesticides to provide an initial screening assessment as to whether these contaminants were present.

Six soil samples were also submitted for leachate analysis to assess the potential bioavailability of the contaminants noted in the soil samples.

Attempts were made to collect water samples from the boreholes some of which were; either dry, or dried up quickly during well development and purging. Water was subsequently collected from BH1 and BH4.

The samples were tested for; arsenic, cadmium, total chromium, copper, lead, mercury, nickel, selenium, zinc, total cyanide, pH, boron (water soluble), monohydric phenols, total sulphate, water soluble sulphate and sulphide, total hardness TPH, PAH, and VOC content.

## 5.4 Ground Gas Monitoring

Six rounds of ground gas monitoring were undertaken in the three borehole standpipes located within the site area in 2008.

Gas and groundwater level monitoring was undertaken using an infra-red GA2000 gas analyser and electronic dip meter.

The maximum methane, carbon dioxide, carbon monoxide and hydrogen sulphide concentrations and minimum oxygen concentration recorded in each installation over a sixty-second monitoring period were taken as the gas concentrations. The prevailing atmospheric pressure during each monitoring event was also recorded. Gas flow rates were measured on each occasion.

# 6.0 SUMMARY OF SUBSOIL CONDITIONS

The following section summarises the subsoil conditions encountered during the site investigation undertaken with the logs provided in Appendix E.

## 6.1 Topsoil and Made Ground

Review of hand pit and borehole logs confirmed the presence of made ground to depths of up to 0.70m across the majority of the site, while within BH3, made ground was found to extend to 1.20m below existing ground levels.

Made ground generally comprised gravelly sands or sandy gravel, with occasional cobbles and brick, tile or concrete fragments. Depending on the locations advanced, topsoil and tarmac were encountered overlying other made ground materials.

Soft to firm gravelly clay fill was encountered in HP06 and HP07. The base of made ground was not proven within the pits HP01 and HP05.

## 6.2 Natural Soils

Where proven, immediately beneath made ground, natural soils comprised loose to medium dense sands and gravels within BH3-BH5 and HP3, and soft to firm, and firm to stiff consistency sandy gravelly clays within BH1, BH2, HP2, HP4, HP6 & HP7.

## 6.3 Obstructions & Bedrock

Weathered rock, which was recovered as angular gravels of sandstone and siltstone, was encountered from depths of between 1.80m and 2.60m. Within BH3, an obstruction was encountered at 2.82m, which is also thought to be bedrock.

No buried structures were encountered during the intrusive investigations, although a weak concrete was noted at 0.10-0.15m within HP6. Where present, concrete slabs at ground surface would require to be broken out at an initial stage of the development works.

## 6.4 Groundwater

During the advancement of all trial pits and boreholes, observations were made and recorded with regards to water strikes where encountered.

Water ingress was encountered at shallow depth during the drilling of some of the boreholes, which is unsurprising given the relatively shallow bedrock and present of largely granular materials, although the hand pits generally remained dry.

Monitoring of water levels was subsequently undertaken in standpipes installed in boreholes across the site. The following table provides a summary of groundwater levels recorded:

**Table 3: Groundwater monitoring fluctuation range in boreholes**

| Borehole | Water Depths Below Existing Ground Level (m) |
|---|---|
| BH01 | 0.44-0.69 |
| BH04 | 0.69-1.50 |
| BH05 | 0.40-1.63 |

The results of monitoring in standpipes would indicate that water may be locally encountered in shallow excavations if left open for any length of time.

Cognisance should be taken of the potential requirement for water control in deeper excavations such as for drainage and during periods of inclement weather which is a standard requirement. Allowance should also be made for shoring of deeper excavations particularly where non cohesive soils are present to guard against the potential for collapse in the presence of water.

# 7.0 SUMMARY OF GEOTECHNICAL TEST RESULTS

The investigation has confirmed the presence of natural soils at shallow depth across much of the site area. The results of testing provided in Appendix E and are summarised below.

SPTs were undertaken in the boreholes during the drilling works in 2008 and recorded 'N' values of between 7 and 26 in the natural soils. No SPT's were recorded within made ground. The recorded values would indicate bearing capacities in the underlying natural soils to be in excess of 75kN/m$^2$. N values in excess of 40 were achieved within weathered bedrock strata, and full penetration was unsurprisingly not possible within the bedrock strata.

Given the general lack of cohesive soils on site, laboratory testing was essentially limited to sieve analysis and moisture content determinations. A sample of clay collected at a depth of 1.00m in BH2 was however subjected to more detailed testing, Appendix E.

The results indicated an average cohesion of 18kPa which was measured in association with a friction angle of 19°. Taking these values together an allowable bearing pressure for the clays at this position of 75kN/m$^2$ would be appropriate.

Classification testing (Atterberg Limits) on this sample confirmed visual inspection with the clay determined to be of low plasticity with a PI of 12% and a moisture content of 13%. These results are indicative of competent glacial clays.

The coefficient of volume compressibility measured in an oedometer test taken from slightly deeper in the sample was less than 0.260m$^2$/MN with a moisture content of 12.4%. This value would indicate a moderate compressibility of the soil tested.

The results of particle size distribution curves on samples of granular soils collected from across the site generally confirmed field descriptions in respect of the samples and showed that they were relatively well graded. Particles within the clay and silt fractions ranged between 15% and 30%.

## 7.1 Buried Concrete

Sulphate and pH testing was undertaken on a number of soil samples collected from the site, Appendix G. The results show that the pH ranges in the soil samples were between 6.4 and 8.0. The maximum soluble sulphate concentration was 95mg/l for all the samples tested.

Taking cognisance of these results, it is considered that sulphate design class DS1 and ACEC class AC-1 as defined in BRE Special Digest 1:2005 [5] should be allowed for the design of buried concrete.

# 8.0 GEOTECHNICAL APPRAISAL

## 8.1 Foundation Design and Drainage

The current proposal is to develop the site for low rise residential usage with associated gardens and roads and drainage infrastructure. Some of the existing farm buildings on the site would also be retained and refurbished.

Line loads for the development proposed are anticipated to be of the order of 50kN/m run.

The investigation has confirmed that made ground is generally only present to shallow depth with a maximum thickness of 1.20m below existing levels.

Natural soils underlying the topsoil and made ground consisted of loose to medium dense to dense silty sands and gravels with cobbles, although in the hand pits shallow clays were initially indicated to be of soft to firm consistency.

Based upon visual inspection, and the results of geotechnical testing, it is considered that the natural soils at depths of the order of 1.0m below existing ground levels should provide the bearing pressures necessary to support the development proposed.

Therefore, where finished site levels are equal to or lower than those currently present it should be possible to support two storey development on standard concrete strip footings assuming minimum allowable bearing capacity of 75kN/m$^2$.

Deep underbuilding in brick/blockwork would be adequate for any proposed new houses in areas where site levels require to be raised.

Test pitting on a plot by plot basis should be undertaken immediately prior to construction to confirm the nature of strata at formation depths within the site boundary.

The existing buildings within the site which are due to be retained have been founded within the natural soils for over 100 years and are of stone construction. The conversion of these buildings to residential use is unlikely to place any additional loadings on the foundations and any induced further settlement is considered to be unlikely.

We would however recommend that a structural survey of the buildings to be refurbished be undertaken at an early stage of site development works.

Where extensions are to be added to the retained buildings care should be taken ensure that the original foundations are not undermined as a result of the development activity with underpinning undertaken where necessary.

The foregoing foundation solutions should be re-appraised once the development layout and, in particular, proposed engineering levels have been finalised.

Arisings generated during development should be suitable for use as general fill, they will however require to be suitably sealed and protected from the elements where they are not placed immediately after generation.

As is general good practice the formation should be protected against surface or rainwater by placing a blinding concrete or the foundation concrete itself as soon as the formation has been prepared. Whilst significant water ingress is unlikely some allowance should be made for dewatering as is standard good practice, in deeper drainage excavations. Water may also pond during periods of inclement weather.

Excavations should be suitably supported along their full length particularly in the presence of water and granular soils, to guard against the potential for collapse.

Allowance may need to be made for hard dig and breaking out of rock in drainage excavations and an assessment made once designs are available.

## 8.2 Access Roads

It is considered to be unlikely that any new adopted roads infrastructure would be utilised at this site. Notwithstanding this, it is considered that full capping layers should be allowed for all access roads formed within the site given the presence of made ground in some areas.

California Bearing Ratios (CBR's) were measured on a single bulk sample collected from BH3. CBR values in this sample exceeded 5% and were measured in conjunction with a natural moisture content of 15% and a dry density of 1.91Mg/m$^2$. This would tend to indicate that it may be possible to compact existing soils at the site for use in capping layers.

# 9.0 APPRAISAL OF ENVIRONMENTAL ISSUES

As previously discussed, the potential risk associated with contaminants has been assessed using the source-pathway receptor principal. The assessment undertaken therefore was designed to explore more fully the potential for contaminants to be present on the site based upon the existing data and to explore whether any viable pathways by which contaminants could impact upon identified receptors.

By carrying out such an assessment it is possible to assess whether land for redevelopment is 'suitable for use' in its present state. Where the risk assessment indicates that there is an unacceptable risk to identified receptors from the presence of contamination, a development site cannot be considered as being suitable for use without some form of remedial action being undertaken.

The Environmental Protection Act Part IIA identifies contaminated land as 'any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, or under the land that; a) significant harm is being caused or there is a significant possibility of such harm being caused; or b) pollution of controlled water is being or is likely to be caused'.

Soil sampling and gas monitoring were therefore undertaken as part of the investigation. The information obtained enabled the risks identified in the Conceptual Site Model to be more accurately quantified and assessment made of whether the site was suitable for use. In this case suitable for use refers to the development of the site for residential use with private garden areas.

The data obtained was therefore assessed in conjunction with information on existing ground conditions and development proposals.

## 9.1 Soil Contamination

A tiered approach to risk assessment has been undertaken following review of site data. The tier 1 risk assessment is structured according to the classes of receptors identified in the CSM and the first step of our assessment involves the comparison of laboratory data against conservative generic criteria published by a variety of organisations.

The Environment Agency and DEFRA published their Contaminated Land Report (CLR11) [1] in 2004, and now supersedes the Contaminated Land Reports CLR7-10 [56-59], published in 2002. CLR11 is supported by the Environment Agency Science Reports SR2-4 [6-8], published in 2009, which provide the technical background and guidance to human health toxicological assessment and the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model, CLEA v1.06. This software has recently been updated and CLEA model v1.07 is now available for use.

The assessment levels generated by CLEA v1.07 have been used in this report as an indicator parameter in the first instance. It is noted that the concentrations generated are actually more stringent than recently produced and widely available peer reviewed assessment levels for contaminated land assessments. In particular the Suitable For Use Assessment Levels (S4UL's).

The S4ULs follow on from the previous LQM/CIEH Generic Assessment Criteria which were widely used by many local authorities and private sector practitioners. The S4ULs represent updated assessment criteria in line with recent developments in UK human-health risk assessment practice, including additional land uses and exposure assumptions presented in Defra's C4SL guidance. However, unlike the C4SLs, the S4ULs are all based on Health Criteria that represent minimal or tolerable levels of risks to health as described in the Environment Agency's SR2 guidance, ensuring that the resulting assessment criteria are 'suitable for use' under planning.

Updated SGV's for inorganic contaminants hazardous to human health were published by the Environment Agency in 2009: arsenic [9], cadmium [10], nickel [11], mercury [12], selenium [13], and phenol [14]. Updated SGV's are also available for a number of BTEX (organic) contaminants; benzene [15], ethylbenzene [16], toluene [17], xylene [18] and dioxins, furans and dioxin-like PCB's[19].

Additional toxicological data [20-29] and supplementary information [30-39] has also been published by the Environment Agency in 2009 for these contaminants and should be used in conjunction with the SGV documents.

The site specific CLEA model v1.07 has also been utilised by David R. Murray & Associates to derive guideline assessment values for a range of polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH).

Updated SGV's were not published for chromium[40], lead[41], and cyanide[42]. The toxicological (TOX) reports [43-55] have been referred to and CLEA model v1.07 has been used to calculate an assessment concentration for these contaminants with the exception of lead.

DEFRA has funded further research with one of the contaminants to be assessed being lead. The aim of the research was to derive Category 4 screening values for a variety of different land uses. Defra classify Category 4 as posing no risk or that the level of risk posed is low, although it is acknowledged that the values produced would be strongly precautionary.

Review of the data published in the DEFRA document (SP1010 Claire 2014) confirms provisional C4SL's for lead in the residential development with homegrown produce category of between 82mg/kg and 210mg/kg depending upon LLTC's (low level of toxicological concern) values for lead intake leading to various blood lead concentrations in receptors.

For the purposes of the current assessment 200mg/kg which has been derived on the basis of a LLTC of 5ug.d/l (blood lead concentration) for children for all exposure to lead. Research in the USA has subsequently led to the adoption of a blood lead level threshold to 5ug.d/l for children.

The mean daily intake from non-soil sources has also been allowed for in the derivation of the 200mg/kg assessment level.

SP1010 also confirms that 200mg/kg is the limit for lead in compost for general uses *PAS 100:2011 (BSI, 2011).* There therefore seems to be little value in remediating to concentrations lower than this where there is the potential that the homeowner could buy materials for use in their garden area with lead levels of up to 200mg/kg lead content. In addition, one of the key considerations as identified in the document is the principal of as low as is reasonably practicable (ALARP). The utilisation of an assessment concentration which is so low that it approaches soil background levels is not considered to be practicable or desirable. This could result in recommendations to remediate a greenfield site by the importation of soils from other greenfield sites.

To assess the potential phytotoxic risks associated with soil contaminants, documentation relating to the use of sewage sludge on agricultural land has been used in the absence of suitable phytotoxic criteria.

There is currently no authoritative UK guidance on generic assessment criteria for the phytotoxic potential of contaminated land, however, guidelines do exist governing phytotoxicity with respect to agricultural land. The 1996 MAFF document: "Code of Practice For Agricultural Use of Sewage Sludge" [60] sets out guidelines on the maximum permissible concentrations of potentially toxic elements.

Although the criteria are intended for use in agricultural settings and deal specifically with the use of sewage sludge as a fertilizer, David R. Murray & Associates have adopted the guidelines as generic assessment criteria in the first instance as they represent an authoritative, peer reviewed position which has also been adopted by several other governmental agencies for such purposes.

The risks posed by on site contamination to proposed structures are assessed with reference to documents published by the Building Research Establishment (BRE) and the British Standards Institute.

The BRE publication on "Special Digest 1: Concrete in Aggressive Ground" (2005) [5] details the compositional specifications required for concrete when laid in ground which poses a potential risk of acid or sulphate attack. These specifications are in line with those outlaid by the BSI document BS EN 206-1/BS 8500 [61] and have thus been adopted by David R. Murray & Associates as generic assessment criteria.

At the LEVEL 1 assessment stage where contaminant levels are lower than the generic criteria or the laboratory limits of detection, no further assessment and/or remediation is deemed to be necessary and identified receptors are not considered to be at risk from the levels of soil contamination identified. For this approach to be appropriate the laboratory limits of detection need to be set at a suitable level.

Depending upon the concentrations measured, where synthetic organic substances (such as TPH) are identified in soils more detailed assessment is necessary and LEVEL 2 risk assessment methodologies are utilised. Where contaminants are lower than the limit of detection no further assessment is considered to be necessary.

## 9.2 Level 1 Soils Assessment

CLEA v1.07 allows for an assessment based on homegrown (private gardens) or non-homegrown (communal landscaping) produce, and a variety of two-storey residential development.

The proposed end use for the site is residential development with private garden areas. Utilising available guidance, Soil Guideline Values (SGV's) appropriate to the development proposed have been utilised in the risk assessment process.

The results of analysis on the samples collected from within the site boundary are provided in Appendix F and are summarised in Table 4.

**Table 4: Summary of contaminant results from site investigation**

| Contaminant | Contaminant Type | Contaminant Range (mg/kg) | Residential SGV - mg/kg | Source | Number of exceedances (tests) |
|---|---|---|---|---|---|
| Arsenic | Health Related | 8-52 | 32 | CLEA | **1** (13) |
| Cadmium | Health Related | <1 | 10 | CLEA | 0 (13) |
| Chromium | Health Related | 17-45 | 3000 | CLEA | 0 (13) |
| Lead | Health Related | 8-410 | 200 | SP1010 | **3** (13) |
| Mercury | Health Related | <1 | 170 | CLEA | 0 (13) |
| Nickel | Health Related | 19-60 | 130 | CLEA | 0 (13) |
| Selenium | Health Related | <2 | 350 | CLEA | 0 (13) |
| Boron | Phytotoxic | <1 | 3 | MAFF | 0 (13) |
| Copper | Phytotoxic | 6-44 | 135 | MAFF | 0 (13) |
| Zinc | Phytotoxic | 18-400 | 3750 | CLEA | 0 (13) |
| Phenols | Health Related | <1 | 308 | CLEA | 0 (13) |
| Cyanide | Health Related | <1-2 | 33 | CLEA | 0 (13) |
| Soluble Sulphate (2:1) | - | <0.01-0.095g/l | *500 (mg/l)* | BRE | 0 (13) |
| Asbestos - Screen | Health Related | Not detected | Presence / Absence | HSE | 0 (3) |

The results of analysis confirm that concentrations of inorganic contaminants in the samples analysed were for the most part well below the assessment criteria with only a few exceptions where slightly elevated levels were detected.

The soil sample BH3 1.00m (52mg/kg) therefore contained concentrations of arsenic in excess of the 32mg/kg guideline level.

The soil samples BH3 0.50m (270mg/kg), HP4 0.20m (410mg/kg), HP5 0.20m, and HP6 0.40m (260mg/kg) also contained concentrations of lead slightly in excess of the 200mg/kg guideline level.

Organic matter analysis undertaken on samples, showed that the percentages of natural organic matter were between 0.3% and 3.4%. Samples of natural soils generally contained the lowest concentrations as would be expected.

The results of asbestos analysis confirmed that this material was not present in any of the samples analysed. As previously noted however a number of the buildings on the site incorporate asbestos cement roofing materials with some of these in a poor state of repair. The roofing materials should be removed to licenced landfill prior to any demolition or refurbishment with a hand pick undertaken by specialist contractors to remove the pieces of asbestos currently present on the ground.

Visual inspection did not indicate the presence of hydrocarbon materials or other potentially deleterious materials such as ash and tar in the made the ground likely to contain elevated levels of organic contamination.

Hydrocarbon concentrations in the samples analysed were very low with total values all less then 12mg/kg. Concentrations in the lighter hydrocarbon bandings were often <1mg/kg and did not exceed single figures for the mid to heavier range. The banded TPH concentrations detected and are in keeping with the field observations in respect of the absence of hydrocarbons and are not considered to be significant in terms of the development proposed. Concentrations of these materials are lower than the site specific assessment levels, Appendix G.

The soils tested did not contain detectable concentrations of pesticides and as such these contaminants are not considered to be significant.

The vast majority of soils on the site have been confirmed to be contaminant free, although low level heavy metal contamination in some samples of made ground was noted and as such a Level 2 Soils Assessment is considered to be necessary for the site area.

## 9.3 Level 2 Soils Assessment

Slightly elevated soil contaminants levels have been identified in shallow soils locally and guidance provided by DEFRA (CLR11)[1] indicates that further assessment of remediation should be considered in order to address the concentrations present. Remediation can take the form of removal from site, or capping with suitable clean and inert materials. The capping layer thickness can be calculated using the BRE methodology as laid out in the Building Research Establishment document "Cover Systems for Land Regeneration" [63].

Private garden areas are proposed and given the slightly elevated levels of heavy metals (lead and arsenic), made ground would require to be capped with clean and inert materials. As per BRE guidelines it is considered that a mix depth of 600mm would apply to soils in these areas following placement. The BRE documentation takes account of contaminant concentrations in the capping materials (topsoil and subsoil) and the underlying soils when calculating a suitable capping layer thickness.

Therefore contaminant concentrations in the imported soil cover are crucial to the calculation of capping layer thickness.

The capping layer calculation assumes that contaminant levels in the imported capping materials are 75% lower than the relevant assessment levels.

Utilising the BRE methodology, Appendix H, a soil capping layer of minimum 350mm in thickness would be necessary to address the concentrations of lead and arsenic. Given the general absence of suitable topsoil across much of the site at the present time it would have been necessary to import a growing medium in any event for use in garden areas.

Soils generated from elsewhere within the site boundary could be used as capping materials although these would require to be tested prior to use with one sample per 250m$^3$ analysed for a standard suite of contaminant parameters.

In the event that soils are imported they too will require to be tested prior to their use to confirm their suitability. If, as a result of development activity, excess soils are generated that cannot be accommodated on site they will require to be removed to landfill and suitable testing should be performed in line with current best practice and regulations.

Vigilance should be maintained during the site development for the presence of potentially deleterious materials and made ground not identified to date. If unexpected areas of contamination or odours are encountered DRM should be contacted to inspect soils and undertake testing as necessary.

Once the levels are finalised it will be necessary to prepare a remediation strategy for issue to the local authority/NHBC etc. Following completion of soil remedial works (placement of a suitable capping layer), a verification report would need to be prepared.

## 9.4 Assessment of Leachate and Water Analysis

Leachate analysis was carried out on six of the soil samples, some of which contained elevated contaminant levels, Appendix F, to provide an indication as to the leachability and, hence, potential bioavailablility of the concentrations of inorganic and organic contaminants present.

Given the general absence of significantly elevated contaminant concentrations in soils the presence of elevated contaminant levels in water beneath the site was not anticipated. Water samples were however collected from two of the boreholes, BH1 and BH4. Water levels within the boreholes were generally low which meant limited volumes were collected and no water could be collected from BH5.

As previously discussed, shallow water at the site would not be considered a water body given its perched nature. Although granular soils are present they are often silty and clayey and contain clay horizons which would could retard water flow. As such, a relatively limited volume of water would likely be present in the sands and gravels at this site as such it is considered to be unlikely that the superficial soils at shallow depth beneath this site and the surrounding area would ever be considered as a viable source of water. Superficial soils are therefore likely to be a non-aquifer.

Therefore any perched water beneath the site would not be classed as a resource in its own right, but instead would be the potential pathway to the receptor. The nearest identified receptor to the site is the Kidlaw Burn located around 160m to the north-west.

Notwithstanding this, as part of the assessment, groundwater contaminant levels have been compared against commonly utilised water quality criteria.

SEPA guidance endorses the practice of utilising generic criteria designed to protect surface waters (Environmental Quality Standards - EQS) and drinking water supplies (either from UK, EC or WHO agencies) for generic assessment criteria as these will also be protective of groundwater and surface waters in the context of contaminated land. The guidance also assesses groundwater as a future resource for drinking supplies.

The results of the water analysis for the main inorganic contaminants tested, Appendix F, have been summarised in Table 5, where they have been compared in the first instance against SEPA EQS values.

**Table 5: Summary of geochemical results for water and leachate samples**

| Contaminant | Leachate Analysis - (µg/l) | Water Analysis - Boreholes (µg/l) | Reference Concentration (µg/l) | Reference Concentration Source | Exceedances in water samples |
|---|---|---|---|---|---|
| Arsenic | <5 – 8 | 8 – 16 | 50 | EQS | 0 (2) |
| Cadmium* | <5 | <5 | 0.25 | EQS | 0 (2) |
| Chromium | <10 – 27 | <10 – 12 | 4.7 | EQS | 0 (2) |
| Lead | <25 | <25 | 7.2 | EQS | 0 (2) |
| Mercury | <1 | <1 | 0.05 | EQS | 0 (2) |
| Selenium | <5 | <5 | 10 | Drinking water | 0 (2) |
| Nickel | <10 – 15 | 14 – 64 | 20 | EQS | 0 (2) |
| Copper* | <20 | <20 | 28 | EQS | 0 (2) |
| Zinc* | <10 – 98 | 26 - 34 | 125 | EQS | 0 (2) |
| Hardness | 10000-43000 | 49-60 | N/A | N/A | N/A |

* Assessment levels based upon water hardness values.

The results of analysis, as summarised above, confirm that at the time the analysis was undertaken laboratory limits of detection were lower than is now the case. In addition assessment criteria have become more stringent than was previously the case. Notwithstanding this, the contaminant concentrations particularly within the water samples are not significantly elevated even above the now more stringent criteria.

The marginally elevated values detected ten years ago (for chromium and nickel) would be expected to dissipate and disperse relatively quickly within the wider water environment in the area with a two-fold dilution adequate to reduce concentrations below assessment criteria. Values within the sample from BH4 on the northern edge of the site were generally lower than those in the sample collected from BH1 which would tend to confirm that a degree of dilution and dispersion in the direction of anticipated flow was occurring at the time.

The results of more detailed organic analysis for VOC's and SVOC's, which contain PAH's and hydrocarbons as part of the suite, undertaken on the water samples analysed ate provided in Appendix F.

All concentrations are below the limit of detection utilised by the laboratory at the time. Limits of detection are now lower although the results of the testing undertaken ten years ago would still tend to confirm that hydrocarbons and other organic contaminants are not present within the water beneath the site. This is in keeping with the observations made in the trial pits and boreholes and from chemical analysis on soils in respect of the absence these contaminants.

Overall the potential risk to groundwater and off-site receptors (principally the Kidlaw Burn) presented by the levels of inorganic and organic contaminants in water on the site are not considered to be significant.

## 9.5 Ground Gas Risk Assessment

Gas monitoring was undertaken in the most of the boreholes installed on the site on six occasions in 2008.

The results of gas monitoring show that methane gas was intermittently detected in all three boreholes, although only very low concentrations between 0.1% and 0.2% by volume in air v/v were detected in BH4 and BH5 on one occasion each over the course of the monitoring period, Appendix J.

Due to the presence of standing water only four gas readings were possible in BH1, however methane gas readings in this installation fluctuated between 0.1% and 1.6%v/v. The source of the gas in this location was not immediately obvious given the lack of made ground, however, BH1 was located a short distance to the north of the silage mound and groundwater levels within this installation were very shallow.

This borehole was submerged during the first two groundwater monitoring visits. It is therefore considered that organic leachate emanating from the silage mound was locally impacting upon groundwater in this area and generating methane gas within BH1.

Carbon dioxide concentrations measured over the course of the investigation were low with a maximum of 2.5% recorded. These values are therefore below the 5% CIRIA threshold for carbon dioxide.

Hydrogen sulphide and carbon monoxide concentrations were not recorded above the limit of detection.

The concentrations of ground gas measured in boreholes on the site are summarised in Table 6 and Appendix J.

**Table 6: Gas monitoring summary**

| Borehole | $CH_4$ Range Detected (%v/v) | $CO_2$ Range Detected (%v/v) | Number of exceedances of 5% $CO_2$ threshold. (Tests) | CO Range Detected (ppm) | GSV Max value/100 x flow rate (l/hr) |
|---|---|---|---|---|---|
| **BH01** | 0.1 – 1.6 | 0.2 – 1.0 | 0 (4) | 0 | 0.0010 ($CO_2$) |
| **BH04** | 0.0 – 0.2 | 0.3 – 2.5 | 0 (6) | 0 | 0.0025 ($CO_2$) |
| **BH05** | 0.0 – 0.1 | 0.0 – 0.9 | 0 (6) | 0 | 0.0009 ($CO_2$) |

Oxygen concentrations were generally recorded at anticipated background levels in each of the boreholes ranging between 10.5% and 20.5% v/v. Slightly depleted oxygen concentrations were observed in some locations where carbon dioxide was detected.

Best practice guidance published by CIRIA (C665, 2007) [68] and the NHBC (2007) [69] confirms the importance of flow rates in establishing the potential risk posed by soil gases. Without a positive flow rate, gases would not be expected to enter buildings as there would be no driving force to facilitate such migration. This methodology complies with BS8485:2015 [70].

The approach adopted is to produce a Gas Screening Value (GSV), by dividing the maximum measured gas concentration across the site by 100, then multiplying the result by the maximum flow rate measured. Very low flow rates were detected and, even where no flow was recorded, a minimum value of 0.1l/hr was utilised for the purposes of the calculation. The calculated GSV's are shown in Table 6.

This site falls into the CIRIA category 'Characteristic Situation 1', and on the NHBC's traffic light assessment would be classified as green, which are based on GSV's of <0.07l/hr and <0.78l/hr, respectively, for methane and carbon dioxide. These categories do not require the installation of gas protection measures.

As confirmed above, methane concentrations in BH1 were elevated above 1.0% in BH1 on one occasion, although positive flow rates were not detected. Where methane levels exceed 1.0% CIRIA guidance indicates that consideration should be given to increasing the gassing characterisation to CS2 in the affected area.

Methane gas was only present above 1% on one occasion however, and it is considered that the source of the gassing activity was run-off from the silage mound located to the south of the BH1 at the time the monitoring was undertaken.

The silage mound is no longer present and as such the source of the slightly elevated gas levels is no longer present. On this basis and the low gas levels measured during the remaining monitoring programme both within BH1 and more widely it is considered that gas protection measures are not required beneath built development at this site.

It is however noted that the site falls within a wider area which may be at risk from radon gas. Any new housing development including the refurbished units will therefore require the installation of Stage 1 radon protective measures in order to prevent the potential accumulation of radon gas. These measures require the use of a radon protective membrane of a minimum 1200 gauge. Reference to BRE 376 confirms that no additional ventilation over and above standard solum ventilation is necessary.

It is recommended that a site specific radon report be obtained in order to confirm whether the site itself is at risk from radon gas and whether radon barriers would indeed be necessary.

## 9.3 Water Pipe Assessment

The UKWIR 2011 publication, 'Guidance for the selection of water supply pipes to be used in Brownfield sites' [62] is utilised to assess the most suitable water pipe materials by Scottish Water.

The future development site would however be fed from the existing private supply and as such no new adopted water pipe infrastructure would be laid. Notwithstanding this organic contaminant levels in soils are low and pipework is expected to be laid within the natural soils.

On the basis of the foregoing standard MDPE and HDPE pipework is considered to be appropriate.

## 10.0 REVISED CONCEPTUAL SITE MODEL

The intrusive investigation has confirmed that soils on the site are largely uncontaminated with respect to criteria for residential development sites with private garden areas.

Slightly elevated levels of lead and arsenic are however locally associated with made ground. Calculations utilising the BRE methodology confirm that a 350mm growing medium should therefore be placed within private garden areas on the site and confirmed by post placement hand pitting. Given the general absence of suitable topsoil across much of the site at the present time it would have been necessary to import a growing medium in any event for use in garden areas.

Soils generated from elsewhere within the site boundary could be used as capping materials although these would require to be tested prior to use with one sample per 250m$^3$ analysed for a standard suite of contaminant parameters.

In the event that soils are imported they too will require to be tested prior to their use to confirm their suitability. If, as a result of development activity, excess soils are generated that cannot be accommodated on site they will require to be removed to landfill and suitable testing should be performed in line with current best practice and regulations.

Asbestos is associated with some of the buildings at this site with some asbestos cement roofs in a poor state of repair. The roofing materials should be removed to licenced landfill prior to any demolition or refurbishment with a hand pick undertaken by specialist contractors to remove the pieces of asbestos currently present on the ground.

The new development would be served from the existing private supply. However, organic contaminant levels in soils are low and new pipework would be expected to be laid within the natural soils. On this basis standard MDPE and HDPE pipework is considered to be appropriate.

Contractors and utility personnel working on the site should observe health and safety measures normally applied on development sites and should wear suitable protective clothing (gloves, boots and overalls etc.). Construction personnel should also observe good standards of personal hygiene and should ensure that dust generation during development and earthworks is kept to a minimum.

The investigation confirmed that soil gas levels are not significant across the site area and gas protection measures are not considered to be necessary.

On-line information has however indicated that the site is situated in a wider area where there is a 3 to 5% probability of homes being above the radon action level and therefore Stage 1 protective measures (installation of a minimum 1200 gauge membrane) for radon are necessary for the construction of new homes. In the first instance it is recommended that a site specific radon report be obtained to confirm if the site itself is likely to be affected.

If the report confirms that the site is potentially affected, radon barriers should be fitted below all new and refurbished development in accordance with the manufacturer's specification, with all laps, joints sealed and service entry points sealed using proprietary systems. The installation of the barriers would require to be inspected by the engineer prior to pouring of the concrete slab with photographs taken as necessary.

The Conceptual Site model has been amended as shown on Table 7 highlighting potential risks associated with the site both pre and post remedial measures. Following the remediation no viable pathway would exist between the identified sources of contamination and receptors and as such the source-pathway-receptor linkages are considered to have been adequately addressed by the remediation measures recommended.

**Table 7: Updated Conceptual Site Model**

| Identified Contaminants | Pathways | Receptor | Perceived Risk | Post Remediation Risk |
|---|---|---|---|---|
| Locally elevated concentrations of heavy metals in made ground.<br><br>Presence of asbestos in some buildings and on the ground.<br><br>Potential presence of radon gas | Dermal contact and ingestion (1)<br><br>Dermal contact (2)<br><br>Inhalation of dust/fibres/vapours (indoors and outdoors) (3)<br><br>Migration of gas through service runs and subsequent accumulation of gas in buildings (4)<br><br>Ingestion of site grown produce (5) | Future Site Residents | 1,2,3,4, 5 (low) | 1,2,3,4,5 (none) |
| | | Construction and Maintenance Workers | 1,2,3 (low) | 1,2,3 (none) |
| | | Adjacent Land Users | 3 (low) | 3 (none) |
| | | Flora and Fauna on the site and surrounding area | 1,2,3 (low) | 1,2,3 (none) |

## 11.0 CONCLUSIONS

Planning permission is being sought to redevelop a small steading site for residential development at Longnewton, Gifford.

The proposed development would see the refurbishment and partial refurbishment of the some of the existing stone built barns with five new build properties being erected. All units would have private gardens and associated driveways and drainage infrastructure.

More detailed recommendations on foundation design and construction, mineral stability issues and environmental risks etc. are provided in the body of the report and these conclusions should be read in conjunction with the foregoing sections.

Based upon desk study review the mineral stability of the site is considered to be satisfactory.

The investigation has confirmed that made ground is generally only present to shallow depth with a maximum thickness of 1.20m below existing levels. Natural soils underlying the topsoil and made ground consisted of loose to medium dense to dense silty sands and gravels with cobbles, although in the hand pits shallow clays were initially indicated to be of soft to firm consistency.

Based upon visual inspection, and the results of geotechnical testing, it is considered that the natural soils at depths of the order of 1.0m below existing ground levels should provide the bearing pressures necessary to support the development proposed. Therefore, where finished site levels are equal to or lower than those currently present it should be possible to support two storey development on standard concrete strip footings assuming minimum allowable bearing capacity of 75kN/m$^2$.

The existing buildings within the site which are due to be retained have been founded within the natural soils for over 100 years and are of stone construction. The conversion of these buildings to residential use is unlikely to place any additional loadings on the foundations and any induced further settlement is considered to be unlikely.

We would however recommend that a structural survey of the buildings to be refurbished be undertaken at an early stage of site development works.

Where extensions are to be added to the retained buildings care should be taken ensure that the original foundations are not undermined as a result of the development activity with underpinning undertaken where necessary.

Deep underbuilding in brick/blockwork would be adequate for any proposed houses in areas where site levels require to be raised.

Test pitting on a plot by plot basis should be undertaken immediately prior to construction to confirm the nature of strata at formation depths within the site boundary.

As is general good practice during construction, the formation should be protected against surface or rainwater by placing a blinding concrete or the foundation concrete itself as soon as the formation has been prepared.

Whilst significant water ingress is unlikely some allowance should be made for dewatering as is standard good practice, in deeper drainage excavations. Water may also pond during periods of inclement weather.

Excavations should be suitably supported along their full length particularly in the presence of water and granular soils, to guard against the potential for collapse. Some allowance for hard dig may need to be made in deeper drainage excavations and an assessment made once drainage designs are competed.

No special precautions are required with respect to protecting buried concrete structures from sulphate or acid attack.

Arisings generated during development should be suitable for use as general fill, they will however require to be suitably sealed and protected from the elements where they are not placed immediately after generation.

At the present time it is considered to be unlikely that any new adopted roads infrastructure would be utilised at this site. Notwithstanding this, it is considered that full capping layers should be allowed for all access roads formed within the site given the presence of made ground in some areas.

Slightly elevated levels of lead and arsenic are locally associated with made ground. Calculations utilising the BRE methodology confirm that a 350mm growing medium should therefore be placed within private garden areas on the site.

Given the general absence of suitable topsoil across much of the site at the present time it would have been necessary to import a growing medium in any event for use in garden areas. Testing of soils utilised within garden areas whether site won or imported would be required along with confirmation on soil thicknesses post placement.

Any excavated soils which cannot be re-used the within the site boundary will require to be removed and best practice should be observed during disposal off-site of these materials.

Asbestos is associated with some of the buildings at this site with some asbestos cement roofs in a poor state of repair. The roofing materials should be removed to licenced landfill prior to any demolition or refurbishment with a hand pick undertaken by specialist contractors to remove the pieces of asbestos currently present on the ground.

The new development would be served from the existing private supply. However, organic contaminant levels in soils are low and new pipework would be expected to be laid within the natural soils. On this basis standard MDPE and HDPE pipework is considered to be appropriate.

The investigation confirmed that soil gas levels are not significant across the site area and gas protection measures are not considered to be necessary.

On-line information has however indicated that the site is situated in a wider area where there is a 3 to 5% probability of homes being above the radon action level and therefore Stage 1 protective measures (installation of a minimum 1200 gauge membrane) for radon are necessary for the construction of new homes. In the first instance it is recommended that a site specific radon report be obtained to confirm if the site itself is likely to be affected.

If the report confirms that the site is potentially affected, radon barriers should be fitted below all new and refurbished development in accordance with the manufacturer's specification, with all laps, joints sealed and service entry points sealed using proprietary systems. The installation of the barriers would require to be inspected by the engineer prior to pouring of the concrete slab with photographs taken as necessary.

Although soil contaminant levels are not significant, standard precautions, such as the wearing of gloves and overalls etc., when working on development sites are required by construction personnel. Soils should be damped down as necessary during earthworks and development in order to reduce any dust generation, as is good practice.

Should ground conditions at variance with those identified as a result of review of historical archive information and intrusive investigations, be encountered during site development works, David R. Murray and Associates should be contacted to visit the site in order to assess the significance of such variations. Additional intrusive investigation and sampling may be necessary if variations (such as the presence of more extensive made ground or potential sources of contamination) are considered to be significant.

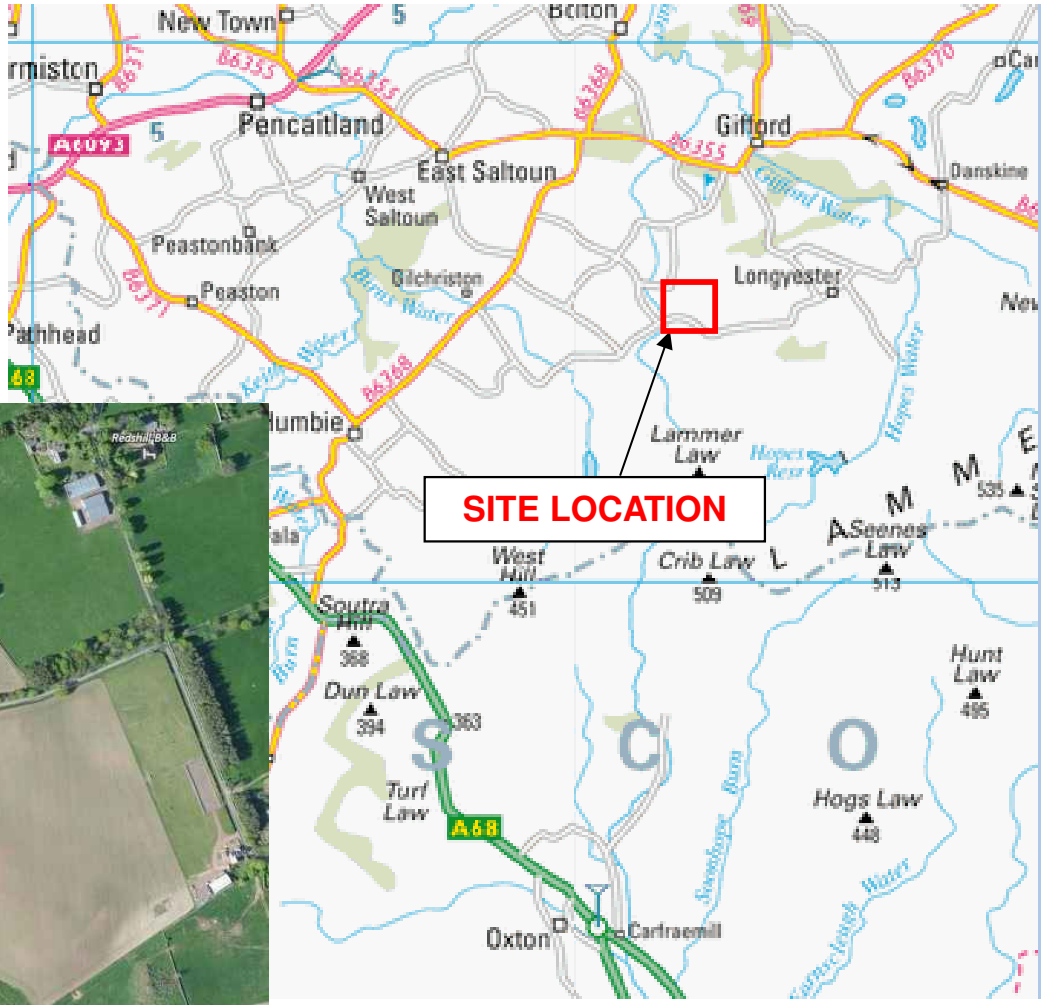
| Author: R. McIntosh | Checked: N. Henderson | Approved: N. Henderson |
|---|---|---|

**150 St John's Road**
**Edinburgh , EH12 8AY**
**Tel 0131 334 0765**
**Fax 0131 316 4540**
**E-Mail drme@davidrmurray.co.uk**

10 Eyre Place
Edinburgh , EH3 5EP
Tel 0131 556 5155
Fax 0131 556 9147
E-Mail drmc@davidrmurray.co.uk

20 Viewfield Terrace
Dunfermline , KY12 7HZ
Tel 01383 726075
Fax 01383 730605
E-Mail drmd@davidrmurray.co.uk

## Appendix A: Site Location Plan



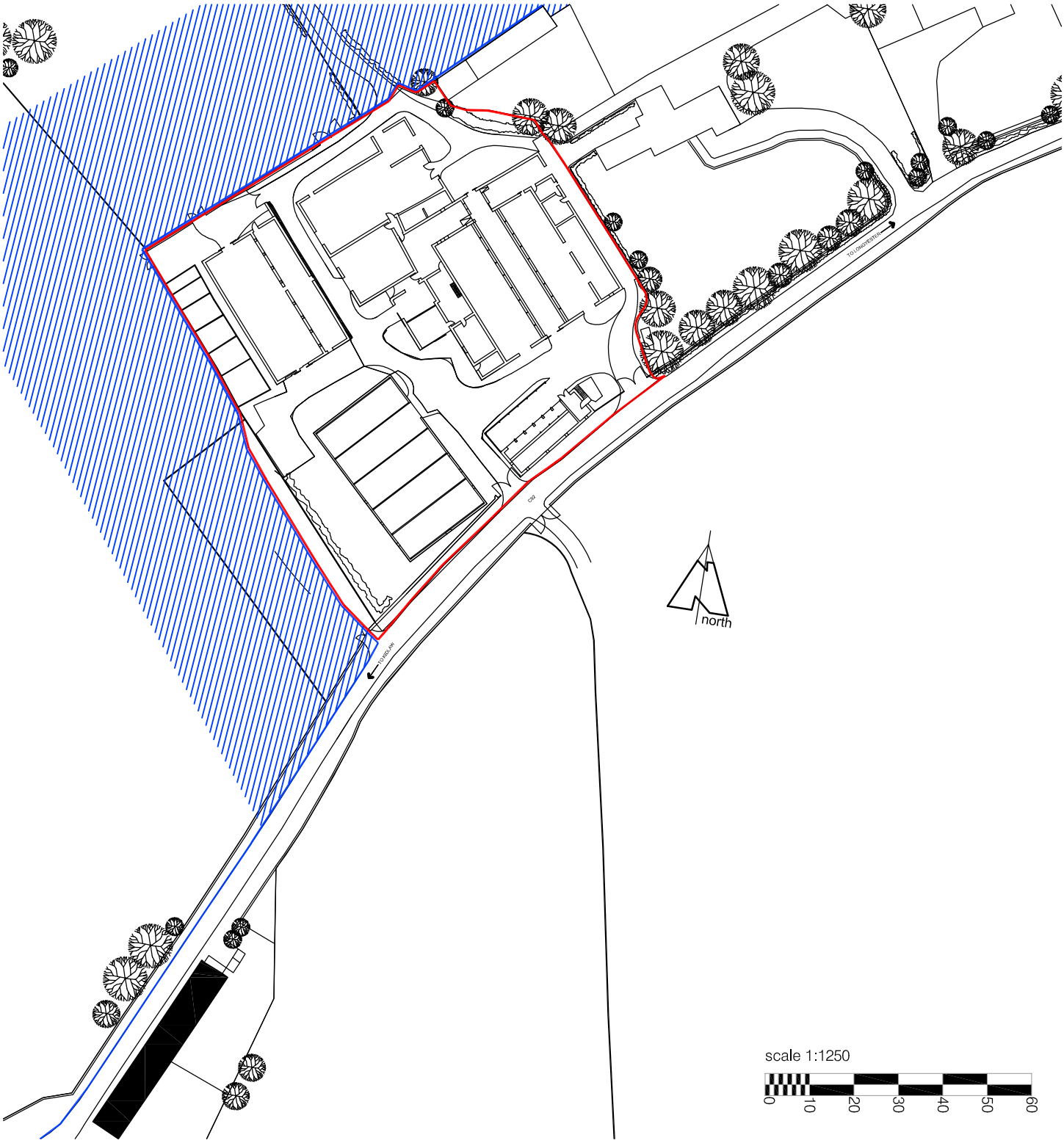

**SITE LOCATION PLAN**

**LONGNEWTON, GIFFORD**

**CONTRACT E11602**

**DAVID R MURRAY & ASSOCIATES**
**CONSULTING ENGINEERS**

DRM Consulting Engineers




N.B. all drawings based on survey drawings supplied by external source

# STUART DAVIDSON | ARCHITECTURE

CLIENT
Mr + Mrs Whiteford

PROJECT
Proposed Housing Development at
Longnewton Farm
Nr Gifford

TITLE
Location Plan

DATE: March 2018 SCALE: as shown DWG NO: P528-PL-LOC REVISION A PLOTTED SCALE: a4

Design Studio, 32 High Street, Selkirk, TD7 4DD t/f: 01750 21792
e: info@stuartdavidsonarchitecture.co. uk w:www.stuartdavidson architecture.co.uk


proposed site plan
scale 1:200

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

denotes proposed post + wire fence 900mm high as per "proposed fence detail" on drawing number P528-PL-009

N.B. all drawings based on survey drawings supplied by external source


STUART DAVIDSON | ARCHITECTURE


CLIENT
Mr + Mrs Whiteford
PROJECT
Proposed Housing Development at Longnewton Farm
Nr Gifford
TITLE
Proposed Site plan


DATE: March 2018 SCALE: as shown DWG NO: P528-PL-001 REVISION D PLOTTED SCALE: a1


Design Studio, 32 High Street, Selkirk, TD7 4DD t/f: 01750 21792
e: info@stuartdavidsonarchitecture.co. uk w:www.stuartdavidson architecture.co.uk

## Appendix B: Landmark Envirocheck Report

# Envirocheck® Report:

## Datasheet

### Order Details:

**Order Number:**
23871877_1_1

**Customer Reference:**
E8538

**National Grid Reference:**
351530, 664780

**Slice:**
A

**Site Area (Ha):**
0.81

**Search Buffer (m):**
1000

### Site Details:

Longnewton Farmhouse
Haddington
EH41 4JW

### Client Details:

Mr N Henderson
David R Murray & Associates
150 St John's Road
Edinburgh
EH12 8AY

# Contents



**Introduction**

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.



**Report Version v31.0**

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# Summary

| Data Type | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m (*up to 2000m) |
|---|---|---|---|---|---|
| **Agency & Hydrological** | | | | | |
| Contaminated Land Register Entries and Notices | | | | | |
| Discharge Consents | pg 1 | | 3 | | 7 |
| Enforcement and Prohibition Notices | | | | | |
| Integrated Pollution Controls | | | | | |
| Integrated Pollution Prevention And Control | | | | | |
| Local Authority Integrated Pollution Prevention And Control | | | | | |
| Local Authority Pollution Prevention and Controls | | | | | |
| Local Authority Pollution Prevention and Control Enforcements | | | | | |
| Nearest Surface Water Feature | pg 3 | | Yes | | |
| Pollution Incidents to Controlled Waters | | | | | |
| Prosecutions Relating to Authorised Processes | | | | | |
| Prosecutions Relating to Controlled Waters | | | | | |
| Registered Radioactive Substances | | | | | |
| River Quality | | | | | |
| River Quality Biology Sampling Points | | | | | |
| River Quality Chemistry Sampling Points | | | | | |
| Substantiated Pollution Incident Register | | | | | |
| Water Abstractions | pg 3 | | | | 1 (*4) |
| Water Industry Act Referrals | | | | | |
| Groundwater Vulnerability | pg 4 | Yes | n/a | n/a | n/a |
| Source Protection Zones | | | | | |
| River Flood Data (Scotland) | | | | n/a | n/a |
| **Waste** | | | | | |
| BGS Recorded Landfill Sites | | | | | |
| Integrated Pollution Control Registered Waste Sites | | | | | |
| Licensed Waste Management Facilities (Landfill Boundaries) | | | | | |
| Licensed Waste Management Facilities (Locations) | | | | | |
| Local Authority Recorded Landfill Sites | | | | | |
| Registered Landfill Sites | | | | | |
| Registered Waste Transfer Sites | | | | | |
| Registered Waste Treatment or Disposal Sites | | | | | |
| **Hazardous Substances** | | | | | |
| Control of Major Accident Hazards Sites (COMAH) | | | | | |
| Explosive Sites | | | | | |
| Notification of Installations Handling Hazardous Substances (NIHHS) | | | | | |
| Planning Hazardous Substance Consents | | | | | |
| Planning Hazardous Substance Enforcements | | | | | |

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# Summary

| Data Type | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m (*up to 2000m) |
|---|---|---|---|---|---|
| **Geological** | | | | | |
| BGS Recorded Mineral Sites | | | | | |
| BGS 1:625,000 Solid Geology | pg 6 | Yes | n/a | n/a | n/a |
| Brine Compensation Areas | | | n/a | n/a | n/a |
| Coal Mining Affected Areas | | | n/a | n/a | n/a |
| Mining Instability | | | n/a | n/a | n/a |
| Natural and Mining Cavities | | | | | |
| Potential for Collapsible Ground Stability Hazards | | | | n/a | n/a |
| Potential for Compressible Ground Stability Hazards | | | Yes | n/a | n/a |
| Potential for Ground Dissolution Stability Hazards | | | | n/a | n/a |
| Potential for Landslide Ground Stability Hazards | pg 6 | Yes | Yes | n/a | n/a |
| Potential for Running Sand Ground Stability Hazards | | Yes | Yes | n/a | n/a |
| Potential for Shrinking or Swelling Clay Ground Stability Hazards | pg 6 | Yes | | n/a | n/a |
| Radon Potential - Radon Affected Areas | | | n/a | n/a | n/a |
| Radon Potential - Radon Protection Measures | | | n/a | n/a | n/a |
| Shallow Mining Hazards | pg 7 | Yes | | n/a | n/a |
| **Industrial Land Use** | | | | | |
| Contemporary Trade Directory Entries | | | | | |
| Fuel Station Entries | | | | | |
| **Sensitive Land Use** | | | | | |
| Areas of Adopted Green Belt | | | | | |
| Areas of Unadopted Green Belt | | | | | |
| Environmentally Sensitive Areas | | | | | |
| Forest Parks | | | | | |
| Local Nature Reserves | | | | | |
| Marine Nature Reserves | | | | | |
| National Nature Reserves | | | | | |
| National Parks | | | | | |
| National Scenic Areas | | | | | |
| Nitrate Sensitive Areas | | | | | |
| Nitrate Vulnerable Zones | pg 8 | 1 | | | |
| Ramsar Sites | | | | | |
| Sites of Special Scientific Interest | | | | | |
| Special Areas of Conservation | | | | | |
| Special Protection Areas | | | | | |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| 1 | **Discharge Consents**<br>Operator: Whiteford, W H<br>Property Type: Not Supplied<br>Location: East Of Longnewton House Gifford<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/5693<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 30th January 1990<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A13NE (NE) | 79 | 1 | 351620 664880 |
| 2 | **Discharge Consents**<br>Operator: Whiteford, William J<br>Property Type: Not Supplied<br>Location: Longnewton Gifford East Lothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/529<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 14th July 1967<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A13SW (W) | 198 | 1 | 351300 664700 |
| 3 | **Discharge Consents**<br>Operator: Whiteford, William J<br>Property Type: Not Supplied<br>Location: Longnewton Gifford East Lothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/528<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 14th July 1967<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A13NW (NW) | 206 | 1 | 351401 665001 |
| 4 | **Discharge Consents**<br>Operator: British Rail<br>Property Type: Not Supplied<br>Location: Newpark Station Midlothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/340<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 14th July 1967<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A12SE (W) | 512 | 1 | 351000 664600 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| 5 | **Discharge Consents**<br>Operator: Traquair, William A<br>Property Type: Not Supplied<br>Location: Kidlaw Gifford East Lothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/579<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 14th July 1967<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A7NE (SW) | 594 | 1 | 351100 664300 |
| 6 | **Discharge Consents**<br>Operator: Rogan, Rev Dr R H<br>Property Type: Not Supplied<br>Location: Mid Latch Gifford East Lothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/3380<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 21st February 1978<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A14SE (E) | 718 | 1 | 352300 664700 |
| 6 | **Discharge Consents**<br>Operator: Rogan, William H<br>Property Type: Not Supplied<br>Location: West Latch<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/1465<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 28th October 1974<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A14SE (E) | 719 | 1 | 352300 664695 |
| 7 | **Discharge Consents**<br>Operator: Mcintosh Reid, A K<br>Property Type: Not Supplied<br>Location: Newtonhall Farm Gifford<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/1090<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 27th July 1970<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A19NW (NE) | 753 | 1 | 351900 665500 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| 8 | **Discharge Consents**<br>Operator: Scott, P R<br>Property Type: Not Supplied<br>Location: West Catch Farm Near Gifford East Lothian<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Not Supplied<br>Reference: Wpc/E/4076<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 15th February 1983<br>Revocation Date: Not Supplied<br>Discharge Type: Septic tank<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A14SE (E) | 818 | 1 | 352400 664700 |
| 9 | **Discharge Consents**<br>Operator: Robertson Brothers<br>Property Type: Not Supplied<br>Location: St Martins Gate Workshop Haddington<br>Authority: Scottish Environment Protection Agency, East Region<br>Catchment Area: Tyne (Scotland)<br>Reference: Wpc/E/6647<br>Permit Version: 1<br>Effective Date: Not Supplied<br>Issued Date: 22nd March 1994<br>Revocation Date: Not Supplied<br>Discharge Type: Discharge Of Other Matter-Surface Water<br>Discharge Environment: Not Supplied<br>Receiving Water: Not Supplied<br>**Status: Not Supplied**<br>Positional Accuracy: Located by supplier to within 100m | A8SE (S) | 878 | 1 | 351850 663900 |
| | **Nearest Surface Water Feature** | A13NW (NW) | 146 | - | 351345 664872 |
| 10 | **Water Abstractions**<br>Operator: East Scotland Water Authority<br>Licence Number: 2005<br>Permit Version: Not Supplied<br>Location: Kidlaw Intake<br>Authority: Scottish Executive, Agriculture, Environment and Fisheries Department<br>Abstraction: Public Water Supply<br>Abstraction Type: Not Supplied<br>Source: Feeder<br>Daily Rate (m3): 200<br>Yearly Rate (m3): 73000<br>Details: Not Supplied<br>Authorised Start: Not Supplied<br>Authorised End: Not Supplied<br>Permit Start Date: Not Supplied<br>Permit End Date: Not Supplied<br>Positional Accuracy: Located by supplier to within 100m | A7SE (SW) | 747 | 2 | 351100 664100 |
| | **Water Abstractions**<br>Operator: East Scotland Water Authority<br>Licence Number: 2011<br>Permit Version: Not Supplied<br>Location: Witches Knowe, Lothian<br>Authority: Scottish Executive, Agriculture, Environment and Fisheries Department<br>Abstraction: Public Water Supply<br>Abstraction Type: Not Supplied<br>Source: Compensation Reservoir<br>Daily Rate (m3): Not Supplied<br>Yearly Rate (m3): Not Supplied<br>Details: Not Supplied<br>Authorised Start: Not Supplied<br>Authorised End: Not Supplied<br>Permit Start Date: Not Supplied<br>Permit End Date: Not Supplied<br>Positional Accuracy: Located by supplier to within 100m | A3NE (S) | 1118 | 2 | 351600 663600 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| | **Water Abstractions**<br>Operator: Unknown Operator<br>Licence Number: Unknown Licence Number<br>Permit Version: Not Supplied<br>Location: Lammerloch Reservoir, Lothian<br>Authority: Scottish Executive, Agriculture, Environment and Fisheries Department<br>Abstraction: Public Water Supply<br>Abstraction Type: Not Supplied<br>Source: Unknown<br>Daily Rate (m3): Not Supplied<br>Yearly Rate (m3): Not Supplied<br>Details: Not Supplied<br>Authorised Start: Not Supplied<br>Authorised End: Not Supplied<br>Permit Start Date: Not Supplied<br>Permit End Date: Not Supplied<br>Positional Accuracy: Located by supplier to within 100m | A3NW (S) | 1221 | 2 | 351400 663500 |
| | **Water Abstractions**<br>Operator: East Scotland Water Authority<br>Licence Number: 2007<br>Permit Version: Not Supplied<br>Location: Lammerloch Reservoir<br>Authority: Scottish Executive, Agriculture, Environment and Fisheries Department<br>Abstraction: Public Water Supply<br>Abstraction Type: Not Supplied<br>Source: Reservoir/Pond<br>Daily Rate (m3): 200<br>Yearly Rate (m3): 73000<br>Details: Not Supplied<br>Authorised Start: Not Supplied<br>Authorised End: Not Supplied<br>Permit Start Date: Not Supplied<br>Permit End Date: Not Supplied<br>Positional Accuracy: Located by supplier to within 100m | A3SW (S) | 1315 | 2 | 351500 663400 |
| | **Water Abstractions**<br>Operator: Unknown Operator<br>Licence Number: Unknown Licence Number<br>Permit Version: Not Supplied<br>Location: Kidlaw Intake, Lothian<br>Authority: Scottish Executive, Agriculture, Environment and Fisheries Department<br>Abstraction: Public Water Supply<br>Abstraction Type: Not Supplied<br>Source: Unknown<br>Daily Rate (m3): Not Supplied<br>Yearly Rate (m3): Not Supplied<br>Details: Not Supplied<br>Authorised Start: Not Supplied<br>Authorised End: Not Supplied<br>Permit Start Date: Not Supplied<br>Permit End Date: Not Supplied<br>Positional Accuracy: Located by supplier to within 100m | (S) | 1724 | 2 | 351700 663000 |
| | **Groundwater Vulnerability**<br>Geological Classification: Major or Highly Permeable Aquifer - Highly permeable strata usually with a known or probable presence of significant fracturing<br>Soil Classification: Soils of Low Leaching Potential - Soils in which pollutants are unlikely to penetrate the soil layer because water movement is largely horizontal or they have large ability to attenuate diffuse pollutants<br>Map Sheet: Map of Scotland<br>Scale: 1:625,000 | A13SE (E) | 0 | 3 | 351572 664765 |
| | **Groundwater Vulnerability**<br>Geological Classification: Major or Highly Permeable Aquifer - Highly permeable strata usually with a known or probable presence of significant fracturing<br>Soil Classification: Soils of High Leaching Potential - Soils with little ability to attenuate diffuse source pollutants and in which non-absorbed diffuse source pollutants and liquid discharges will percolate rapidly<br>Map Sheet: Map of Scotland<br>Scale: 1:625,000 | A13SE (E) | 0 | 3 | 351572 664765 |
| | **Drift Deposits**<br>Drift Deposit: Low permeability drift deposits which include till, head, peat, lacustrine deposits, clay-with-flints and brick earths<br>Map Sheet: Map of Scotland<br>Scale: 1:625,000 | A13NE (E) | 0 | 3 | 351536 664782 |
| | **River Flood Data (Scotland)**<br>None | | | | |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| | **Local Authority Landfill Coverage**<br>Name: East Lothian Council<br>- Has supplied landfill data | | 0 | 6 | 351431<br>661506 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| | **BGS 1:625,000 Solid Geology**<br>Description: Ashgill and Caradoc | A13NW (NW) | 0 | 4 | 351497 664831 |
| | **Coal Mining Affected Areas**<br>In an area which may not be affected by coal mining | | | | |
| | **Potential for Collapsible Ground Stability Hazards**<br>No Hazard | | | | |
| | **Potential for Compressible Ground Stability Hazards**<br>Hazard Potential: No Hazard<br>Source: British Geological Survey, National Geoscience Information Service | A13NW (W) | 0 | 4 | 351425 664800 |
| | **Potential for Compressible Ground Stability Hazards**<br>Hazard Potential: Moderate<br>Source: British Geological Survey, National Geoscience Information Service | A13NW (W) | 46 | 4 | 351425 664800 |
| | **Potential for Compressible Ground Stability Hazards**<br>Hazard Potential: Moderate<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (E) | 216 | 4 | 351800 664750 |
| | **Potential for Ground Dissolution Stability Hazards**<br>No Hazard | | | | |
| | **Potential for Landslide Ground Stability Hazards**<br>Hazard Potential: Very Low<br>Source: British Geological Survey, National Geoscience Information Service | A13NE (N) | 0 | 4 | 351529 665000 |
| | **Potential for Landslide Ground Stability Hazards**<br>Hazard Potential: Very Low<br>Source: British Geological Survey, National Geoscience Information Service | A13NE (N) | 164 | 4 | 351529 665000 |
| | **Potential for Landslide Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 189 | 4 | 351375 664600 |
| | **Potential for Landslide Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SW (SW) | 244 | 4 | 351325 664575 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (S) | 0 | 4 | 351529 664775 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: Very Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (S) | 0 | 4 | 351529 664775 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (SE) | 10 | 4 | 351575 664750 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13NW (W) | 155 | 4 | 351325 664850 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: No Hazard<br>Source: British Geological Survey, National Geoscience Information Service | A13SW (S) | 214 | 4 | 351425 664525 |
| | **Potential for Running Sand Ground Stability Hazards**<br>Hazard Potential: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (E) | 216 | 4 | 351800 664750 |
| | **Potential for Shrinking or Swelling Clay Ground Stability Hazards**<br>Hazard Potential: Very Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (S) | 0 | 4 | 351529 664775 |
| | **Potential for Shrinking or Swelling Clay Ground Stability Hazards**<br>Hazard Potential: No Hazard<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (S) | 0 | 4 | 351529 664775 |
| | **Potential for Shrinking or Swelling Clay Ground Stability Hazards**<br>Hazard Potential: No Hazard<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (SE) | 10 | 4 | 351575 664750 |
| | **Potential for Shrinking or Swelling Clay Ground Stability Hazards**<br>Hazard Potential: No Hazard<br>Source: British Geological Survey, National Geoscience Information Service | A13NW (W) | 155 | 4 | 351325 664850 |
| | **Radon Potential - Radon Affected Areas**<br>Less than 1% of homes are above the action Level | | | | |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| | **Radon Potential - Radon Protection Measures**<br>No Data Available | | | | |
| | **Shallow Mining Hazards**<br>Risk: Low<br>Source: British Geological Survey, National Geoscience Information Service | A13SE (SE) | 0 | 4 | 351576 664699 |

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| 11 | **Nitrate Vulnerable Zones**<br>Name: Lothian / Borders<br>Description: Groundwater<br>Source: Scottish Executive, Geographic Information Service | (S) | 0 | 5 | 352276<br>662577 |

| Agency & Hydrological | Version | Update Cycle |
|---|---|---|
| **Contaminated Land Register Entries and Notices** | | |
| East Lothian Council | August 2007 | Annual Rolling Update |
| Scottish Borders Council | November 2007 | Annual Rolling Update |
| **Discharge Consents** | | |
| Scottish Environment Protection Agency - East Region | June 2001 | Variable |
| **Enforcement and Prohibition Notices** | | |
| Scottish Environment Protection Agency - East Region | July 2006 | As notified |
| **Integrated Pollution Controls** | | |
| Scottish Environment Protection Agency - Head Office | February 1998 | Variable |
| Scottish Environment Protection Agency - East Region | March 2002 | Variable |
| **Local Authority Pollution Prevention and Controls** | | |
| Scottish Environment Protection Agency - East Region | March 2002 | Variable |
| **Nearest Surface Water Feature** | | |
| Ordnance Survey | October 2007 | Quarterly |
| **Prosecutions Relating to Authorised Processes** | | |
| Scottish Environment Protection Agency - East Region | March 2007 | As notified |
| **Prosecutions Relating to Controlled Waters** | | |
| Scottish Environment Protection Agency - East Region | March 2007 | As notified |
| **Registered Radioactive Substances** | | |
| Scottish Environment Protection Agency - East Region | April 1996 | Variable |
| Scottish Environment Protection Agency - Head Office | January 1998 | Variable |
| **River Quality** | | |
| Scottish Environment Protection Agency - Head Office | December 1990 | Not Applicable |
| **Water Abstractions** | | |
| Scottish Executive - Agriculture, Environment and Fisheries Department | December 1997 | Not Applicable |
| **Water Industry Act Referrals** | | |
| Scottish Environment Protection Agency - East Region | April 1996 | Variable |
| **Groundwater Vulnerability** | | |
| Scottish Environment Protection Agency - Head Office | December 1995 | Not Applicable |
| **Drift Deposits** | | |
| Scottish Environment Protection Agency - Head Office | December 1995 | Not Applicable |

| Waste | Version | Update Cycle |
|---|---|---|
| **BGS Recorded Landfill Sites** | | |
| British Geological Survey - National Geoscience Information Service | June 1996 | Not Applicable |
| **Integrated Pollution Control Registered Waste Sites** | | |
| Scottish Environment Protection Agency - Head Office | January 1998 | Variable |
| Scottish Environment Protection Agency - East Region | March 2002 | Variable |
| **Local Authority Landfill Coverage** | | |
| East Lothian Council | May 2000 | Not Applicable |
| Scottish Borders Council | May 2000 | Not Applicable |
| **Local Authority Recorded Landfill Sites** | | |
| East Lothian Council | May 2000 | Not Applicable |
| Scottish Borders Council | May 2000 | Not Applicable |
| **Registered Landfill Sites** | | |
| Scottish Environment Protection Agency - East Region | December 2005 | Not Applicable |
| Scottish Environment Protection Agency - East Region - Perth Office | December 2005 | Not Applicable |
| **Registered Waste Transfer Sites** | | |
| Scottish Environment Protection Agency - East Region | December 2005 | Not Applicable |
| Scottish Environment Protection Agency - East Region - Perth Office | December 2005 | Not Applicable |
| **Registered Waste Treatment or Disposal Sites** | | |
| Scottish Environment Protection Agency - East Region | December 2005 | Not Applicable |
| Scottish Environment Protection Agency - East Region - Perth Office | December 2005 | Not Applicable |
| **Hazardous Substances** | **Version** | **Update Cycle** |
| **Control of Major Accident Hazards Sites (COMAH)** | | |
| Health and Safety Executive | October 2007 | Bi-Annually |
| **Explosive Sites** | | |
| Health and Safety Executive | August 2007 | Bi-Annually |
| **Notification of Installations Handling Hazardous Substances (NIHHS)** | | |
| Health and Safety Executive | November 2000 | Not Applicable |
| **Planning Hazardous Substance Enforcements** | | |
| East Lothian Council - Planning Department | February 2007 | Annual Rolling Update |
| Scottish Borders Council - Planning Department | September 2007 | Annual Rolling Update |
| **Planning Hazardous Substance Consents** | | |
| East Lothian Council - Planning Department | February 2007 | Annual Rolling Update |
| Scottish Borders Council - Planning Department | September 2007 | Annual Rolling Update |

| Geological | Version | Update Cycle |
|---|---|---|
| **BGS Recorded Mineral Sites**<br>British Geological Survey - National Geoscience Information Service | October 2007 | Bi-Annually |
| **BGS 1:625,000 Solid Geology**<br>British Geological Survey - National Geoscience Information Service | August 1996 | Not Applicable |
| **Coal Mining Affected Areas**<br>The Coal Authority - Mining Report Service | January 2006 | As notified |
| **Mining Instability**<br>Ove Arup & Partners | October 2000 | Not Applicable |
| **Natural and Mining Cavities**<br>Peter Brett Associates | December 2005 | Variable |
| **Potential for Collapsible Ground Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | November 2006 | Annually |
| **Potential for Compressible Ground Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | November 2006 | Annually |
| **Potential for Ground Dissolution Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | November 2006 | Annually |
| **Potential for Landslide Ground Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | April 2007 | Annually |
| **Potential for Running Sand Ground Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | November 2006 | Annually |
| **Potential for Shrinking or Swelling Clay Ground Stability Hazards**<br>British Geological Survey - National Geoscience Information Service | November 2006 | Annually |
| **Shallow Mining Hazards**<br>British Geological Survey - National Geoscience Information Service | August 2002 | Not Applicable |
| **Industrial Land Use** | **Version** | **Update Cycle** |
| **Contemporary Trade Directory Entries**<br>Thomson Directories | August 2007 | Quarterly |
| **Fuel Station Entries**<br>Catalist Ltd - (Fuel Station Data) | October 2007 | Quarterly |

| Sensitive Land Use | Version | Update Cycle |
|---|---|---|
| **Environmentally Sensitive Areas**<br>Scottish Executive - Geographic Information Service | November 2007 | Annually |
| **Forest Parks**<br>Forestry Commission | April 1997 | Not Applicable |
| **Local Nature Reserves**<br>East Lothian Council | November 2007 | Bi-Annually |
| **Marine Nature Reserves**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **National Nature Reserves**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **National Parks**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **National Scenic Areas**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **Nitrate Vulnerable Zones**<br>Scottish Executive - Geographic Information Service | May 2007 | Annually |
| **Ramsar Sites**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **Sites of Special Scientific Interest**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **Special Areas of Conservation**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |
| **Special Protection Areas**<br>Scottish Natural Heritage | November 2007 | Bi-Annually |

# Data Suppliers

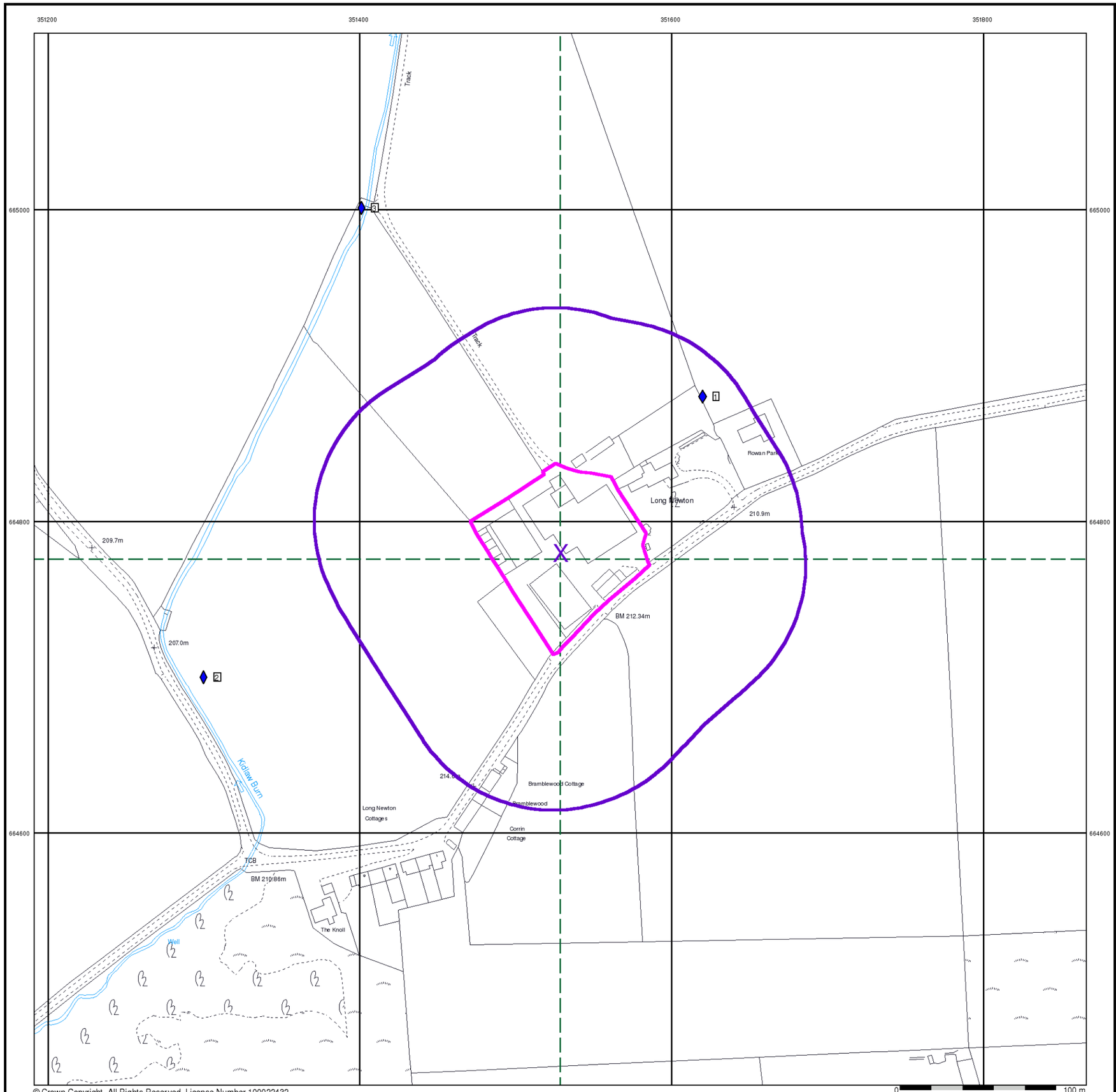
A selection of organisations who provide data within this report

| Data Supplier | Data Supplier Logo |
|---|---|
| Ordnance Survey | |
| Environment Agency | |
| Scottish Environment Protection Agency | |
| The Coal Authority | |
| British Geological Survey | |
| Centre for Ecology and Hydrology | |
| Countryside Council for Wales | |
| Scottish Natural Heritage | |
| Natural England | |
| Health Protection Agency | |
| Ove Arup | |
| Peter Brett Associates | |

# Useful Contacts

| Contact | Name and Address | Contact Details |
|---|---|---|
| 1 | **Scottish Environment Protection Agency - East Region**<br>Clearwater House, Heriot Watt Research Park, Avenue North, Riccarton, Edinburgh, Midlothian, EH14 4AP | Telephone: 0131 449 7296<br>Fax: 0131 449 7277 |
| 2 | **Scottish Executive - Agriculture, Environment and Fisheries Department**<br>Pentland House, 47 Robb's Loan, EDINBURGH, Midlothian, EH14 1TY | Telephone: 0131 2446255<br>Fax: 0131 2446256 |
| 3 | **Scottish Environment Protection Agency - Head Office**<br>Erskine Court, The Castle Business Park, Stirling, Stirlingshire, FK9 4TR | Telephone: 01786 457700<br>Fax: 01786 446885 |
| 4 | **British Geological Survey - Enquiry Service**<br>British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG | Telephone: 0115 936 3143<br>Fax: 0115 936 3276<br>Email: enquiries@bgs.ac.uk<br>Website: www.bgs.ac.uk |
| 5 | **Scottish Executive - Geographic Information Service**<br>Area 1J88, Victoria Quay, Edinburgh, EH6 6QQ | Telephone: 0131 5568400<br>Fax: 0131 2448240<br>Email: ceu@scotland.gov.uk<br>Website: www.scotland.gov.uk |
| 6 | **East Lothian Council**<br>Council Buildings, Court Street, Haddington, East Lothian, EH41 3HD | Telephone: 0162 082 7827<br>Fax: 0162 082 7888<br>Website: www.eastlothian.gov.uk |
| - | **Health Protection Agency**<br>Chilton, Didcot, Oxfordshire, OX11 0RQ | Telephone: 01235 831600<br>Fax: 01235 833891<br>Website: www.hpa.org.uk |
| - | **Landmark Information Group Limited**<br>The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB | Telephone: 0870 850 6670<br>Fax: 0870 850 6671<br>Email: customerservices@landmarkinfo.co.uk<br>Website: www.landmarkinfo.co.uk |

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.



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## General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

## Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

## Geological

- BGS Recorded Mineral Site

## Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

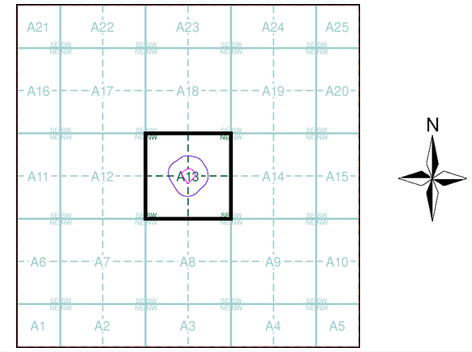
## Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- Integrated Pollution Control Registered Waste Site
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

## Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

## Site Sensitivity Map - Segment A13



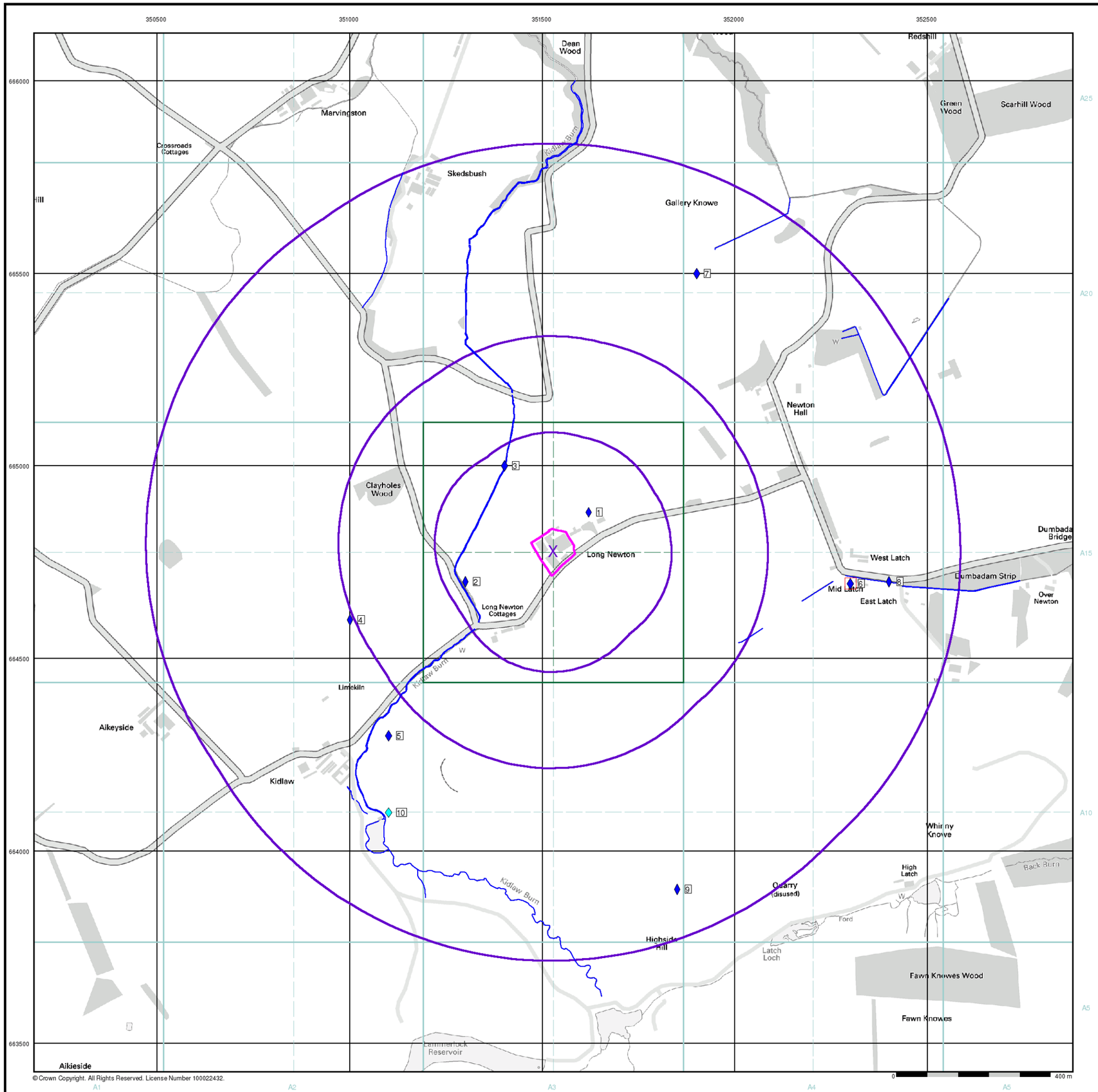

## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Plot Buffer (m): | 100 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk





Envirocheck®
A Landmark service

## General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

## Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

## Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- Integrated Pollution Control Registered Waste Site
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

## Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

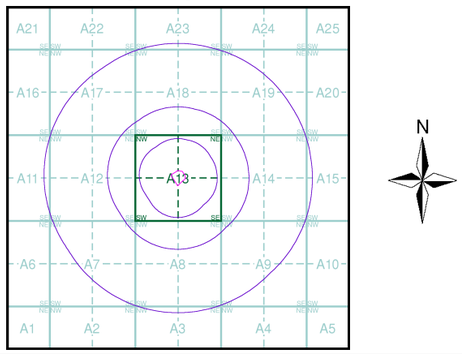
## Geological

- BGS Recorded Mineral Site

## Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry

## Site Sensitivity Map - Slice A



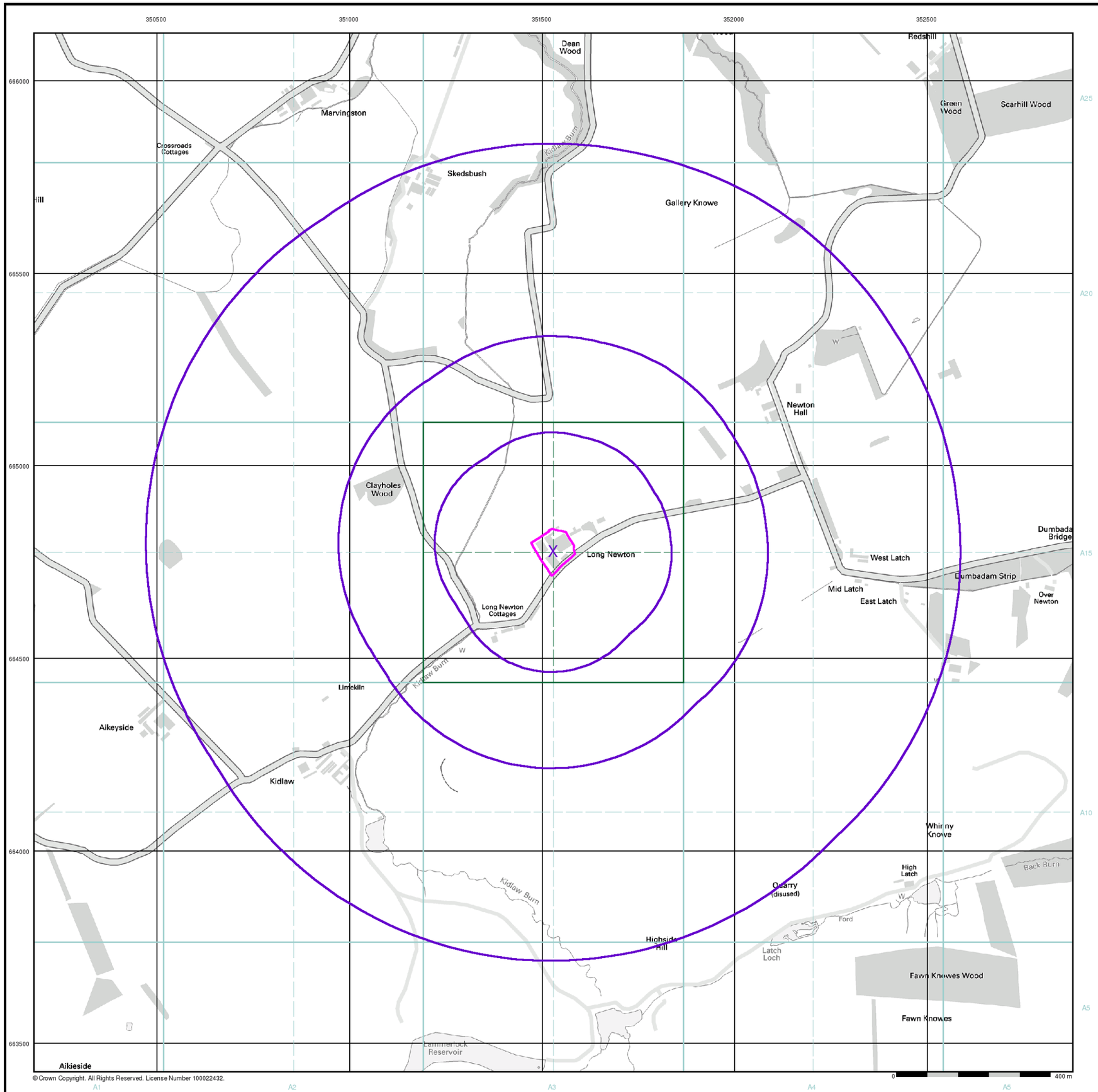

## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk





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A Landmark service

## General

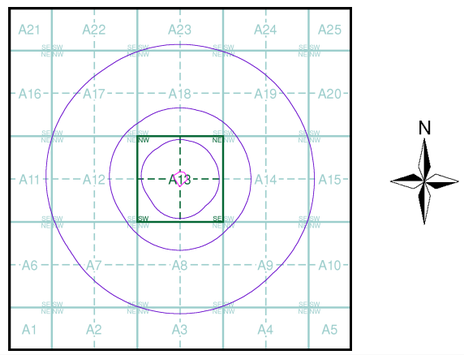
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

## Agency and Hydrological (Flood)

- 0 - 1m estimated 100yr flood depth
- 1 - 2m estimated 100yr flood depth
- Over 2m estimated 100yr flood depth

The flooded areas have been generated using a generalised technique and should not, by themselves, be used to infer that specific areas are or are not at risk of inundation. Flood risk at any specific location may be influenced by local factors - not least flood defence - that have not been taken into account.

## Flood Map - Slice A



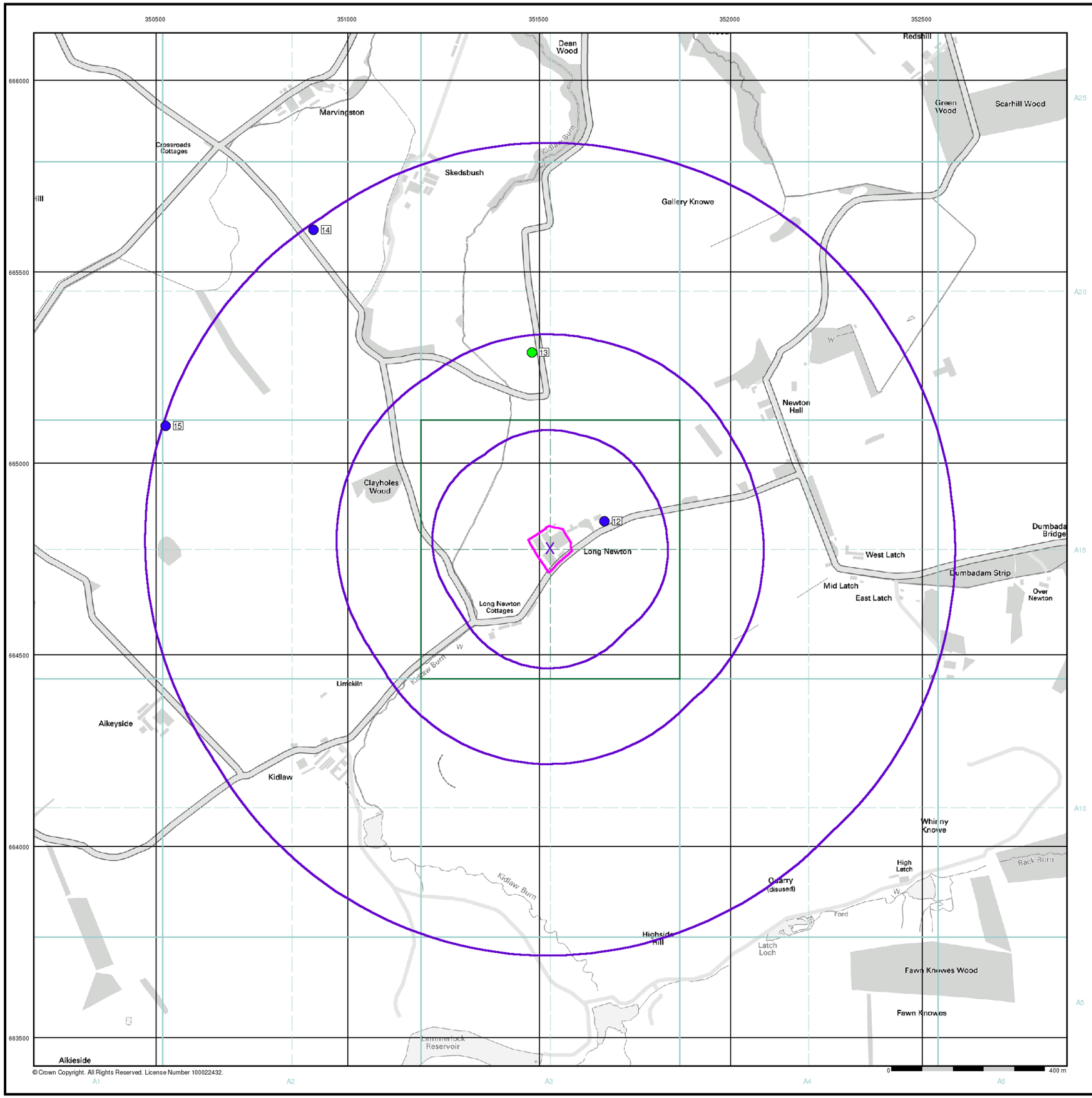

## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk





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## General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

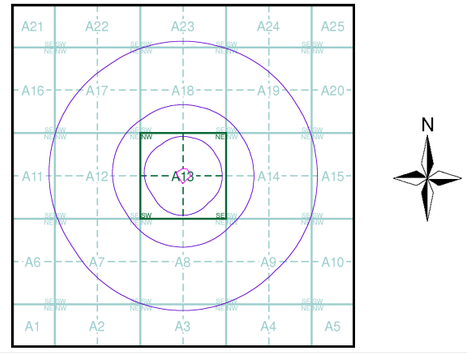
## Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole datasheet which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

## Borehole Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

# Envirocheck® Report:

# BGS Boreholes Datasheet

## Order Details:

**Order Number:**
23871877_1_1

**Customer Reference:**
E8538

**National Grid Reference:**
351530, 664780

**Slice:**
A

**Site Area (Ha):**
0.81

**Borehole Search Buffer (m):**
1000

## Site Details:

Longnewton Farmhouse
Haddington
EH41 4JW

## Client Details:

Mr N Henderson
David R Murray & Associates
150 St John's Road
Edinburgh
EH12 8AY

# BGS Boreholes Summary

| Data Type | Page Number | On Site | 0 to 250m | 251 to 500m | 501 to 1000m |
|---|---|---|---|---|---|
| BGS Boreholes | pg 1 | None | 1 | 1 | 2 |

**Introduction**

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

**Report Version v31.0**

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# BGS Boreholes Detail

| Map ID | Details | Quadrant Reference (Compass Direction) | Estimated Distance From Site | Contact | NGR |
|---|---|---|---|---|---|
| 12 | **BGS Boreholes**<br>BGS Reference: Nt56sw8<br>Drilled Length (m): 3<br>Borehole Name: Long Newton Pb | A13NE (NE) | 104 | 4 | 351670<br>664850 |
| 13 | **BGS Boreholes**<br>BGS Reference: Nt56nw4<br>Drilled Length (m): 11<br>Borehole Name: Kidlaw Burn, Yester E | A18SW (N) | 456 | 4 | 351480<br>665290 |
| 14 | **BGS Boreholes**<br>BGS Reference: Nt56nw3<br>Drilled Length (m): 8.8<br>Borehole Name: Skedsbush, Yester B | A17NE (NW) | 986 | 4 | 350910<br>665610 |
| 15 | **BGS Boreholes**<br>BGS Reference: Nt56nw17<br>Drilled Length (m): 6.5<br>Borehole Name: A68 Soutra South- Oxton Improvement 9 | A12NW (W) | 993 | 4 | 350524<br>665098 |

# Data Currency and Contact Details

| BGS Boreholes | Version | Update Cycle |
|---|---|---|
| **BGS Boreholes**<br>British Geological Survey - National Geoscience Information Service | October 2007 | Quarterly |

| Contact Details | Contact Logo |
|---|---|
| 4 **British Geological Survey - Enquiry Service**<br>British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG<br>Telephone: 0115 936 3143<br>Fax: 0115 936 3276<br>Email: enquiries@bgs.ac.uk<br>Website: www.bgs.ac.uk | |
| - **Landmark Information Group Limited**<br>The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB<br>Telephone: 0870 850 6670<br>Fax: 0870 850 6671<br>Email: customerservices@landmarkinfo.co.uk<br>Website: www.landmarkinfo.co.uk | |

# Agency and Hydrological

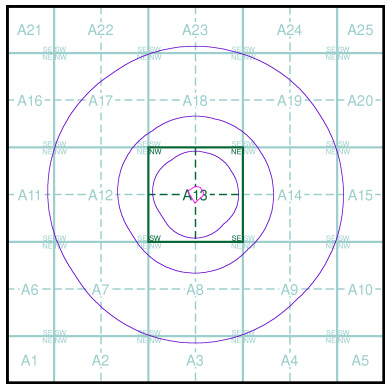
## Order Details

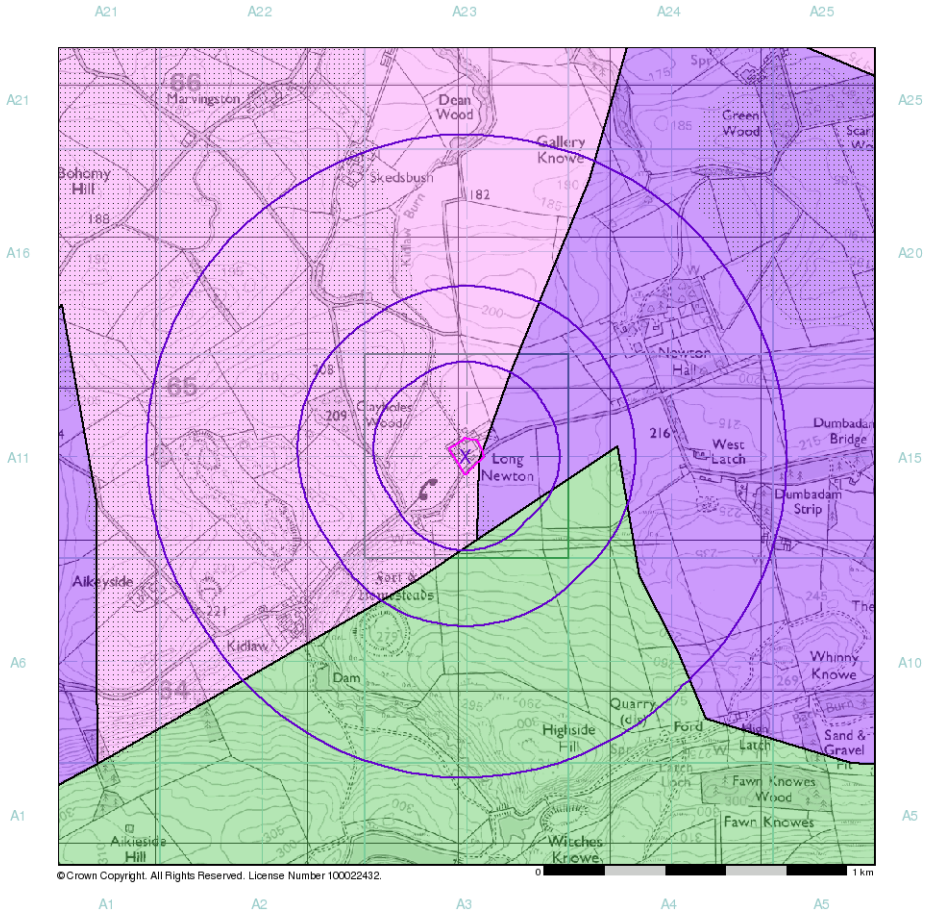
| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

## Groundwater Vulnerability - Slice A




### Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

### General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

### Agency & Hydrological

| Geological Classes | Soil Classes |
|---|---|
| Highly Permeable | High |
| | Intermediate |
| | Low |
| Moderately Permeable | |
| Weakly Permeable | |
| Water or Sea | |
| Drift Deposit | |

# Agency and Hydrological

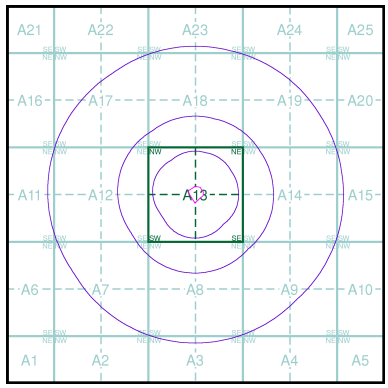
## Order Details

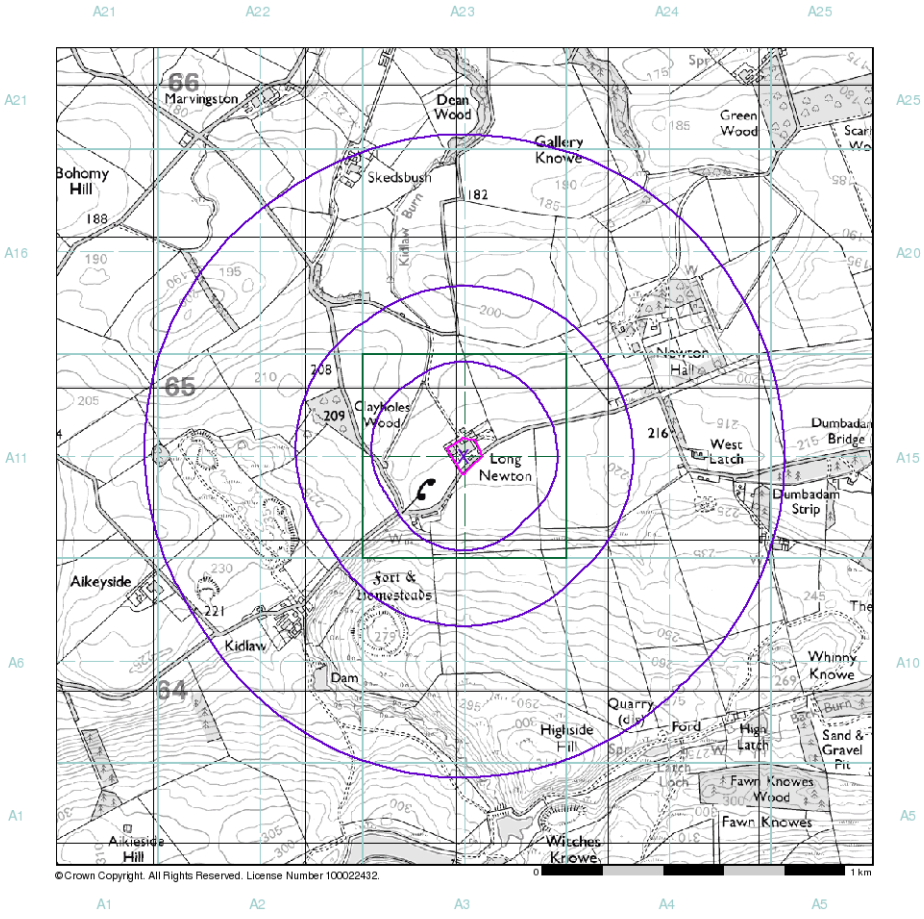
| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

## Source Protection Zones - Slice A




### Background

- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

### General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

### Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

# Sensitive Land Uses

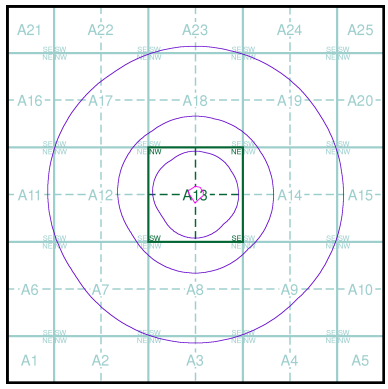
## Order Details

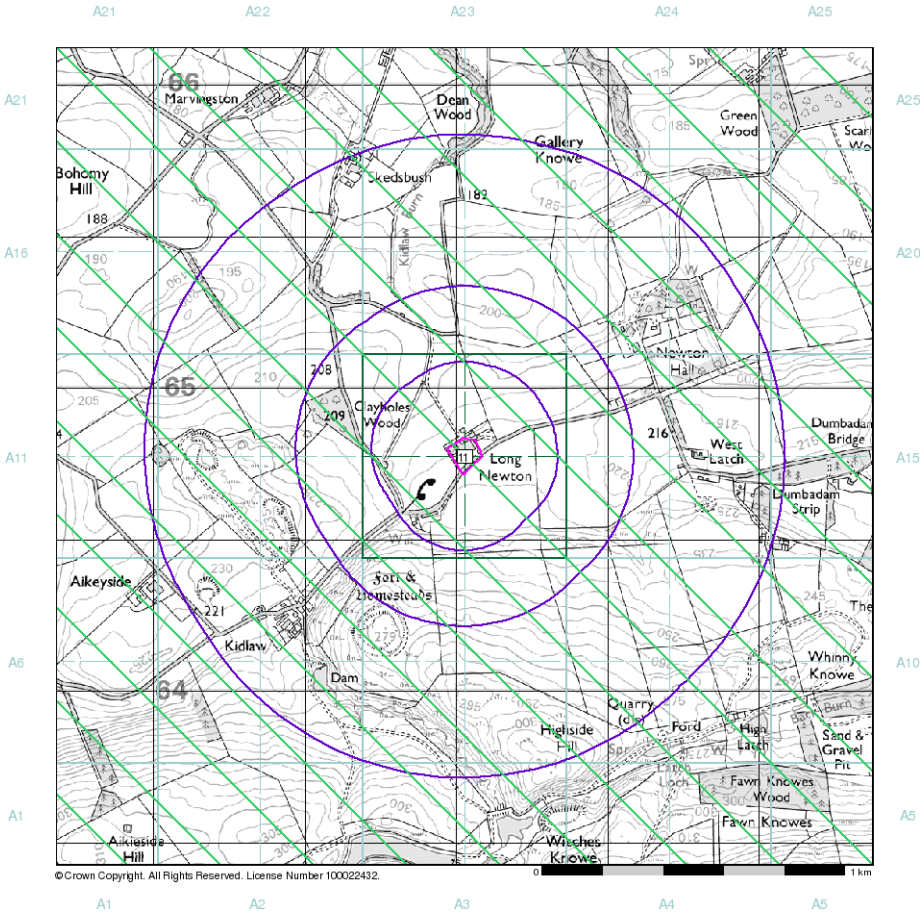
| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

## Sensitive Land Uses - Slice A




### Background

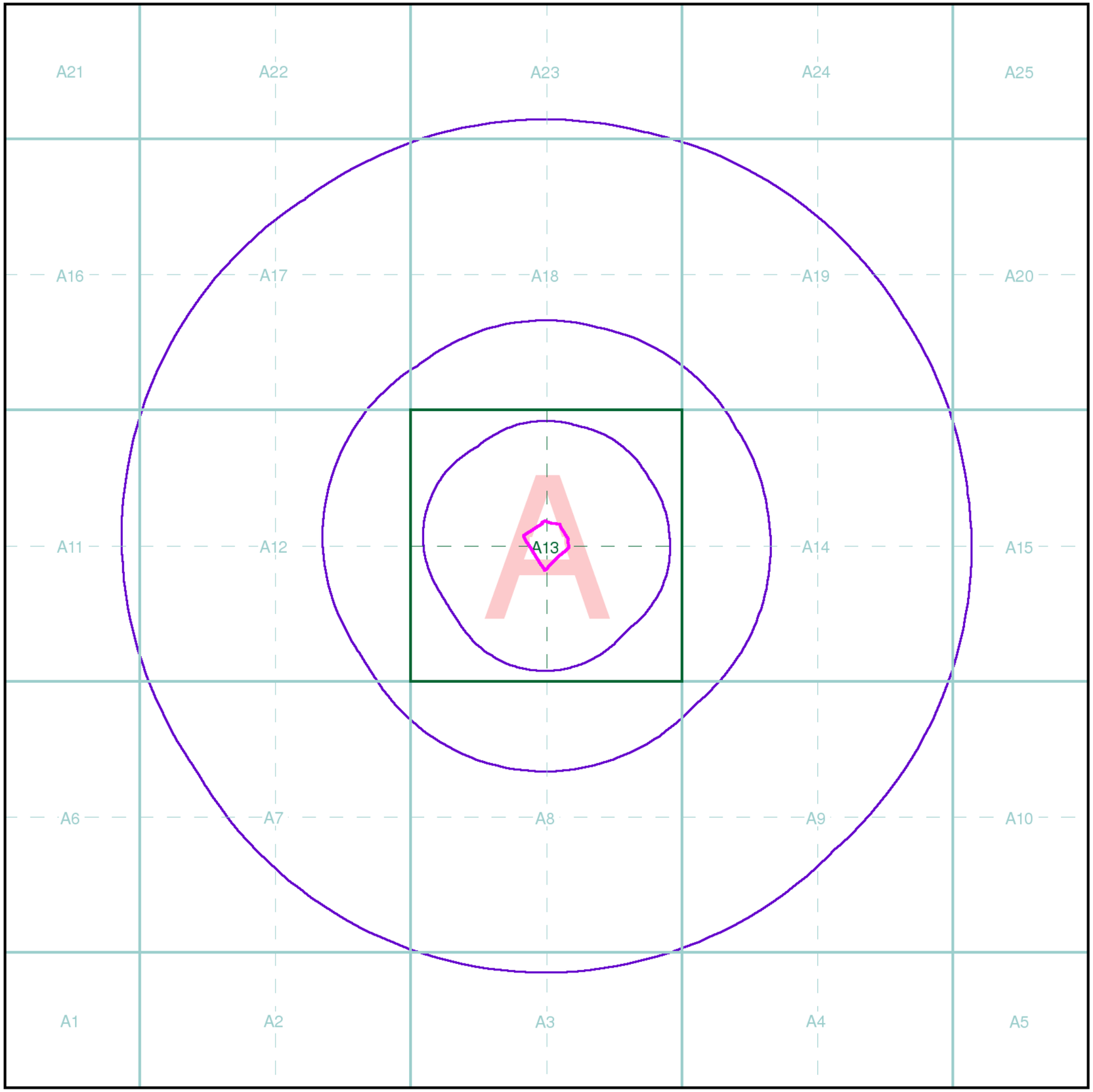
- Footpath
- Bridleway
- Byway open to all traffic
- Road Used as a Public Path
- Other routes with Public Access
- National Trail or Long Distance Route
- Contour
- Fishing
- Nature Reserve

### General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

### Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- National Scenic Area
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

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## Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

**Slice**
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

**Segment**
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

**Quadrant**
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Ordnance Survey® Licensed Partner

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

SEPA Scottish Environment Protection Agency

SCOTTISH NATURAL HERITAGE

Envirocheck reports are compiled from 136 different sources of data.

## Client Details
Mr N Henderson, David R Murray & Associates, 150 St John's Road, Edinburgh, EH12 8AY

## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details
Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK® Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk

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c. The headings in these Terms are for convenience only and shall not affect the meaning or interpretation of any part of these Terms.

d. Landmark may modify these Terms, and may discontinue or revise any or all other aspects of the Services at our sole discretion, with immediate effect and without prior notice, including without limitation changing the Services available at any given time. Any amendment or variation to these Terms shall be posted on our Websites. Continued use of the Services by You shall be deemed an acceptance by You to be bound by any such amendments to the Terms.

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f. These Terms shall prevail at all times to the exclusion of all other terms and conditions including any terms and conditions which You may purport to apply even if such other provisions are submitted in a later document or purport to exclude or override these Terms and neither the course of conduct between parties nor trade practice shall act to modify these Terms.

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a. You acknowledge that all Intellectual Property Rights in the Services are and shall remain owned by either Landmark or our Suppliers and nothing in these Terms purports to transfer, assign or grant any rights to You in respect of the Intellectual Property Rights.

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   ii. any person who purchases the whole of the Property Site,
   iii. any person who provides funding secured on the whole of the Property Site,
   iv. any person for whom You act in a professional or commercial capacity,
   v. any person who acts for You in a professional or commercial capacity; and
   vi. prospective buyers of the Property Site as part of an Information Pack but for the avoidance of doubt, Landmark shall have no liability to such prospective buyer unless the prospective buyer subsequently purchases the Property Site, and the prospective (or actual) buyer shall not be entitled to make the Service available to any other third party.
   Accordingly Landmark shall have the same duties and obligations to those persons in respect of the Services as it has to You.

c. Each of those persons referred to in clause 3.b. shall have the benefit and the burden of Your rights and obligations under these Terms. The limitations of Landmark's liability as set out in clause 6 shall apply to all users of the Service in question in aggregate and Landmark shall not be liable to any other person.

d. All parties given access to the Services agree that they will treat as strictly private and confidential the Services and all information which they obtain from the Services and shall restrict any disclosure to employees or professional advisors to enable the relevant party to conduct its internal business. The requirement in this clause to treat the Services as confidential shall include a requirement to maintain adequate security measures to safeguard the Services from unauthorised access, use or copying.

e. Each recipient of the Services agrees (and agrees it will cause its employees, agents or contractors who may from time to time have access to the Services to agree) it will not, except as permitted herein or by separate agreement with Landmark:-
   i. effect or attempt to effect any modification, merger or change to the Service, nor permit any other person to do so; or
   ii. copy, use, market, re-sell, distribute, merge, alter, add to or carry on any redistribution, reproduction, translation, publication, reduction to any electronic medium or machine readable form or commercially exploit or in any other way deal with or utilise or (except as expressly permitted by applicable law) reverse engineer, decompile or disassemble the Services, Content or Website; or
   iii. remove, alter or in any way change any trademark or proprietary marking in any element of the Services and You shall acknowledge the ownership of the Content, where such Content is incorporated or used into Your own documents, reports, systems or services whether or not these are supplied to any third party.
   iv. create any product which is derived directly or indirectly from the data contained in the Services

f. The mapping contained in any Services is protected by Crown Copyright and must not be used for any purpose outside the context of the Services or as specifically provided by these Terms.

g. You are permitted to make five copies of any Report, but are not authorised to re-sell the Report, any part thereof or any copy thereof unless you are an Authorised Reseller. Further copies may not be made in whole or in part without the prior written permission of Landmark who shall be entitled to make a charge for each additional copy.

**4. Charges**

a. VAT at the prevailing rate shall be payable in addition to the Landmark Fees. You shall pay any other applicable indirect taxes related to Your use of the Services.

b. An individual or a monthly invoice showing all Orders created by You will be generated subject to these Terms. You will pay the Landmark Fees at the rates set out in Landmark's or its Authorised Reseller's invoice. The Landmark Fees are payable in full within 30 days without deduction, counterclaim or set off. You acknowledge that time is of the essence with respect to the payment of such invoices. Landmark reserve the right to amend the Landmark Fees from time to time and the Services will be charged at the Landmark Fee applicable at the date on which the Service is ordered.

c. We may charge interest on late payment at a rate equal to 3% per annum above the base lending rate of National Westminster Bank plc.

d. Landmark or its Authorised Reseller shall not be obliged to invoice any party other than You for the provision of Services, but where Landmark or its Authorised Reseller does so invoice any third party at Your request, and such invoice is not accepted or remains unpaid, Landmark or its Authorised Reseller shall have the option at any time to cancel such invoice and invoice You direct for such Services. Where Your order comprises a number of Services or severable elements within any one or more Services, any failure by Landmark or its Authorised Reseller to provide an element or elements of the Services shall not prejudice Landmark's or its Authorised Reseller's ability to require payment in respect of the Services delivered to You.

**5. Termination**

a. Landmark may suspend or terminate Your rights under these Terms without any liability to You with immediate effect if at any time:-
   i. You fail to make any payment due in accordance with clause 4;
   ii. You repeatedly breach or commit or cause to be committed any material breach of these Terms; or
   iii. You commit a breach and You fail to remedy the breach within 7 days of receipt of a written notice to do so; additionally, without prejudice to the foregoing, Landmark may remedy the breach and recover the costs thereof from You.

b. If Your rights are terminated under this clause and You have made an advance payment We will refund You a reasonable proportion of the balance as determined by Us in relation to the value of Services previously purchased.

c. Landmark reserves the right to refuse to supply any or all Services to You without notice or reason.

**6. Liability**

a. We provide warranties and accept liability only to the extent stated in this clause 6 and clause 7.

b. Nothing in these Terms excludes either party's liability for death or personal injury caused by that party's negligence or wilful default, and the remainder of this clause 6 is subject to this provision and Your statutory rights.

c. As most of the information contained in the Services is provided to Landmark by others, Landmark cannot control its accuracy or completeness, nor is it within the scope of Landmark's Services to check the information on the ground. Accordingly, Landmark will only be liable to You for any loss or damage caused by its negligence or willful default and subject to clause 6.o below neither Landmark nor any person providing information contained in any Services shall in any circumstances be liable for any inaccuracies, faults or omissions in the Services, nor shall Landmark have any liability if the Services are used otherwise than in accordance with these Terms.

d. Save as precluded by law, Landmark shall not be liable for any indirect or consequential loss, damage or expenses (including loss of profits, loss of contracts, business or goodwill) howsoever arising out of any problem, event, action or default by Landmark.

e. In any event, and notwithstanding anything contained in these Terms, Landmark's liability in contract, tort (including negligence or breach of statutory duty) or otherwise howsoever arising by reason or in connection with this Contract (except in relation to death or personal injury) shall be limited to an aggregate amount not exceeding £1 million if the complaint is in relation to a Report on residential property and an aggregate amount not exceeding £10 million in respect of any other Report or Service purchased from Landmark.

f. Landmark will not be liable for any defect, failure or omission relating to Services that is not notified to Landmark within six months of the date of the issue becoming apparent and in any event, within twelve years of the date of the Service.

g. You acknowledge that:-
   i. Subject to clause 6.o below You shall have no claim or recourse against any Third Party Content supplier nor any of our other Suppliers. You will not in any way hold us responsible for any selection or retention of, or the acts of omissions of Third Party Content suppliers or other Suppliers (including those with whom We have contracted to operate various aspects or parts of the Service) in connection with the Services (for the avoidance of doubt Landmark is not a Third Party Content supplier). Landmark does not promise that the supply of the Services will be uninterrupted or error free or provide any particular facilities or functions, or that the Content will always be complete, accurate, precise, free from defects of any other kind, computer viruses, software locks or other similar code although Landmark will use reasonable efforts to correct any inaccuracies within a reasonable period of them becoming known to us;
   ii. Landmark's only obligation is to exercise reasonable skill and care in providing environmental property risk information to persons acting in a professional or commercial capacity who are skilled in the use of property and environmental information and You hereby acknowledge that You are such a person;
   iii. no physical inspection of the Property Site reported on is carried out as part of any Services offered by Landmark and Landmark do not warrant that all land uses or features whether past or current will be identified in the Services. The Services do not include any information relating to the actual state or condition of any Property Site nor should they be used or taken to indicate or exclude actual fitness or unfitness of a Property Site for any particular purpose nor should it be relied upon for determining saleability or value or used as a substitute for any physical investigation or inspection. Landmark recommends that You inspect and take other advice in relation to the Property Site and not rely exclusively on the Services.
   iv. Subject to clause 6.o below, Landmark shall not be responsible for error or corruption in the Services resulting from inaccuracy or omission in primary or secondary information and data, inaccurate processing of information and data by third parties, computer malfunction or corruption of data whilst in the course of conversion, geo-coding, processing by computer or electronic means, or in the course of transmission by telephone or other communication link, or printing.
   v. Landmark will not be held liable in any way if a Report on residential property is used for commercial property or more than the one residential property for which it was ordered.
   vi. the Services have not been prepared to meet Your or anyone else's individual requirements; that You assume the entire risk as to the suitability of the Services and waive any claim of detrimental reliance upon the same; and You confirm You are solely responsible for the selection or omission of any specific part of the Content;
   vii. Landmark offer no warranty for the performance of any linked internet service not operated by Landmark;
   viii. You will on using the Services make a reasonable inspection of any results to satisfy Yourself that there are no defects or failures. In the event that there is a material defect You will notify us in writing of such defect within seven days of its discovery;
   ix. Any support or assistance provided to You in connection with these Terms is at Your risk;

h. All liability for any insurance products purchased by You rests solely with the insurer. Landmark does not endorse any particular product or insurer and no information contained within the Services should be deemed to imply otherwise. You acknowledge that if You Order any such insurance Landmark will deem such as Your consent to forward a copy of the Report to the insurers. Where such policy is purchased, all liability remains with the insurers and You are entirely responsible for ensuring that the insurance policy offered is suitable for Your needs and should seek independent advice. Landmark does not guarantee that an insurance policy will be available on a Property Site. All decisions with regard to the offer of insurance policies for any premises will be made solely at the discretion of the insurers and Landmark accepts no liability in this regard. The provision of a Report does not constitute any indication by Landmark that insurance will be available on the property.

i. Professional opinions contained in Reports are provided to Landmark by third parties, and such third parties are solely liable for the opinion provided. For the avoidance of doubt, those parties providing assessments or professional opinions on Landmark products include RPS Plc & Wilbourn Associates Limited, and any issues with regard to the provision of such opinion should be taken up with the relevant third party.
   If Landmark provides You with any additional service obtained from a third party, including but not limited to any interpretation or conclusion, risk assessment or environmental report or search carried out in relation to a Report on Your Property Site, subject to clause 6.o below Landmark will not be liable in any way for any information contained therein or any issues arising out of the provision of those additional services to You. Landmark will be deemed to have acted as an agent in these circumstances and the supply of these additional services will be governed by the terms and conditions of those Third Parties.

j. In any event no person may rely on a Service more than 12 months after its original date.

k. If You wish to vary any limitation of liability as set out in these Terms, You must request such variation prior to ordering the Service. Landmark shall use its reasonable endeavours to agree such variation but shall not be obliged to do so.

l. Time shall not be of the essence with respect to the provision of the Services.

m. Ordnance Survey have undertaken a positional accuracy improvement programme which may result in discrepancies between the positioning of features used in datasets in the Services and the updated Ordnance Survey mapping. Subject to clause 6.o below, Landmark and its Suppliers exclude all and any liability incurred as a result of the implementation of such positional accuracy improvement programme.

n. Where Landmark provides its own risk assessment in connection with any Report, Landmark shall carry out such assessment with all reasonable skill and care but shall have no liability for any such risk assessment conclusion which is provided for information only, save where Landmark conducted the same negligently, in which case the provisions of clause 6 shall apply. Notwithstanding the provision of any such risk assessment conclusion you should carefully examine the remainder of the Report and should not take or refrain from taking any action based solely on the basis of the risk assessment. For the avoidance of doubt, the provisions of this clause 6n apply solely to risk assessments conducted by Landmark, and the provision of any other risk assessment by a third party shall be governed by such third party's terms in accordance with the provisions of clause 6i above.

o. Landmark obtains much of the information contained in its Report from third parties. Landmark will not accept any liability to You for any negligent or incorrect entry, or error or corruption in the Third Party Content supplied to Landmark, but Landmark's Suppliers may be liable for such negligent or incorrect entries, or errors or corruptions, subject to the terms and conditions on which they supply the Third Party Content to Landmark.

**7. Contribution**

a. Save where expressly provided, this clause 7 shall apply solely to Envirosearch Residential Reports (regardless of the result of such Report). Nothing in this clause 7 shall operate to override or vary the provisions of clause 6.

b. Landmark are prepared to offer, at their sole discretion, and without any admission or inference of liability a contribution towards the costs of any remediation works required under a Notice (as defined below) on the terms of this clause 7 ("the Contribution")

c. In the event that a Remediation Notice is served on the First Purchaser or First Purchaser's Lender of a Property Site under Part II(A) of the Environmental Protection Act 1990 ("the Notice") Landmark will contribute to the cost of such works as either the First Purchaser or First Purchaser's Lender (but not both) are required to carry out under the Notice subject to the provisions of this clause 7 and on the following terms:
   i. the Contribution shall only apply to contamination or a pollution incident present or having occurred prior to the date of the Report;
   ii. the Contribution shall only apply where the Property Site is a single residential dwelling house or a single residential flat within a block of flats. For the avoidance of doubt, this obligation does not apply to any commercial property, nor to any Property Site being developed or redeveloped whether for residential purposes or otherwise;
   iii. the Contribution is strictly limited to the cost of works at the Property Site and at no other site.
   iv. the Contribution will not be paid in respect of any of the following:
   Radioactive contamination of whatsoever nature, directly or indirectly caused by or contributed to or arising from ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel or the radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof.
   Asbestos arising out of or related in any way to asbestos or asbestos-containing materials on or in structures or services serving the structures.
   Naturally occurring materials arising from the presence or required removal of naturally occurring materials except in circumstances where such materials are present in concentrations which are in excess of their natural concentration.
   Intentional non-compliance arising from the intentional disregard of or knowing wilful or deliberate non-compliance by any owner or occupier of the Property Site with any statute, regulation, administrative complaint, notice of violation, or notice letter of any Regulatory Authority.
   Any condition which is known or ought reasonably to have been known to the First Purchaser or the First Purchaser's Lender prior to the purchase of the Report.
   Any condition which is caused by acts of War or an Act of Terrorism.
   Any property belonging to or in the custody or control of the First Purchaser which does not form a fixed part of the Property Site or the structure.
   Any fines liquidated damages punitive or exemplary damages.
   Any bodily injury including without limitation, death, illness or disease, mental injury, anguish or nervous shock.
   Any financial loss in respect of any loss of any rental, profit, revenue, savings or business or any consequential indirect or economic loss damage or expense including the cost of rent of temporary premises or business interruption.
   Any losses incurred following a material change in use of, alteration or development of the Property Site.

d. The maximum sum that shall be contributed by Landmark in respect of any Contribution shall be limited to £60,000. In the event that more than one Report is purchased on the Property Site the Contribution will only be payable under the first Report purchased by or on behalf of any First Purchaser or First Purchaser's Lender and no Contribution will be made in respect of subsequent Reports purchased by or on behalf of such First Purchaser, First Purchaser's Lender or any person connected to them.

e. Landmark shall only pay a Contribution where the Notice is served within 36 months of the date of the Report.

f. Any rights to a Contribution under this Clause 7 are not assignable in the event of a sale of the Property Site and Landmark will not make any Contribution after the date of completion of such sale.

g. In the event the First Purchaser or First Purchaser's Lender wishes to claim any Contribution, it shall notify Landmark in writing within 3 months of the date of the Notice. The First Purchaser or First Purchaser's Lender (as applicable) shall comply with all reasonable requirements of Landmark with regard to the commission and conduct of the remediation works to be carried out under the Notice, and in the event the First Purchaser or First Purchaser's Lender (as applicable) does not do so, including without limitation, obtaining Landmark's prior written consent to any estimates for such works or complying with any other reasonable request by Landmark, Landmark shall not be required to pay any Contribution. Notwithstanding the payment of the Contribution by Landmark the First Purchaser or First Purchaser's Lender as applicable shall take all reasonable steps to mitigate any costs incurred in connection with the conduct of works required under the terms of any Notice.

h. In the event that the First Purchaser or First Purchaser's Lender receives any communication from a statutory authority to the effect that there is an intent to serve a notice received under PartIII(A) of the Environmental Protection Act 1990 they will advise Landmark within a maximum period of two months from receipt of such communication. This clause 7h and the service of any notice under it shall not affect the provisions of clauses 7 e and g, and any such communications, even if advised to Landmark will not operate as notice under clause 7e.

i. Landmark reserve the right at any time prior to a claim for Contribution being made in accordance with clause 7 g) above, to withdraw the offer of payment of Contributions without further notice.

**8. Events Beyond Our Control**

a. You acknowledge that Landmark shall not be liable for any delay, interruption or failure in the provision of the Services which are caused or contributed to by any circumstance which is outside our reasonable control including but not limited to, lack of power, telecommunications failure or overload, computer malfunction, inaccurate processing of data, or delays in receiving, loading or checking data, corruption of data whilst in the course of conversion, geo-coding, processing by computer in the course of electronic communication, or printing.

**9. Severability**

a. If any provision of these Terms are found by either a court or other competent authority to be void, invalid, illegal or unenforceable, that provision shall be deemed to be deleted from these Terms and never to have formed part of these Terms and the remaining provisions shall continue in full force and effect.

**10. Governing Law**

a. These terms shall be governed by and construed in accordance with English law and each party agrees irrevocably submit to the exclusive jurisdiction of the English courts If any dispute arises out of or in connection with this agreement (a "Dispute") the parties undertake that, prior to the commencement of Court proceedings, they will seek to have the Dispute resolved amicably by use of an alternative dispute resolution procedure acceptable to both parties with the assistance of the Centre for Dispute Resolution (CEDR) if required, by written notice initiating that procedure. If the Dispute has not been resolved to the satisfaction of either party within 60 days of initiation of the procedure or if either party fails or refuses to participate in or withdraws from participating in the procedure then either party may refer the Dispute to the Court.

**11. General; Complaints**

a. Landmark may assign its rights and obligations under these Terms without prior notice or any limitation.

b. Landmark may authorise or allow our contractors and other third parties to provide to Landmark and/or to You services necessary or related to the Services and to perform Landmark's obligations and exercise Landmark's rights under these Terms, which may include collecting payment on Landmark's behalf.

c. No waiver on Landmark's part to exercise, and no delay in exercising, any right, power or provision hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or provision hereunder preclude the exercise of that or any other right, power or provision.

d. Unless otherwise stated in these Terms, all notices from You to Landmark must be in writing and sent to the Landmark registered office (or in the case of an Authorised Reseller, to its registered office address) and subject to paragraph e below all notices from Landmark to You will be displayed on our Websites from time to time.

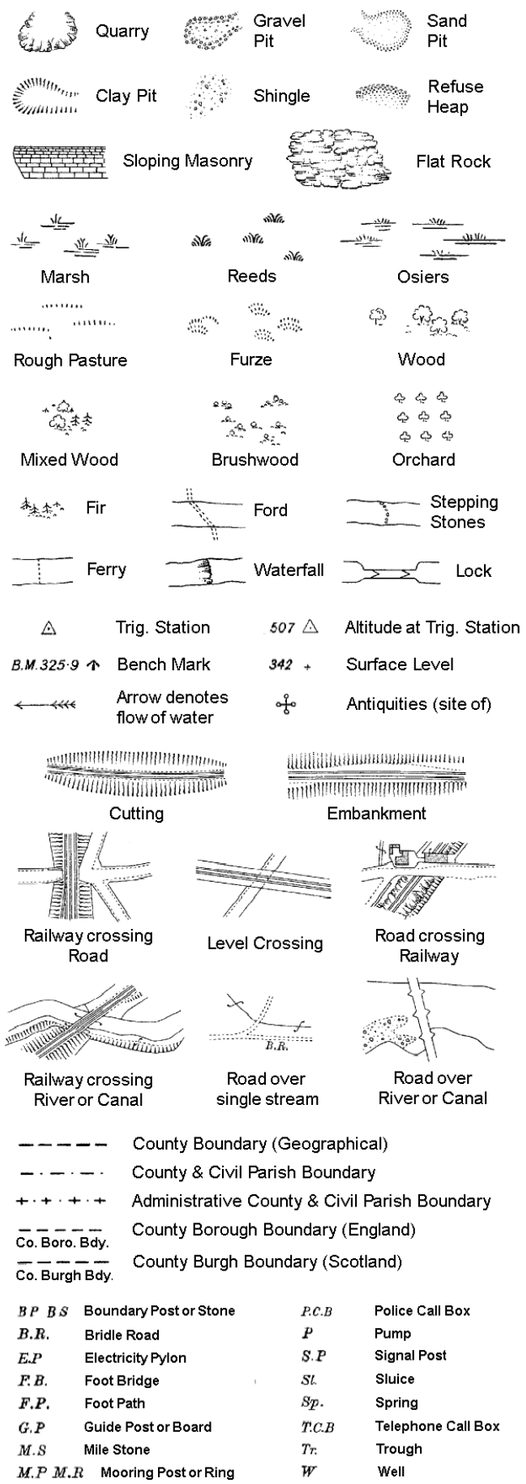
e. Any complaints in relation to the Services should, in the first instance, be in writing addressed to the Customer Service Support Manager at the Landmark registered office. Landmark or its agents will respond to any such complaints in writing as soon as practicably possible.

f. A person who is not a party to any contract made pursuant to these Terms shall have no right under the Contract (Right of Third Parties) Act 1999 to enforce any terms of such contract and Landmark shall not be liable to any such third party in respect of any Services supplied.

g. Landmark's Privacy Policy as displayed on the Website governs the use made of any information You supply to Landmark.

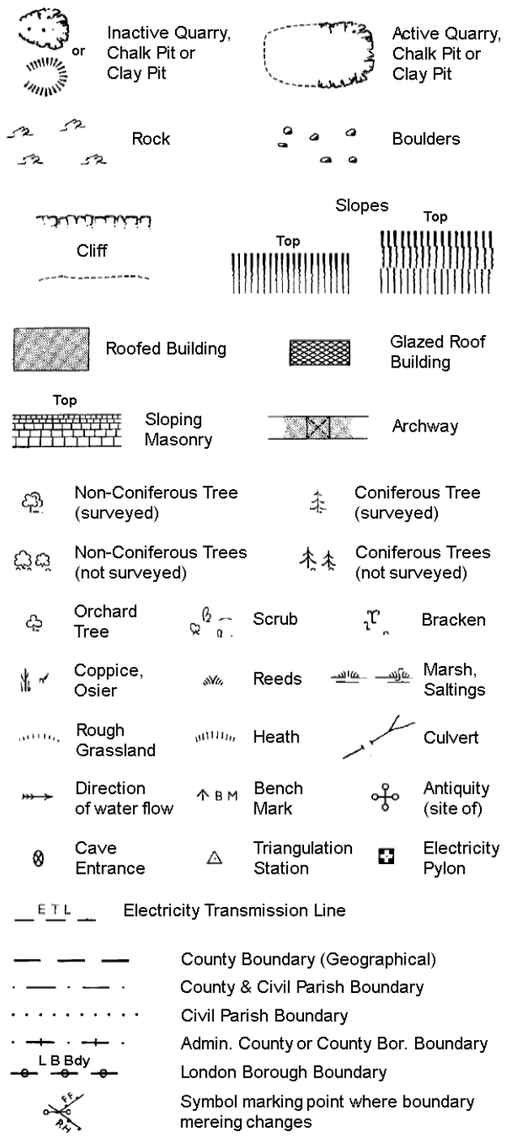
# Historical Mapping Legends

## Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



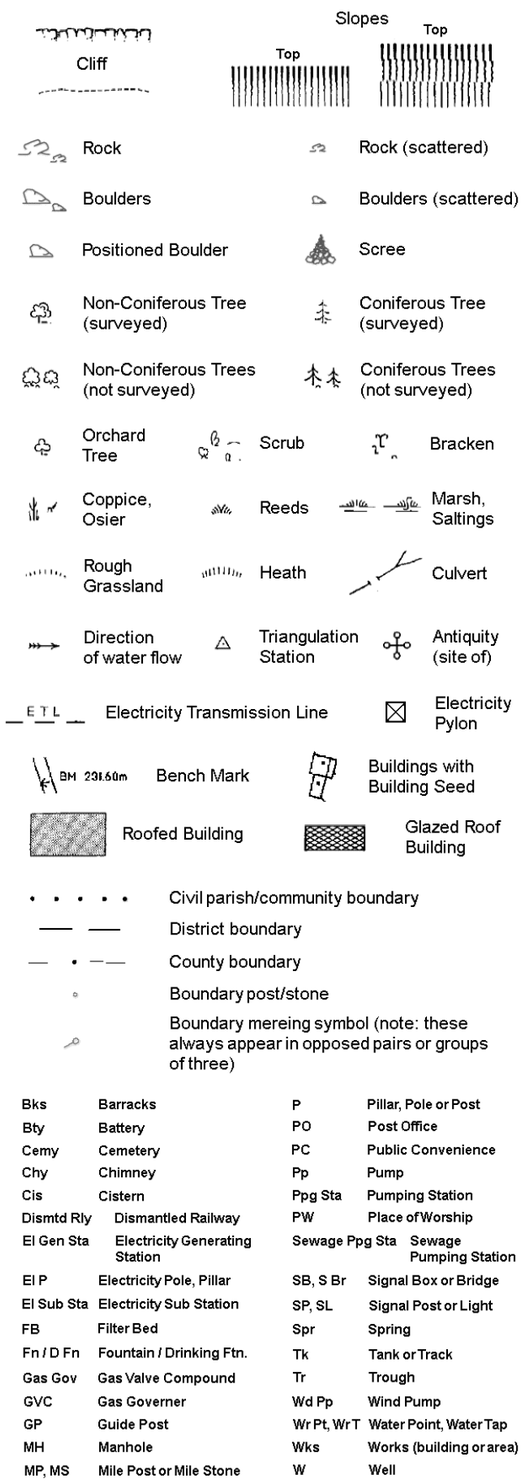

| | | | |
|---|---|---|---|
| B P B S | Boundary Post or Stone | P.C.B | Police Call Box |
| B.R. | Bridle Road | P | Pump |
| E.P | Electricity Pylon | S.P | Signal Post |
| F.B. | Foot Bridge | St. | Sluice |
| F.P. | Foot Path | Sp. | Spring |
| G.P | Guide Post or Board | T.C.B | Telephone Call Box |
| M.S | Mile Stone | Tr. | Trough |
| M.P M.R | Mooring Post or Ring | W | Well |

## Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250




| | | | |
|---|---|---|---|
| BH | Beer House | P | Pillar, Pole or Post |
| BP, BS | Boundary Post or Stone | PO | Post Office |
| Cn, C | Capstan, Crane | PC | Public Convenience |
| Chy | Chimney | PH | Public House |
| D Fn | Drinking Fountain | Pp | Pump |
| El P | Electricity Pillar or Post | SB, S Br | Signal Box or Bridge |
| FAP | Fire Alarm Pillar | SP, SL | Signal Post or Light |
| FB | Foot Bridge | Spr | Spring |
| GP | Guide Post | Tk | Tank or Track |
| H | Hydrant or Hydraulic | TCB | Telephone Call Box |
| LC | Level Crossing | TCP | Telephone Call Post |
| MH | Manhole | Tr | Trough |
| MP | Mile Post or Mooring Post | Wr Pt, Wr T | Water Point, Water Tap |
| MS | Mile Stone | W | Well |
| NTL | Normal Tidal Limit | Wd Pp | Wind Pump |

## Large-Scale National Grid Data 1:2,500 and 1:1,250




| | | | |
|---|---|---|---|
| Bks | Barracks | P | Pillar, Pole or Post |
| Bty | Battery | PO | Post Office |
| Cemy | Cemetery | PC | Public Convenience |
| Chy | Chimney | Pp | Pump |
| Cis | Cistern | Ppg Sta | Pumping Station |
| Dismtd Rly | Dismantled Railway | PW | Place of Worship |
| El Gen Sta | Electricity Generating Station | Sewage Ppg Sta | Sewage Pumping Station |
| El P | Electricity Pole, Pillar | SB, S Br | Signal Box or Bridge |
| El Sub Sta | Electricity Sub Station | SP, SL | Signal Post or Light |
| FB | Filter Bed | Spr | Spring |
| Fn / D Fn | Fountain / Drinking Ftn. | Tk | Tank or Track |
| Gas Gov | Gas Valve Compound | Tr | Trough |
| GVC | Gas Governer | Wd Pp | Wind Pump |
| GP | Guide Post | Wr Pt, Wr T | Water Point, Water Tap |
| MH | Manhole | Wks | Works (building or area) |
| MP, MS | Mile Post or Mile Stone | W | Well |

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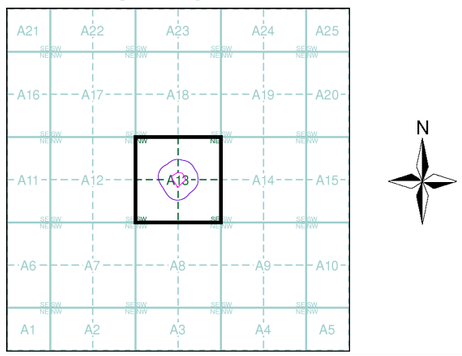
## Ordnance Survey mapping included:

| Mapping Type | Scale | Date | Pg |
|---|---|---|---|
| Haddingtonshire | 1:2,500 | 1894 | 2 |
| Haddingtonshire | 1:2,500 | 1907 | 3 |
| Ordnance Survey Plan | 1:2,500 | 1967 | 4 |
| Large-Scale National Grid Data | 1:2,500 | 1994 | 5 |

## Historical Map - Segment A13




## Order Details

Order Number: 23871877_1_1
Customer Ref: E8538
National Grid Reference: 351530, 664780
Slice: A
Site Area (Ha): 0.81
Search Buffer (m): 100

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW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Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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## Haddingtonshire

## Published 1894

## Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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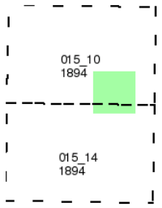
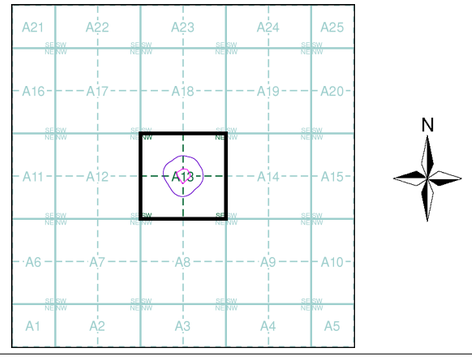



### Historical Map - Segment A13




### Order Details

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| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 100 |

### Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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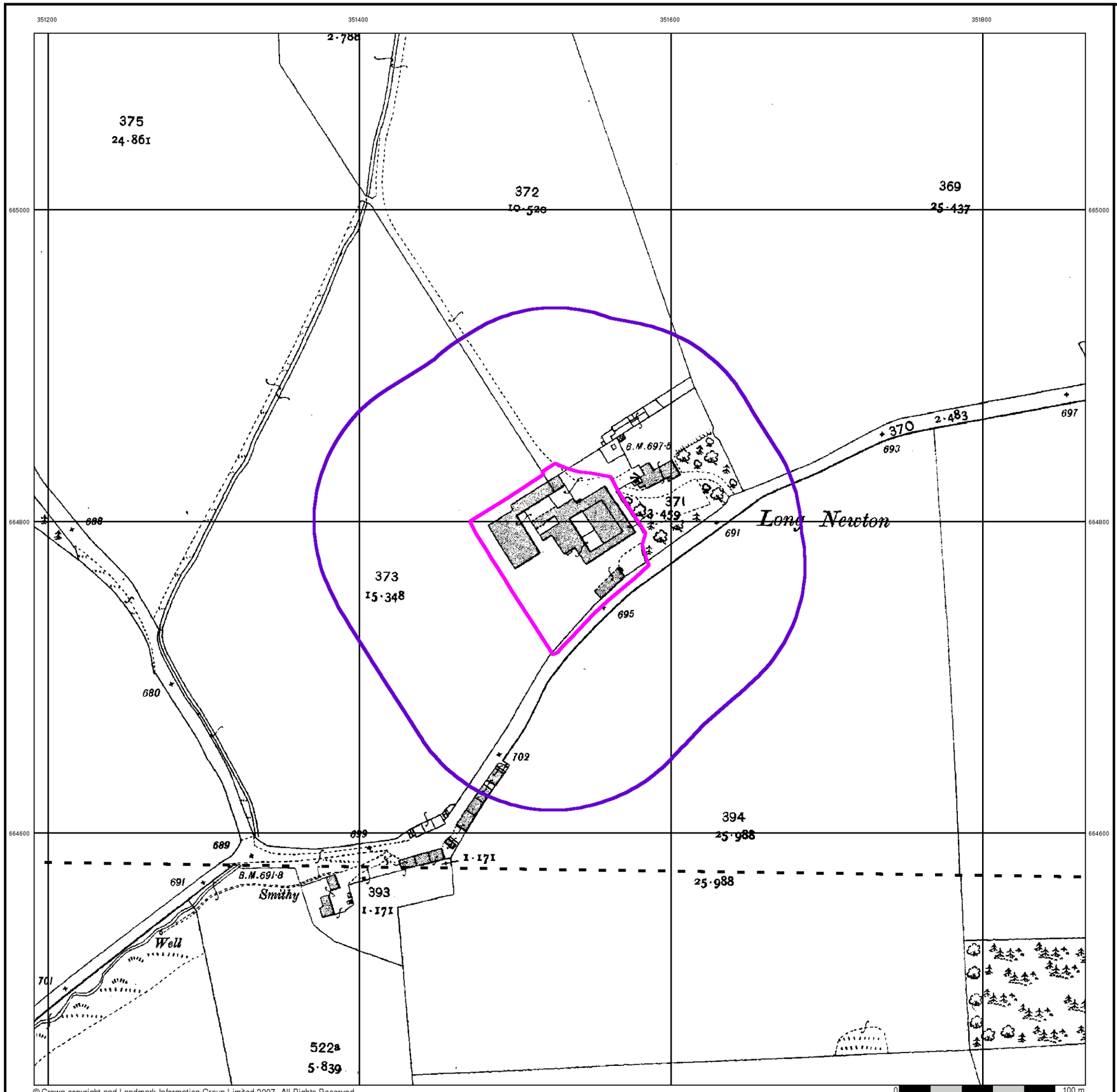
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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## Haddingtonshire

## Published 1907

## Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

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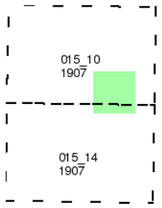
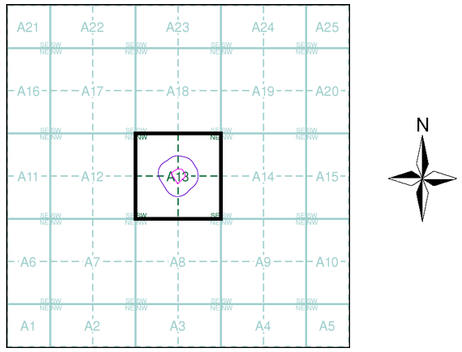



## Historical Map - Segment A13




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 100 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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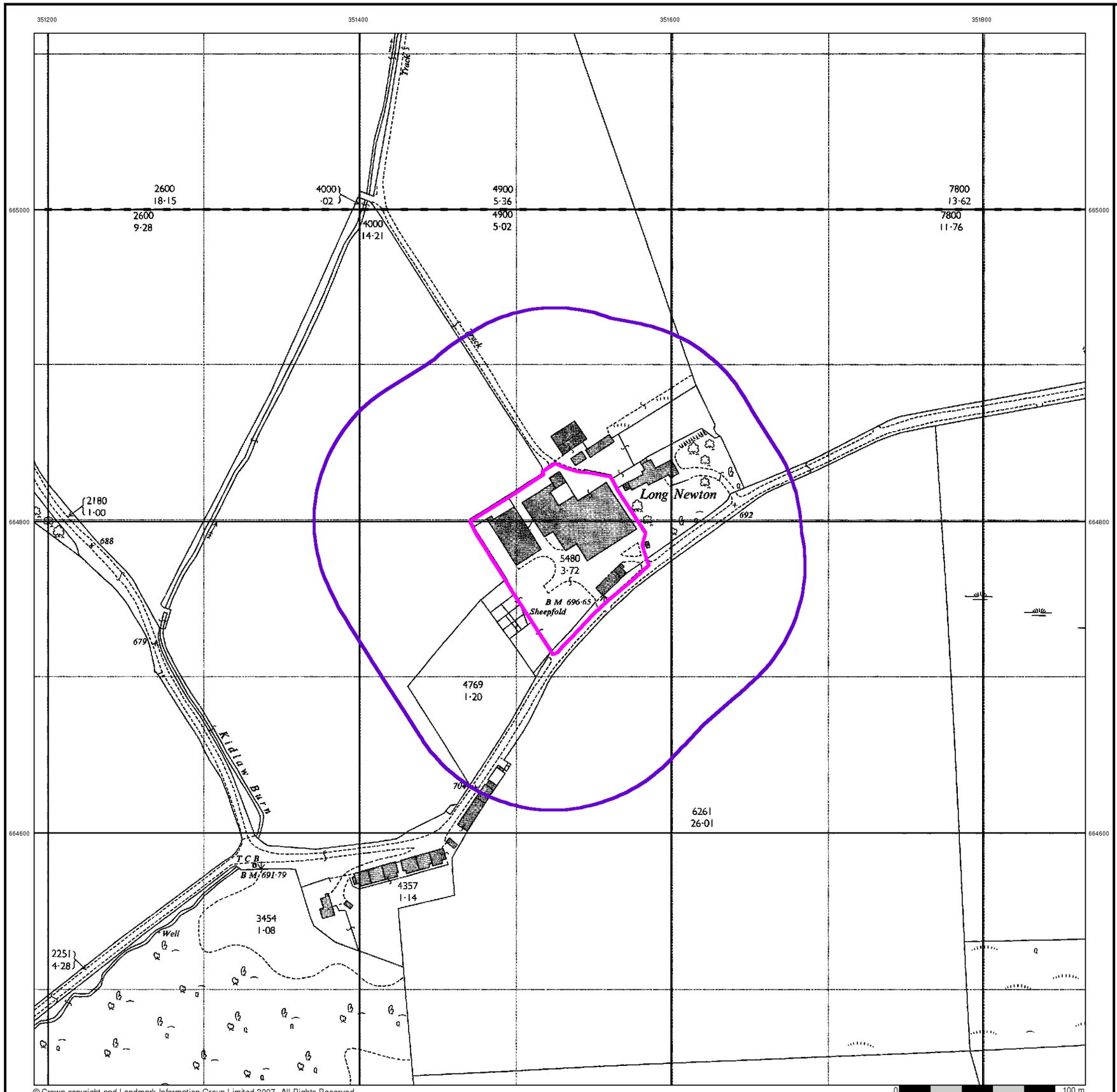
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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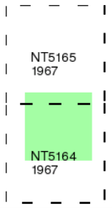
## Ordnance Survey Plan

**Published 1967**

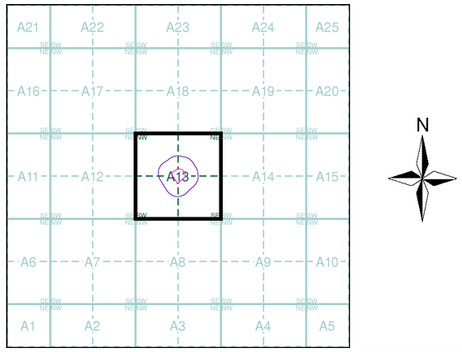
**Source map scale - 1:2,500**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 100 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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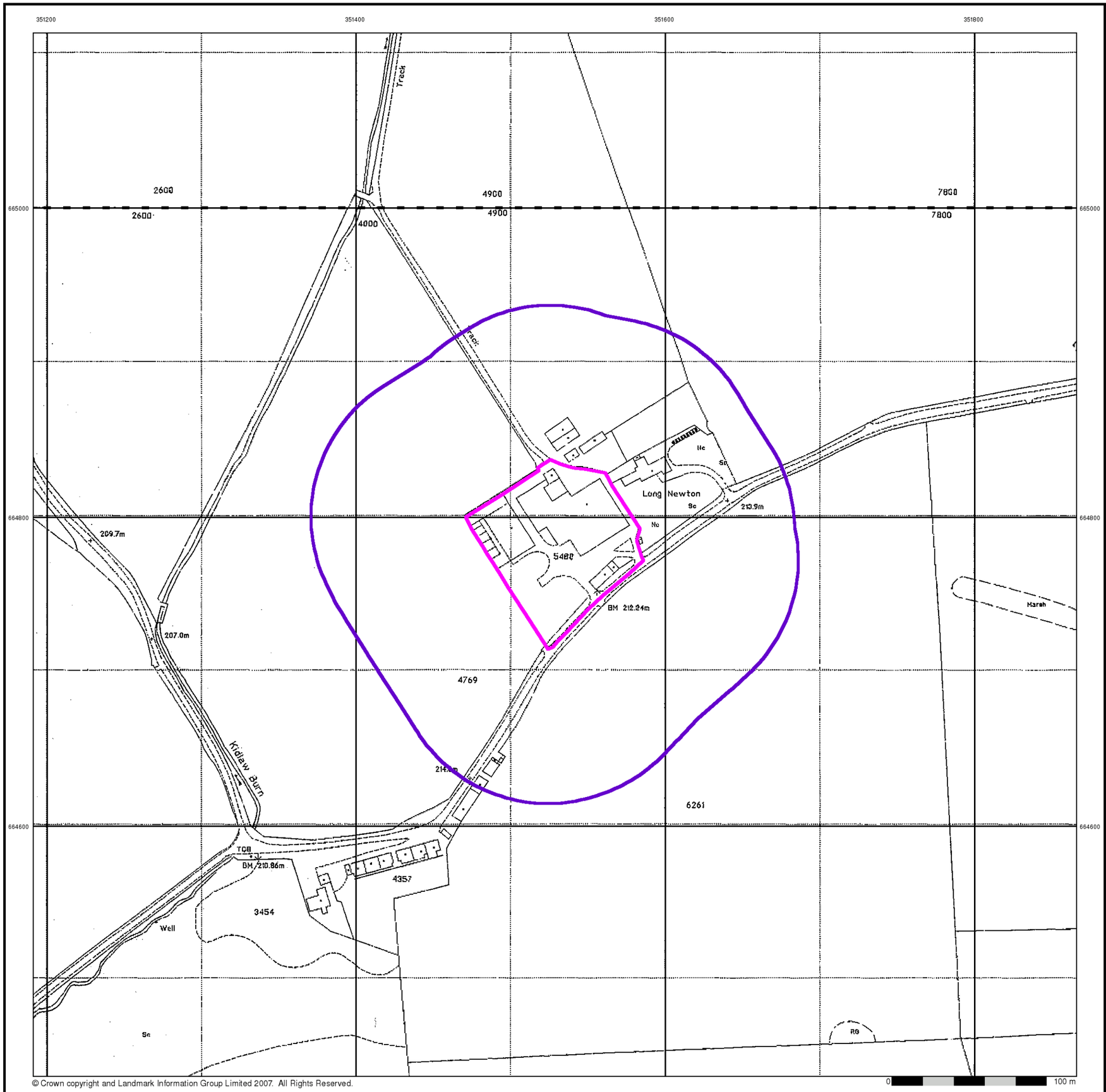
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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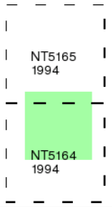
## Large-Scale National Grid Data

**Published 1994**

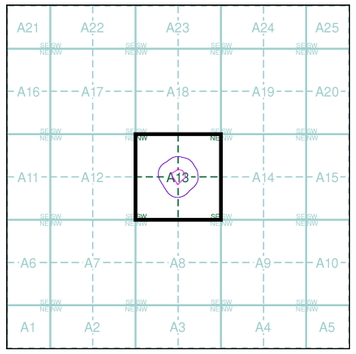
**Source map scale - 1:2,500**

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

## Map Name(s) and Date(s)




## Historical Map - Segment A13




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 100 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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Fax: 0870 850 6671
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# Historical Mapping Legends

## Ordnance Survey County Series and Ordnance Survey Plan 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy.
County Borough Boundary (England)
Co. Burgh Bdy.
County Burgh Boundary (Scotland)
R.D. Bdy.
Rural District Boundary
Civil Parish Boundary

## Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Sloping Masonry
Pylon
Electricity Transmission Line
Pole
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

| | | | |
|---|---|---|---|
| BP, BS | Boundary Post or Stone | Pol Sta | Police Station |
| Ch | Church | PO | Post Office |
| CH | Club House | PC | Public Convenience |
| F E Sta | Fire Engine Station | PH | Public House |
| FB | Foot Bridge | SB | Signal Box |
| Fn | Fountain | Spr | Spring |
| GP | Guide Post | TCB | Telephone Call Box |
| MP | Mile Post | TCP | Telephone Call Post |
| MS | Mile Stone | W | Well |

## 1:10,000 Raster Mapping

Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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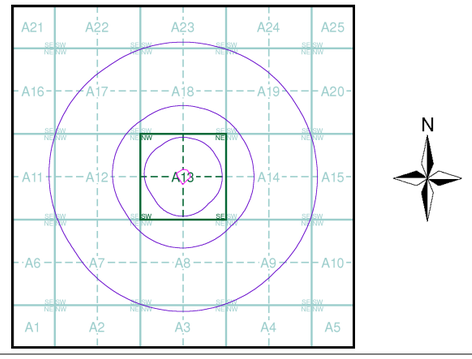
## Ordnance Survey mapping included:

| Mapping Type | Scale | Date | Pg |
|---|---|---|---|
| Haddingtonshire | 1:10,560 | 1854 - 1855 | 2 |
| Haddingtonshire | 1:10,560 | 1908 | 3 |
| Ordnance Survey Plan | 1:10,560 | 1957 | 4 |
| Ordnance Survey Plan | 1:10,560 | 1970 | 5 |
| Ordnance Survey Plan | 1:10,000 | 1970 - 1982 | 6 |
| 10K Raster Mapping | 1:10,000 | 1999 | 7 |
| 10K Raster Mapping | 1:10,000 | 2007 | 8 |

## Historical Map - Slice A




## Order Details

Order Number: 23871877_1_1
Customer Ref: E8538
National Grid Reference: 351530, 664780
Slice: A
Site Area (Ha): 0.81
Search Buffer (m): 1000

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW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Tel: 0870 850 6670
Fax: 0870 850 6671
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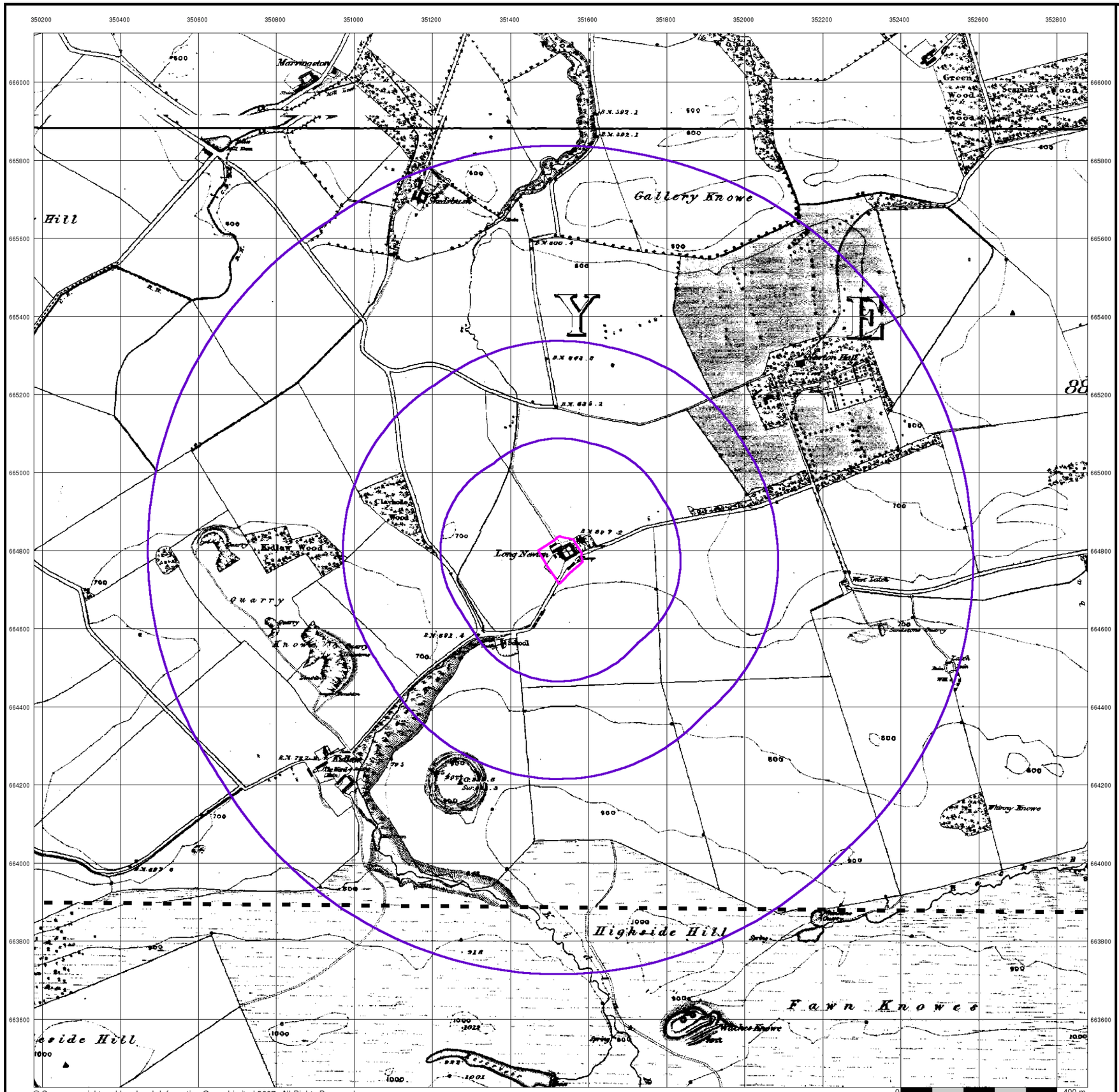




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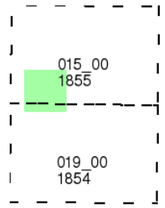
## Haddingtonshire

## Published 1854 - 1855

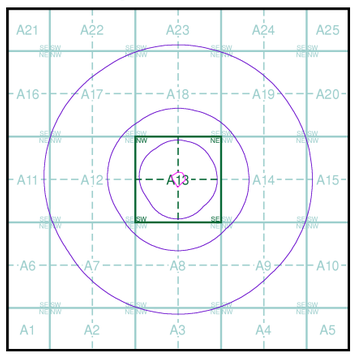
## Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
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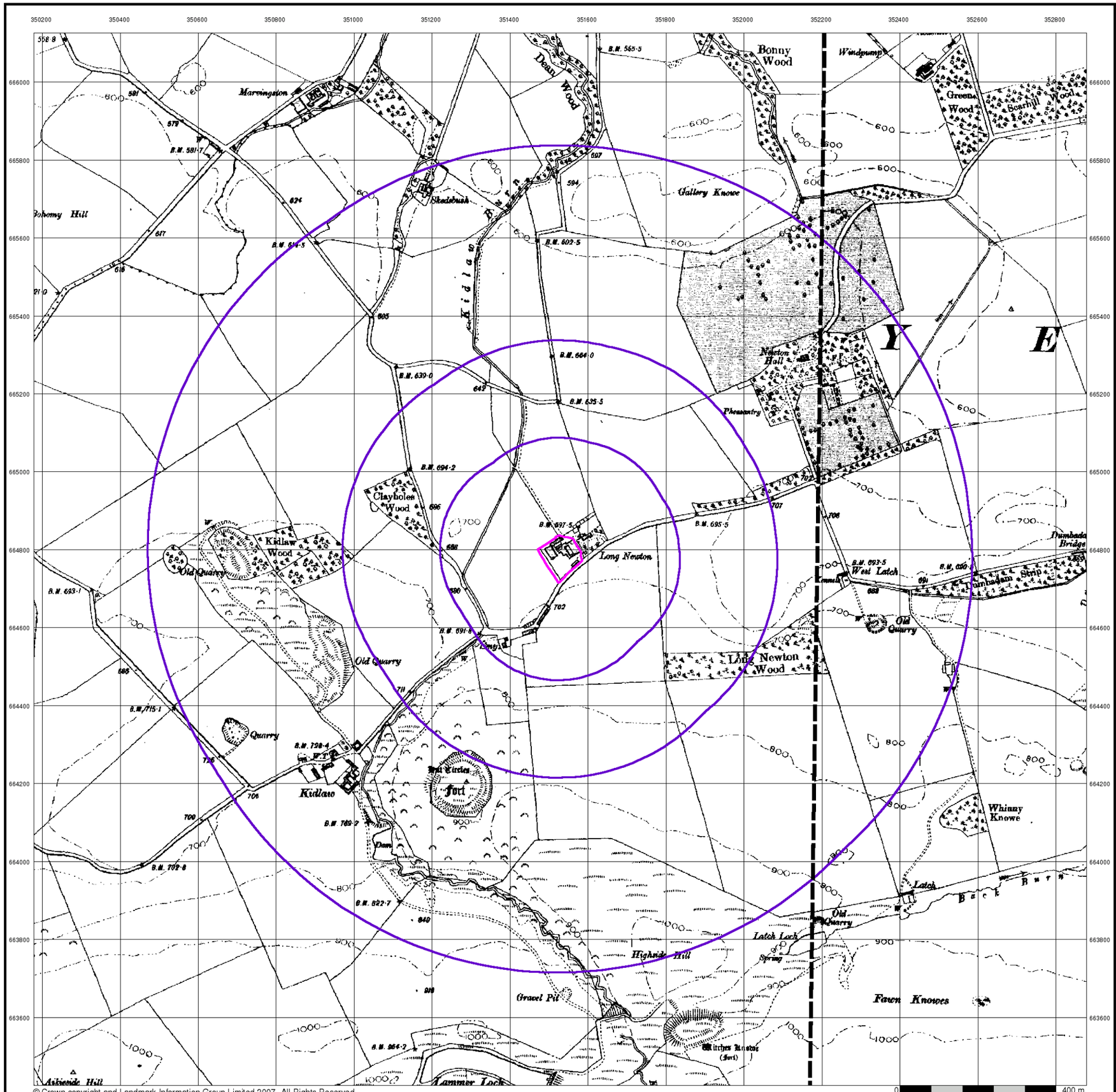




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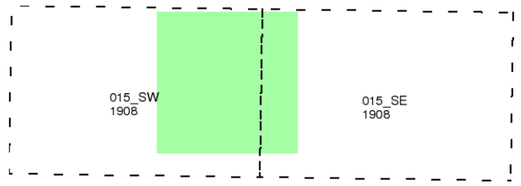
## Haddingtonshire

## Published 1908

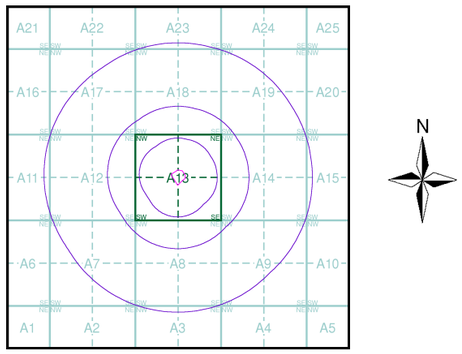
## Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

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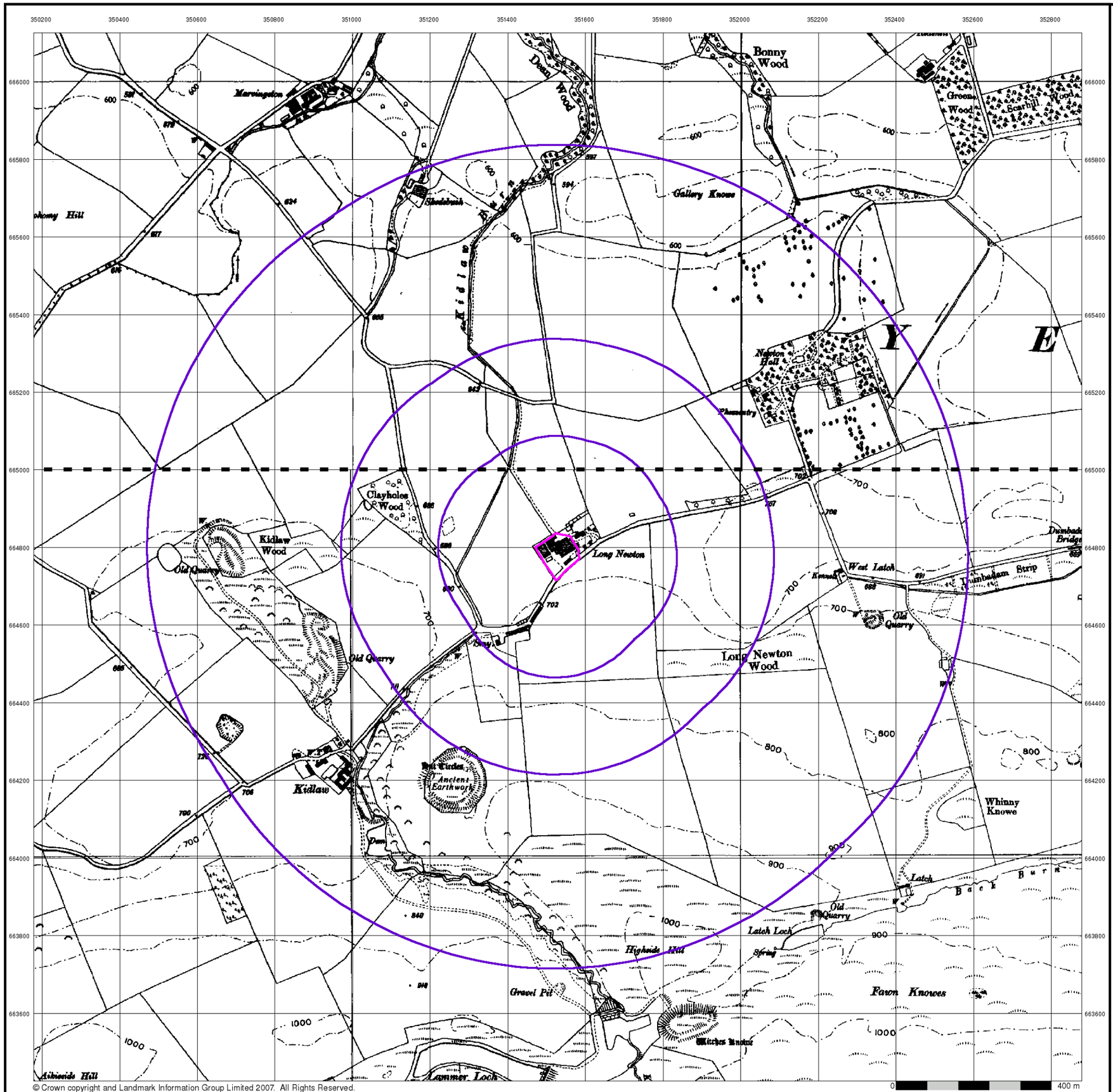




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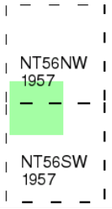
## Ordnance Survey Plan

**Published 1957**

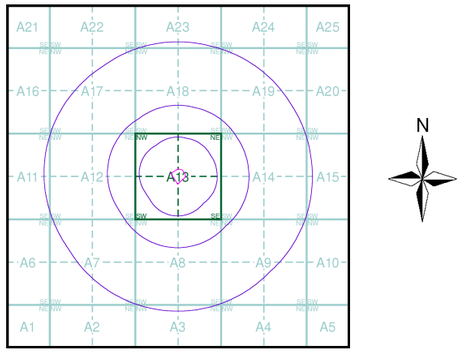
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)




## Historical Map - Slice A



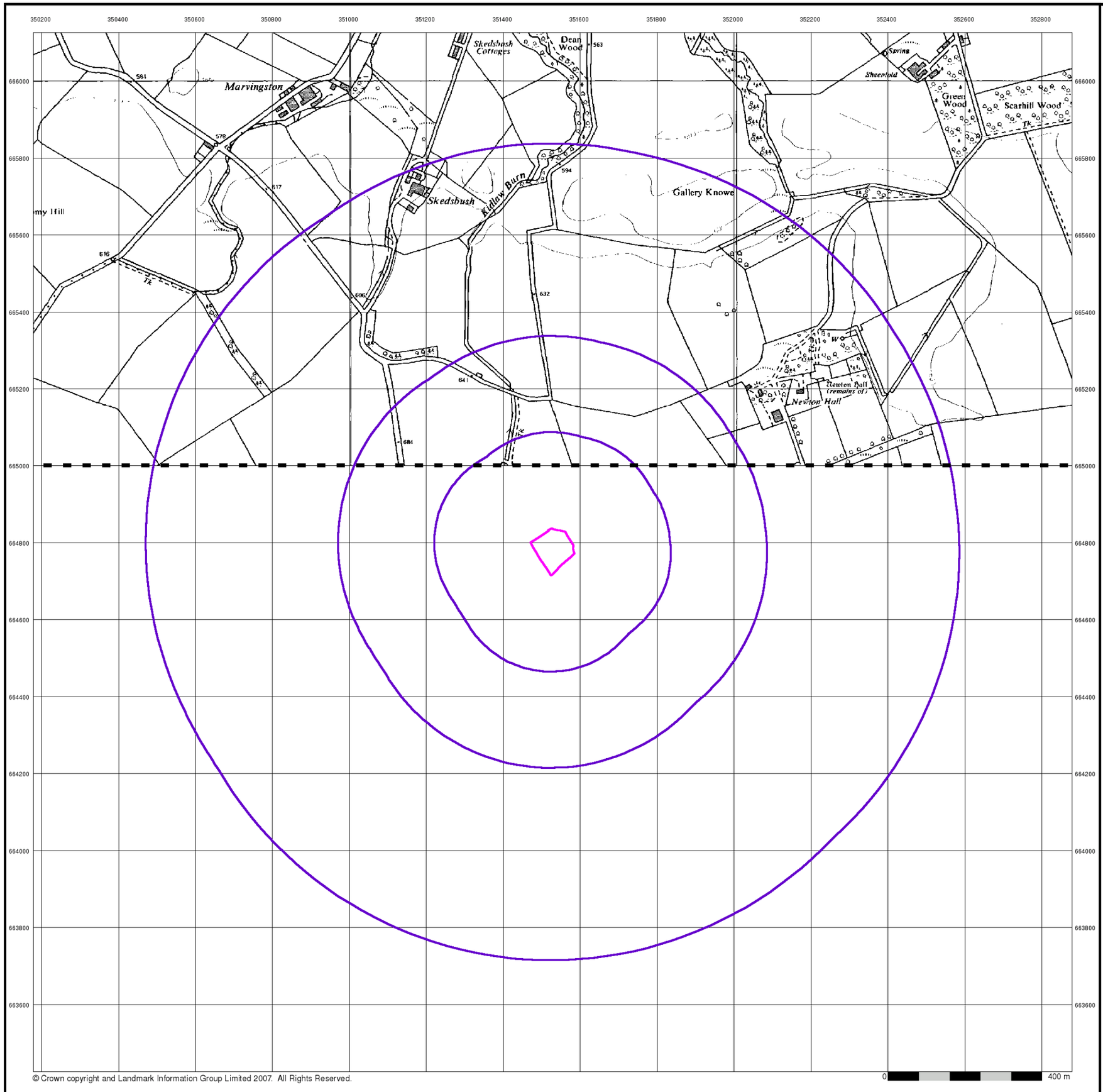

## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK Information Group
Tel: 0870 850 6670
Fax: 0870 850 6671
Web: www.envirocheck.co.uk



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## Ordnance Survey Plan

**Published 1970**

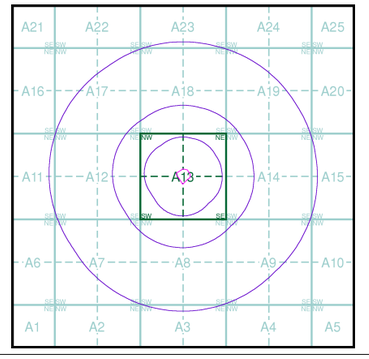
**Source map scale - 1:10,560**

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

| | |
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| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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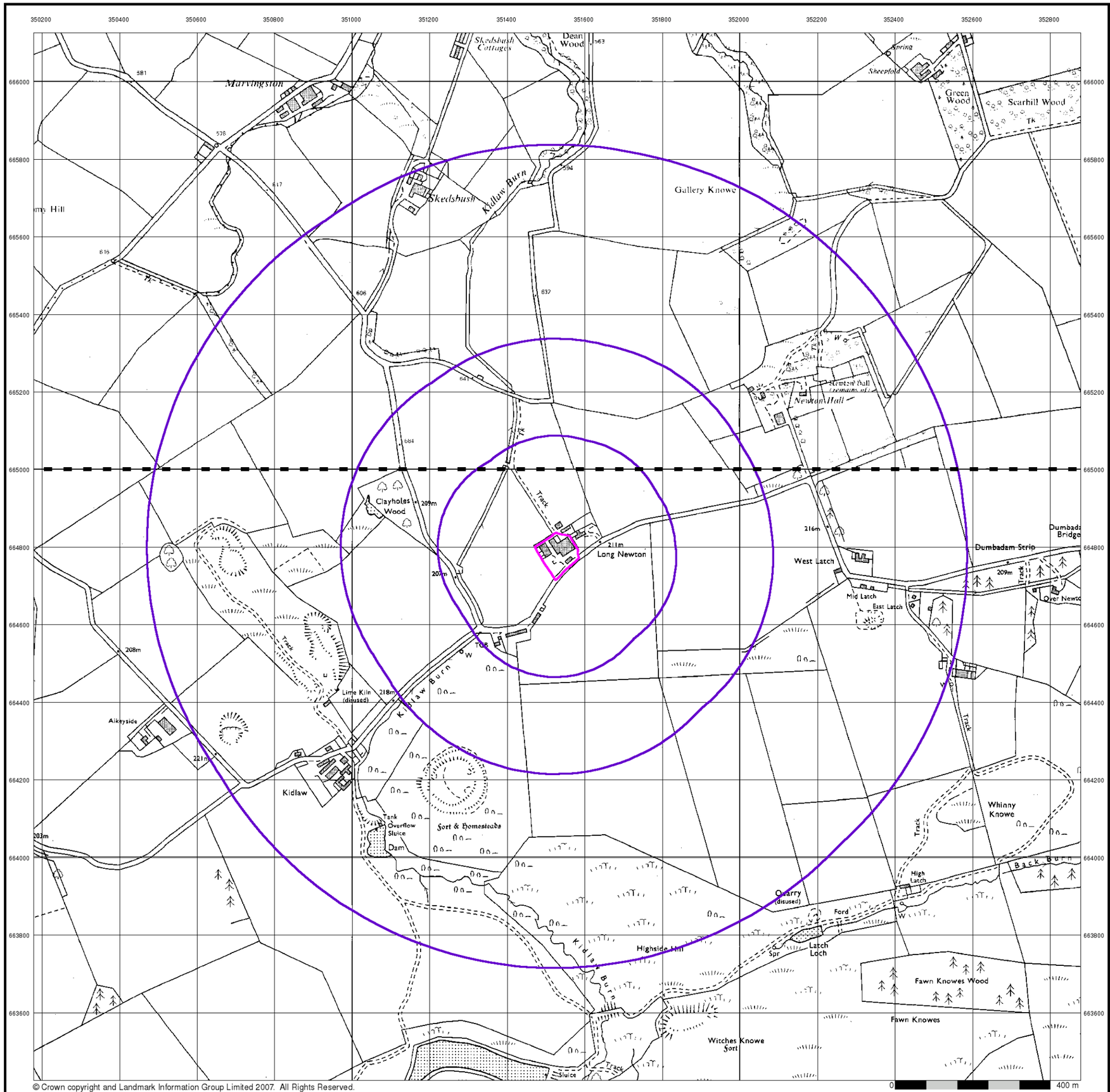




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## Ordnance Survey Plan

**Published 1970 - 1982**

**Source map scale - 1:10,000**

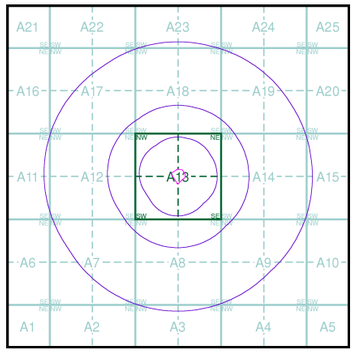
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

## Map Name(s) and Date(s)

NT56NW
1970

NT56SW
1982

## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
| Search Buffer (m): | 1000 |

## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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Tel: 0870 850 6670
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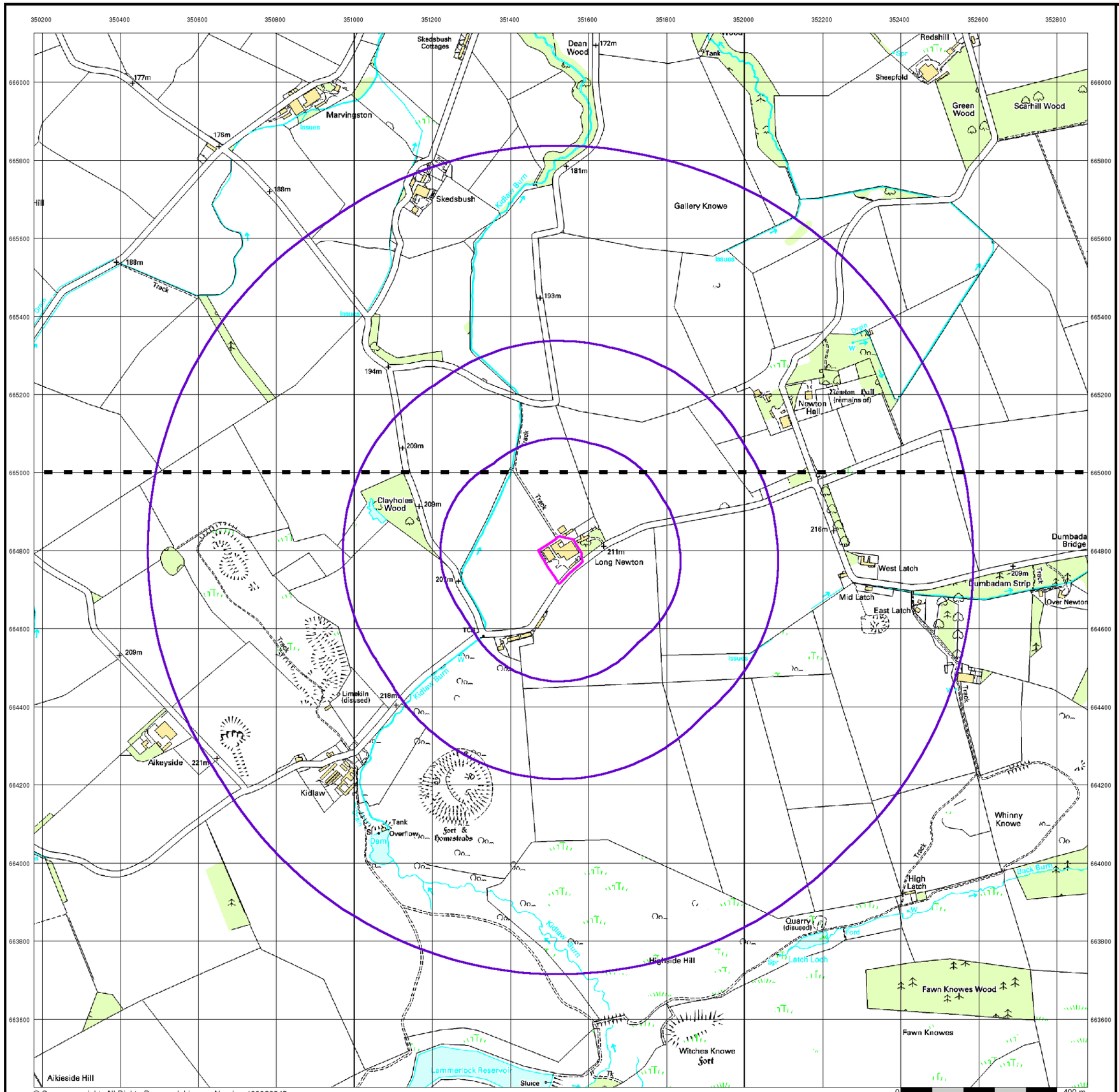



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## 10K Raster Mapping

**Published 1999**

**Source map scale - 1:10,000**

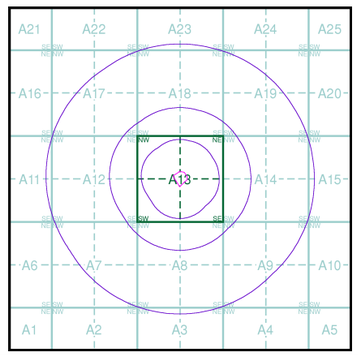
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

## Map Name(s) and Date(s)

NT56NW 1999

NT56SW 1999

## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
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## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

LANDMARK Information Group
Tel: 0870 850 6670
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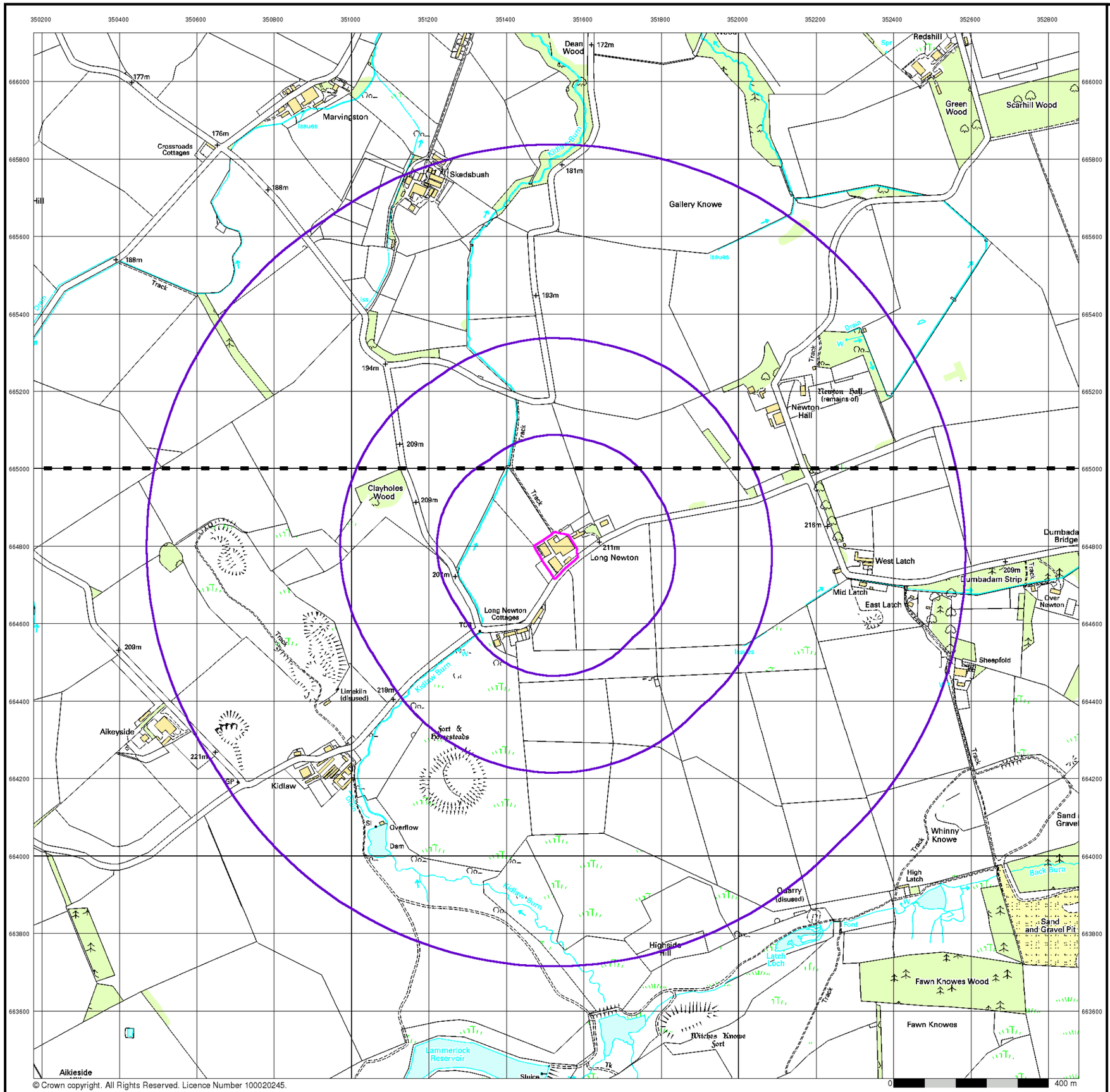
Web: www.envirocheck.co.uk

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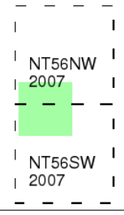
# 10K Raster Mapping

## Published 2007

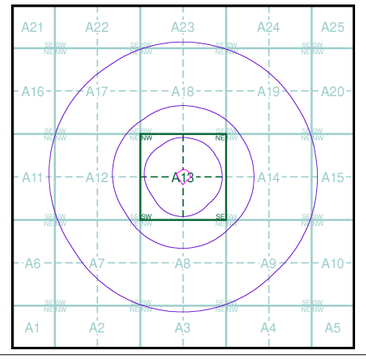
## Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

## Map Name(s) and Date(s)




## Historical Map - Slice A




## Order Details

| | |
|---|---|
| Order Number: | 23871877_1_1 |
| Customer Ref: | E8538 |
| National Grid Reference: | 351530, 664780 |
| Slice: | A |
| Site Area (Ha): | 0.81 |
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## Site Details

Longnewton Farmhouse, Haddington, EH41 4JW

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## Appendix C: BGS GeoReport

GeoReports

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

*Geological Assessment - Basic*



David R Murray & Associates
150 St John's Road
EDINBURGH
EH12 8AY

E8538

| Job No: | | |
|---|---|---|
| TCS | | SRM |
| WS | | AD |
| NH | ✓ | AMcG |
| RSW | | DM |
| SS | | HMcK |
| MW | | JMcG |
| CMcB | | AB |
| IF | | MDJ |
| LB | | JMcJ |

KC ✓

# Geological Assessment - Basic

This report is designed for users carrying out preliminary site assessments or at people who have a general interest in the geology around their property.

The report, prepared by BGS geologists, is based on analysis of records and maps held in the National Geoscience Data Centre (NGDC), and describes the rock types that might be encountered at the surface or at 'rockhead' beneath a site (meaning the rocks lying directly beneath the soil layer). It also briefly considers mining and quarrying hazard, and contains a listing of the key geoscience data sets held in the NGDC for the area around the site.

The report does not, however, consider *natural* geological hazards (in particular natural subsidence and radon), or hydrogeology at the site (these are described in the Standard or Detailed Geological Assessment reports, available separately).

Note that for some sites, the latest available records may be quite historical in nature, and while every effort is made to place the analysis in a modern geological context, it is possible in some cases that the detailed geology at a site may differ from that described.

**Client's Reference:** **E8538/SMcG/ACM**

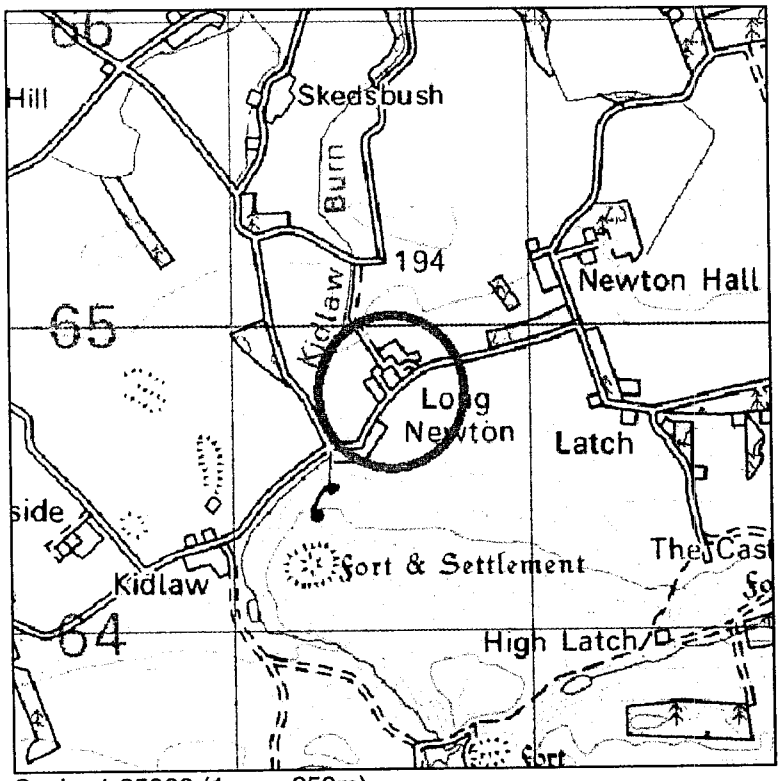
**MH Reference:** **EE07_0876**

**Site address:** **LONG NEWTON FARMHOUSE**
**HADDINGTON**

## Section 1: Location details

***Area centred at:*** *351537,664781*
***Radius of site area:*** *250 metres*

This report is based on the above location details. However, where the client has submitted a site plan, it is used for the assessment in Section 2.



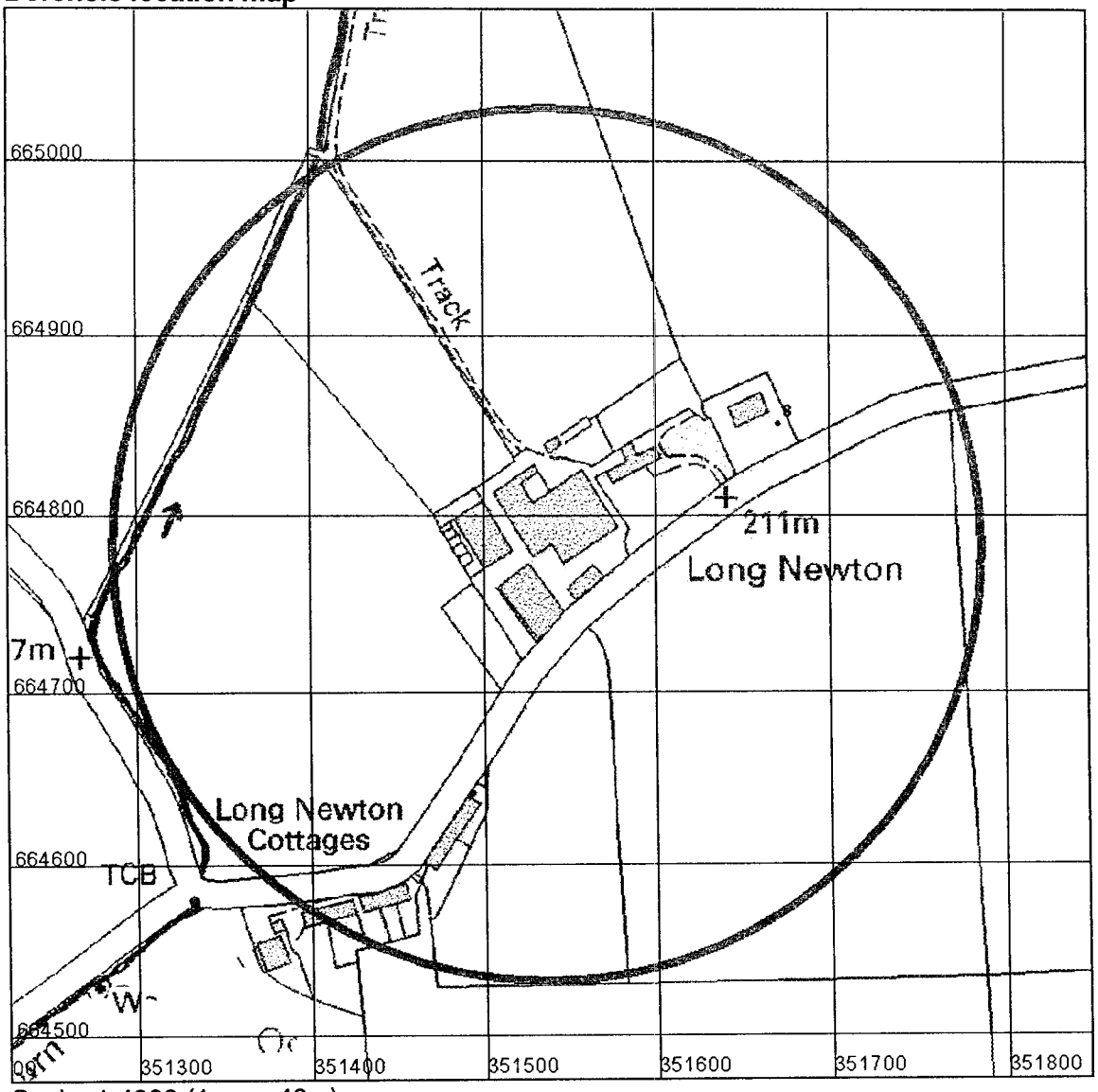

Scale: 1:25000 (1cm = 250m)

SITE LOCATION

## Section 3: List of geological data available in search area

This section lists the principal data sets held in the National Geoscience Data Centre that are relevant to the search area. Descriptions of the data sets and how to obtain copies of records from them are given in Sections 4 and 5. Users with access to computing facilities can make their own index searches using the BGS Internet Geoscience Data Index, accessible through the BGS website at www.bgs.ac.uk

### Borehole location map




Scale: 1:4000 (1cm = 40m)

**Borehole records**
(A blank Length field indicates the borehole is confidential or no depth has been recorded digitally.)
Total number of records: 1

The 'Office' column shows the office at which the records are held and from where copies can be obtained (see contact details later in the report). KW=Keyworth, MH & MW=Murchison House, WL=Wallingford, EX=Exeter

| Regno | Grid_reference | Name | Length | Office | SIR |
|---|---|---|---|---|---|
| NT56SW8 | NT 51670 64850 | LONG NEWTON PB | 3.00 | MH | |

**There are no Water Well Records in the selected area**

**National Grid geological maps (1:10,000 and 1:10,560 scale)**
Total number of records: 1

| Map | Type | Survey | Published |
|---|---|---|---|
| NT56SW | Solid and Drift | 1969 | |

**County Series geological maps (1:10,560 scale)**
Total number of records: 2

| Map | Type | Published |
|---|---|---|
| Haddingtonshire15FS | C | |
| Haddingtonshire15SW | CS | |

**New Series medium scale geological maps (1:50,000 and 1:63360 scale)**
Total number of records: 2

| Sheet | Title | Type | Survey | Published | Revision |
|---|---|---|---|---|---|
| 33W | Haddington | D | | 1978 | |
| 33W | Haddington | S | | 1983 | |

**Geological Memoirs**
Total number of records: 1

| Title | Date |
|---|---|
| Haddington district | 1985 |

**There are no records for Technical reports in the selected area**

## Section 4: Descriptions of BGS databases

*Note that this report is not a definitive listing of all data held in BGS.*

***Borehole Records and Water Wells***

Records of boreholes, shafts and wells from all forms of drilling and site investigation work. Some 900,000 records dating back over 200 years and ranging from one to several thousand metres deep. Currently some 50,000 new records are being added to the collection each year.

A small percentage of the borehole records are held commercial-in-confidence for various reasons and cannot be released without the written permission of the originator. If any of the records you need are listed as confidential apply in the normal way. BGS Enquiry Service staff will release the data where this is possible or provide you with the information needed to contact the originator.

Where records are held in more than one office, the contents may differ. Enquiries principally requiring water related information should contact the Wallingford or Edinburgh office.

***Geological maps***

- **National Grid maps (1:10,000 and 1:10560 scale)** - Since the 1960s the standard large-scale map for recording geological information has been the Ordnance Survey (OS) quarter sheet covering a 5km square area. The maps are supplied in different formats depending on their age and the method of reproduction used. Only the latest most up-to-date version is listed.

- **County Series map sheets (1:10,560 scale)** - Maps produced on OS County Series sheets between approximately 1860 and 1960. The list indicates distinct examples of maps from separate surveys or revisions. It is advisable to discuss your requirements before ordering or travelling to view these maps.

- **New Series medium scale maps (1:50,000 and 1:63360 scale)** - Maps at either scale covering the OS New Series one-inch map sheet areas used by BGS. Please note that the sheet numbering is not the same as used for current OS 1:50,000 topographic maps.

While there may be information relevant to your enquiry on older maps, you will generally want the latest edition, and National Grid maps will be preferred to County Series maps, and New Series to Old Series.

***Memoirs***

Explanatory sheet memoirs describing the geology of the areas covered by either the medium scale (1:50,000 and 1:63,360) map series.

***Technical reports***

The open file reports listed are mainly from the Onshore Geology Series. These include descriptions of the geology for the National Grid series geological sheets. Please note that the location details in the database are not yet complete so it is possible that not all the relevant reports available will be listed.

## Section 5: How to obtain data and how much it will cost

**Borehole Records** – ***contact BGS Enquiry Service (see end of section)***

Copies of borehole records can be supplied (order form enclosed) at the flat rate of £13 (+VAT) per log with a minimum charge £26 (+VAT). Normal first class postage within the UK is included. Next day recorded delivery or express parcel dispatch is available on request and charged at cost. Copies of documents can be forwarded by facsimile transmission at an additional charge of £0.50 (+VAT) per A4 sheet. Records with additional detailed geological information derived from BGS examination of borehole material may be charged at the current 'value-added' rate. If you have a need for data with particular geological characteristics, then please contact the enquiries office to discuss your requirements (additional charges may apply).

Alternatively you can make an appointment to visit the relevant enquiry office and examine the records

yourself. The Commercial User Ticket (see below) covers inspection of the borehole logs and includes access to a set of relevant documents for one unit area (typically a 5 km x 5 km area). A further charge of £19 (+ VAT) is due for each additional set examined. Data can be freely extracted from the records but any copies requested will be charged as above.

**Water wells – *contact BGS Enquiry Service***

Copies of records can be supplied (order form enclosed) at the flat rate of £13 (+VAT) per log with a minimum charge £26 (+VAT). Normal first class postage within the UK is included. Next day recorded delivery or express parcel dispatch is available on request and charged at cost. Copies of documents can be forwarded by facsimile transmission at an additional charge of £0.50 (+VAT) per A4 sheet.
If you have a need for data with particular hydrogeological characteristics, then please contact the relevant enquiries office (England and Wales =Wallingford, Scotland=Edinburgh) to discuss your requirements (additional charges may apply). Alternatively you can make an appointment to visit the relevant enquiry office and examine the records yourself.
Records for Scotland are held with the borehole records at our Edinburgh office the above Borehole Record charges cover them and apply.

**BGS Memoirs, maps and open file reports – *contact BGS Sales (details below)***

BGS Memoirs, maps and open file reports relevant to your area can be examined in the appropriate BGS Library. Copies can be ordered from our main Sales Desk: Sales Desk, British Geological Survey, Keyworth, Nottingham NG12 5GG Tel: 0115 936 3241, Fax: 0115 936 3488, E-mail: sales@bgs.ac.uk.

Sales Desks are also located in Edinburgh; Tel: 0131 650 0358, Fax: 0131 667 2785, E-mail: scotsales@bgs.ac.uk, and London; Tel: 020 7589 4090, Fax: 020 7584 8270, E-mail: bgslondon@bgs.ac.uk. BGS London also maintains a reference collection of all BGS publications.

**Commercial User Ticket – *contact BGS Enquiry Service***

A combined day ticket for commercial visitors to the National Geological Data Centre and the Library is £55 (+VAT) and there is a £33 (+VAT) day ticket for visitors who only wish to use the Library. Frequent visitors can purchase an annual subscription at £275 (+VAT) for access to the NGDC and the Library or £155 (+VAT) for use of the Library only. Further details can be provided on request.

**BGS ENQUIRY SERVICE Contact Details:**

***Keyworth (KW) Office***
*For Borehole and other records (excluding water well records & hydrogeological data) in England & Wales (excluding Northern England, and Devon & Cornwall):*
Records & Data Enquiries
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Tel: 0115 9363143
Fax: 01159 363276

***Murchison House (MH or MW) Office:***
*For water well records and hydrogeological data for Scotland, and all other records in Scotland & Northern England:*
Records & Data Enquiries
Murchison House
West Mains Road
Edinburgh
EH9 3LA
Tel: 0131 650 0282
Fax: 0131 650 0252
Email: boreholesnorth@bgs.ac.uk

## Section 6: More detailed geological reports available from BGS

This report forms part of the GeoReports range offered by the BGS Enquiry Service, including reports describing site geology, hydrogeology and geological hazards. For details on these please contact:

BGS Central Enquiries Desk
British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham NG12 5GG
Tel: 0115 936 3143
Fax: 0115 936 3276
Email: enquiries@bgs.ac.uk

Or visit the GeoReports online shop at www.bgs.ac.uk/georeports

## Section 7: Terms and Conditions

**General Terms & Conditions**

This report is supplied in accordance with the GeoReports Terms & Conditions available on the BGS website at www.bgs.ac.uk/georeports and also available from the BGS Central Enquiries Desk at the above address.

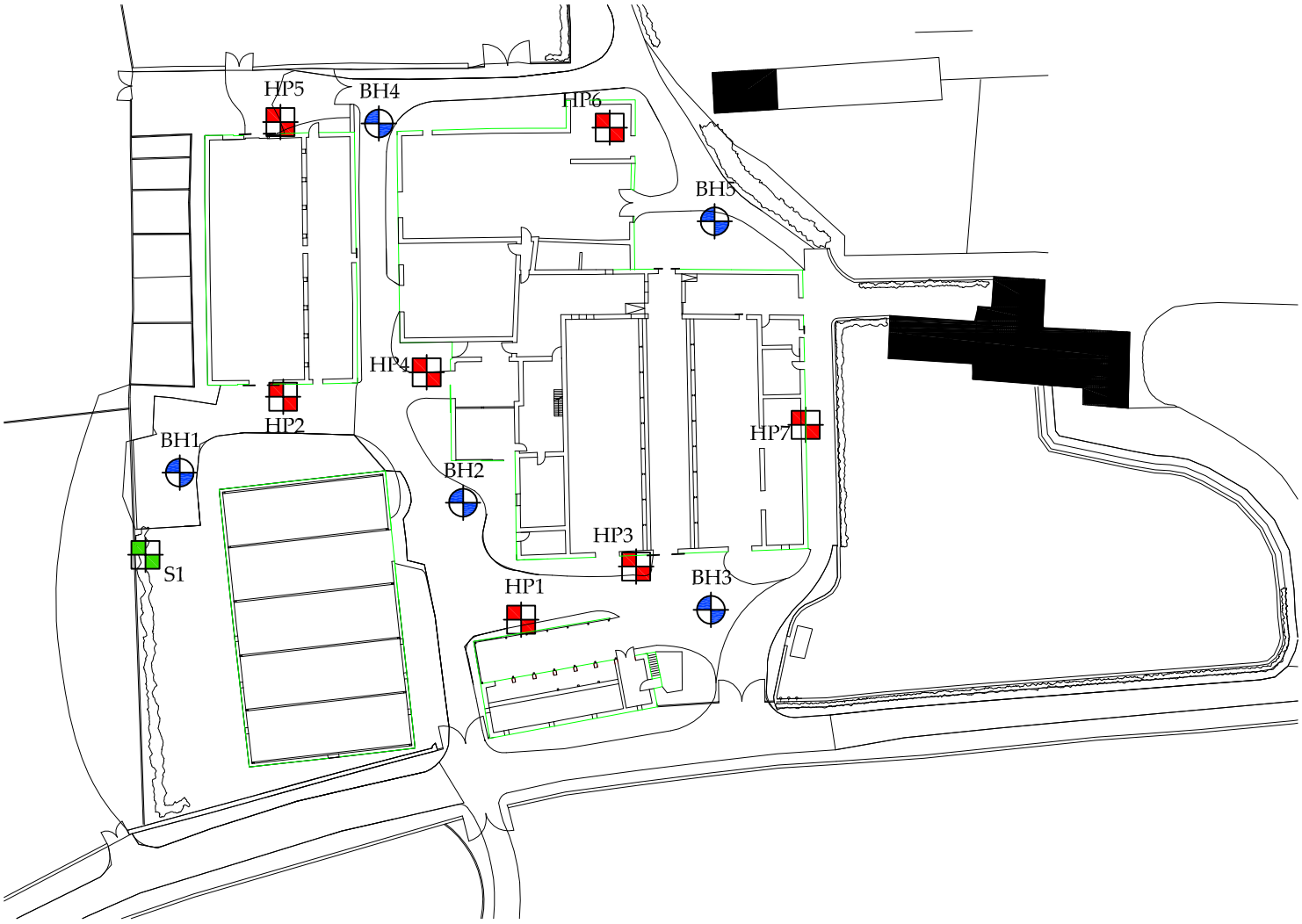
**Important notes about this report**

- The data, information and related records supplied in this report by BGS can only be indicative and should not be taken as a substitute for specialist interpretations, professional advice and/or detailed site investigations. You must seek professional advice before making technical interpretations on the basis of the materials provided.
- Geological observations and interpretations are made according to the prevailing understanding of the subject at the time. The quality of such observations and interpretations may be affected by the availability of new data, by subsequent advances in knowledge, improved methods of interpretation, and better access to sampling locations.
- Raw data may have been transcribed from analogue to digital format, or may have been acquired by means of automated measuring techniques. Although such processes are subjected to quality control to ensure reliability where possible, some raw data may have been processed without human intervention and may in consequence contain undetected errors.
- Detail, which is clearly defined and accurately depicted on large-scale maps may be lost when small-scale maps are derived from them.
- Although samples and records are maintained with all reasonable care, there may be some deterioration in the long term.
- The most appropriate techniques for copying original records are used, but there may be some loss of detail and dimensional distortion when such records are copied.
- Data may be compiled from the disparate sources of information at BGS's disposal, including material donated to BGS by third parties, and may not originally have been subject to any verification or other quality control process.
- Data, information and related records, which have been donated to BGS, have been produced for a specific purpose, and that may affect the type and completeness of the data recorded and any interpretation. The nature and purpose of data collection, and the age of the resultant material may render it unsuitable for certain applications/uses. You must verify the suitability of the material for your intended usage.
- If a report or other output is produced for you on the basis of data you have provided to BGS, or your own data input into a BGS system, please do not rely on it as a source of information about other areas or geological features, as the report may omit important details.
- The topography shown on any map extracts is based on the latest OS mapping and is not necessarily the same as that used in the original compilation of the BGS geological map, and to which the geological linework available at that time was fitted.

**Report issued by:**

**BGS Enquiry Service**

## Appendix D: Drawing No. E11602/0101 Site Investigation Location Plan




BH1 DENOTES APPROXIMATE LOCATION OF BOREHOLES (5)

HP1 DENOTES APPROXIMATE LOCATION OF HAND DUG PITS (7)

S1 DENOTES APPROXIMATE LOCATION SURFACE SAMPLE (1)

Client
MR & MRS WHITEFORD

Project
PROPOSED DEVELOPMENT AT LONGNEWTON FARM, GIFFORD

DAVID R. MURRAY and ASSOCIATES

DRM Consulting Engineers

David R Murray and Associates
A limited liability partnership
registered in Scotland (SO 300605).
The registered office is at 150 st John's Road,
Edinburgh EH12 8AY

150 St John's Road
Edinburgh EH12 8AY
Tel. 0131 334 0765
Fax. 0131 316 4540
E-Mail drme@davidrmurray.co.uk X

10 Eyre Place
Edinburgh EH3 5EP
Tel. 0131 556 5155
Fax. 0131 556 9147
E-Mail drmc@davidrmurray.co.uk

20 Viewfield Terrace
Dunfermline KY12 7HZ
Tel. 01383 726075
Fax. 01383 730605
E-Mail drmd@davidrmurray.co.uk

Title
SITE INVESTIGATION LOCATION PLAN

| | | | |
|---|---|---|---|
| Scale | | | |
| Drawn RM | Date 23/07/2018 | Drawing No. E11602/0101 | Rev. .1 |
| Chkd | Date | | |
| Appd | Date | | |

# Appendix E: Factual Site Investigation Information

SKF Ltd
Ground Investigation & Site Surveys

*SKF Ltd,* Unit 10, Haylie Neuk, Largs, Ayrshire, KA30 8JD
TEL: 01475 672409 or 07795 493892 FAX: 01475 672409

# BOREHOLE NO. BH01

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Boring Diameter:** 115mm
**Co-ordinates** E

**Date:** 17/01/2008
**Equipment:** COMPETITOR 130
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Loose* brown sandy fine to coarse angular gravel with occasional cobbles. | | 0.30 | | | | |
| Soft to firm brown sandy slightly gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. | | 0.70 | | J 0.50 | | |
| Loose becoming medium dense light greyish brown and brown slightly clayey fine to coarse SAND. From 1.80m becoming medium dense with traces of gravel and occasional pockets of stiff sandy gravelly clay. | | 2.60 | | J 1.00<br>SPT 1.00-1.45<br>U86 1.00-2.00<br>J 2.00<br>SPT 2.00-2.45<br>U86 2.00-3.00 | <br>1,2,2,2,1,2<br>112<br><br>5,6,5,8,7,6<br>144 | |
| Recovered as reddish brown sandy angular gravel of SILTSTONE. Slightly clayey at top. Presumed weathered bedrock. | | 3.80 | | J 3.00<br>SPT 3.00-3.45<br>SPT 3.50-3.80 | <br>12,9,10,10,12,8<br>12,15,14,41 | |

**Water Strikes**
Strike: 0.30 Flow: Slow

**Details**
Casing: 2.00 Final Depth: 3.80

Inspection Pit: 0.50 x 0.50 x 1.00
Breaking Out / Coring:
Installation: Standpipe 50mm diameter installed to 2.80m.
Notes:

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# BOREHOLE NO. BH02

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Boring Diameter:** 115mm
**Co-ordinates** E

**Date:** 17/01/2008
**Equipment:** COMPETITOR 130
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows<br>U Blows<br>Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Loose* brown sandy fine to coarse angular gravel with occasional cobbles. Occasional roots and rough grass at top. | | 0.20 | | | | |
| POSSIBLE MADE GROUND: Loose* brown and orange brown sandy fine to coarse angular to sub rounded gravel with occasional cobbles. | | 0.60 | | J 0.50 | | |
| Firm to stiff and stiff reddish brown sandy gravelly CLAY with occasional bands of very clayey sand and gravel. | | 1.80 | | J 1.00<br>SPT 1.00-1.45<br>U86 1.00-2.00 | <br>5,5,5,6,2,2<br>138 | |
| Recovered as reddish brown and red sandy angular gravel of SANDSTONE. Slightly clayey at top. Presumed weathered bedrock. | | 2.65 | | J 2.00<br>SPT 2.00-2.45<br>SPT 2.50-2.65 | <br>14,22,26,18,21,18<br>29,40 | |

**Water Strikes**
Strike: 0.00 Flow: Slow

**Details**
Casing: 2.00 Final Depth: 2.65

Inspection Pit: 0.50 x 0.50 x 1.00
Breaking Out / Coring:
Installation:
Notes: Borehole backfilled on completion.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# BOREHOLE NO. BH03

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Boring Diameter:** 115mm
**Co-ordinates** E

**Date:** 17/01/2008
**Equipment:** COMPETITOR 130
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows<br>U Blows<br>Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Dense* brown slightly silty sandy angular and sub angular gravel with occasional cobbles. Occasional fragments of clay tile, brick and concrete. | | 0.60 | | J 0.50 | | |
| MADE GROUND: Dense* brown and reddish brown clayey sandy gravel. Occasional dark brown pockets with occasional fragments of brick. Traces of roots. Gravel fine to coarse and angular to sub rounded. | | 1.20 | | J 1.00<br>SPT 1.00-1.45<br>U86 1.00-2.00 | <br>22,8,8,5,5,5<br>122 | |
| Medium dense reddish brown silty SAND and GRAVEL. Locally light grey. Gravel fine to coarse and angular and sub angular. Occasional pockets of stiff sandy gravelly clay at depth. At 2.80 hard obstruction, possible sandstone bedrock. | | 2.82 | | J 2.00<br>SPT 2.00-2.45<br>U66(B) 2.00-2.80<br>SPT 2.80-2.82 | <br>6,2,2,3,4,3<br>88<br>36/20mm | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: 2.00 Final Depth: 2.82

Inspection Pit: 0.50 x 0.50 x 1.00
Breaking Out / Coring:
Installation:
Notes: Borehole backfilled on completion.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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TEL: 01475 672409 or 07795 493892 FAX: 01475 672409

# BOREHOLE NO. BH04

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Boring Diameter:** 115mm
**Co-ordinates** E

**Date:** 17/01/2008
**Equipment:** COMPETITOR 130
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil / turf and roots with occasional fragments of clay tile. | | 0.30 | | | | |
| Loose brown slightly silty slightly gravelly fine to coarse SAND. Gravel fine to coarse and angular to sub rounded. Slightly clayey at depth. | | 1.60 | | J 0.50<br>J 1.00<br>SPT 1.00-1.45<br>U86 1.00-2.00 | <br><br>1,2,2,3,3,2<br>104 | |
| Loose* becoming medium dense reddish brown slightly clayey gravelly fine to coarse SAND. Gravel fine to coarse and angular and sub angular. | | 2.30 | | J 2.00<br>SPT 2.00-2.45<br>U86 2.00-3.00 | <br>3,3,2,5,10,9<br>129 | |
| Recovered as reddish brown sandy angular gravel of SANDSTONE. Slightly clayey at top. Crumbles into sand. Presumed weathered bedrock. | | 3.15 | | J 3.00<br>SPT 3.00-3.15 | <br>28,31 | |

**Water Strikes**
Strike: 0.80 Flow: Slow

**Details**
Casing: 2.00 Final Depth: 3.15

Inspection Pit: 0.50 x 0.50 x 1.00
Breaking Out / Coring:
Installation: Standpipe 50mm diameter installed to 2.80m.
Notes:

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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Ground Investigation & Site Surveys

*SKF Ltd,* **Unit 10, Haylie Neuk, Largs, Ayrshire, KA30 8JD**
**TEL: 01475 672409 or 07795 493892 FAX: 01475 672409**

# BOREHOLE NO. BH05

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Boring Diameter:** 115mm
**Co-ordinates** E

**Date:** 17/01/2008
**Equipment:** COMPETITOR 130
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil / turf and roots with occasional fragments of clay tile. | | 0.30 | | | | |
| Loose becoming medium dense reddish brown silty gravelly fine to coarse SAND. Gravel fine to coarse and angular to sub rounded. Occasional sandstone cobbles. More clayey at depth. From 1.80m locally stiff sandy gravelly clay. | | 2.10 | | J 0.50<br>J 1.00<br>SPT 1.00-1.45<br>U86 1.00-2.00<br>J 2.00<br>SPT 2.00-2.45 | <br><br>8,5,6,4,3,3<br>122<br><br>10,7,10,10,14,18 | |
| Recovered as reddish brown and red sandy angular gravel of SANDSTONE. Slightly clayey at top. Crumbles into sand. Presumed weathered bedrock. | | 2.65 | | SPT 2.50-2.65 | 21,36 | |

**Water Strikes**
Strike: 0.80 Flow: Slow

**Details**
Casing: 2.00 Final Depth: 2.65

Inspection Pit: 0.50 x 0.50 x 1.00
Breaking Out / Coring:
Installation: Standpipe 50mm diameter installed to 2.00m.
Notes:

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP01

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.40 X 0.40
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Loose* brown very gravelly fine to coarse sand with occasional cobbles. Gravel fine to coarse and angular to sub rounded. | | 0.45 | | D 0.30 | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.45

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP02

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.50 X 0.40
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil/roots. | | 0.10 | | | | |
| MADE GROUND: Loose* brown gravelly slightly clayey fine to coarse sand with fragments of clay pipe, brick, roots and occasional cobbles. Gravel fine to coarse and angular to sub rounded. Becoming more gravelly and clayey at depth. | | 0.50 | | D 0.30<br>D 0.50 | | |
| Soft to firm light brown mottled orange brown sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. | | 0.80 | | | | |

**Water Strikes**
Strike: 0.60 Flow: Moderate

**Details**
Casing: Final Depth: 0.80

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Unable to expose foundation due to water ingress.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

*SKF Ltd,* **Unit 10, Haylie Neuk, Largs, Ayrshire, KA30 8JD**
**TEL: 01475 672409 or 07795 493892 FAX: 01475 672409**

# TRIAL PIT NO. HP03

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.40 X 0.50
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil/roots with brick fragments. | | 0.34 | | D 0.20 | | |
| Loose* reddish brown sandy GRAVEL with occasional cobbles. Gravel fine to coarse and angular to sub rounded. | | 0.40 | | D 0.35 | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.40

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP04

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.70 X 0.50
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Loose* brown clayey slightly gravelly fine to coarse sand intermixed with fragments of clay pipe, roots/rootlets. Occasional cobbles. More clayey at depth. | | 0.58 | | D 0.20 | | |
| Soft to firm reddish brown sandy slightly gravelly CLAY with occasional cobbles and fine roots. Gravel fine to coarse and angular to sub rounded. | | 0.80 | | D 0.60 | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.80

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP05

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.50 X 0.40
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil/roots. | | 0.10 | | | | |
| MADE GROUND: Loose * brown gravelly slightly clayey fine to coarse sand with fragments of clay pipe, roots and occasional cobbles. Gravel fine to coarse and angular to sub rounded. Becoming more gravelly at depth. | | 0.70 | | D 0.20<br>D 0.50 | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.70

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP06

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.50 X 0.50
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Topsoil/roots with occasional fragment of clay tile. | | 0.10 | | | | |
| MADE GROUND: Weak concrete (0.10-0.15). | | | | | | |
| MADE GROUND: Loose * light brown very sandy slightly clayey fine to coarse angular to sub rounded gravel. | | 0.25 | | D 0.20 | | |
| MADE GROUND: Soft to firm brown slightly sandy gravelly clay with occasional cobbles. Gravel fine to coarse angular to sub rounded. | | 0.50 | | D 0.40<br>D 0.50 | | |
| Firm to stiff reddish brown slightly sandy gravelly CLAY with occasional cobbles. Gravel fine to coarse angular to sub rounded. | | 0.55 | | | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.55

Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

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# TRIAL PIT NO. HP07

**Contract:** LONGNEWTON, HADDINGTON
**Contract No:** 0535
**Status:** PRELIM

**Client:** DAVID R MURRAY & ASSOCIATES
**Pit Dimensions:** 0.50 X 0.50
**Co-ordinates** E

**Date:** 30/01/2008
**Equipment:** HAND DUG
N

| Description of Strata | Legend | Depth | Level | Sampling | SPT Blows U Blows Hand Vane | Pipe |
|---|---|---|---|---|---|---|
| Ground Surface | | | | | | |
| MADE GROUND: Tarmac (GL - 0.05). | | | | | | |
| MADE GROUND: Soft to firm brown sandy gravelly clay intermixed with fragments of tarmac at top. Gravel fine to coarse and angular to sub rounded. At 0.40 thin band of soft light brown sandy gravelly clay. | | 0.55 | | D 0.20 | | |
| Soft to firm reddish brown sandy very gravelly CLAY with occasional cobbles. Gravel fine to coarse and angular to sub rounded. | | 0.85 | | D 0.60 | | |

**Water Strikes**
Strike: Dry Flow:

**Details**
Casing: Final Depth: 0.85

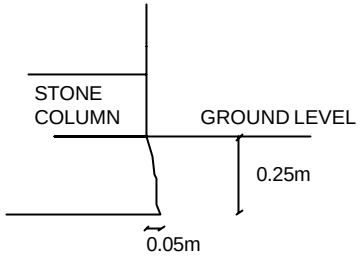
Stability: Stable
Shoring: None
Backfilling: Backfilled with arisings.
Notes: Foundation exposed.

Logged by: SKF Checked by: SKF

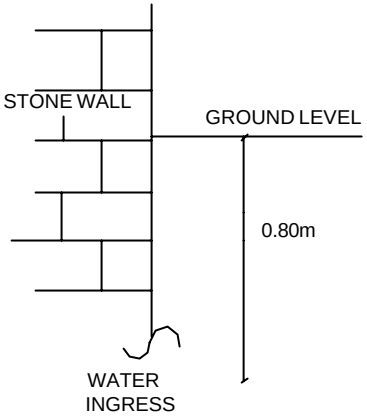
**SYMBOLS KEY**

| | | | |
|---|---|---|---|
| B | - BULK | NR | - NO RECOVERY |
| U | - UNDISTURBED | * | - ESTIMATED DENSITY |
| D | - SMALL DISTURBED | | |
| J | - JAR | | |
| V | - VIAL | | |
| W | - WATER | | |

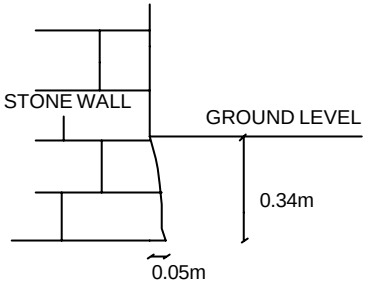
## HP01



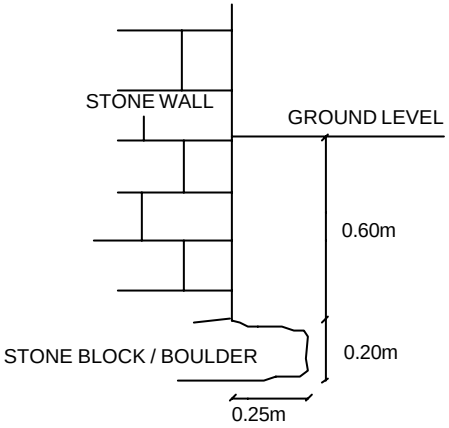

## HP02



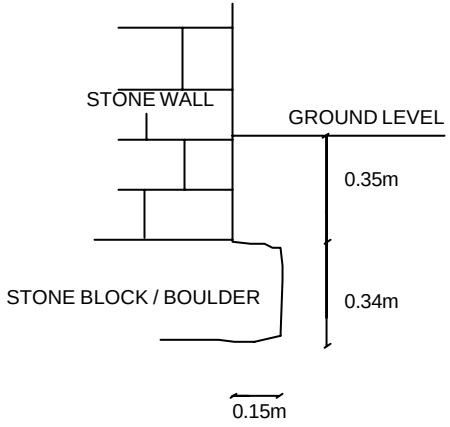

## HP03



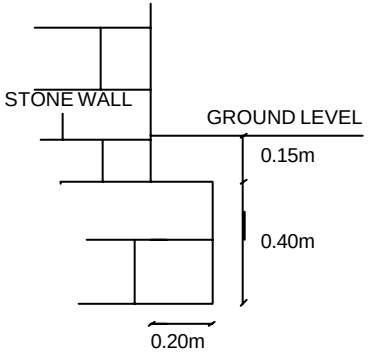

## HP04



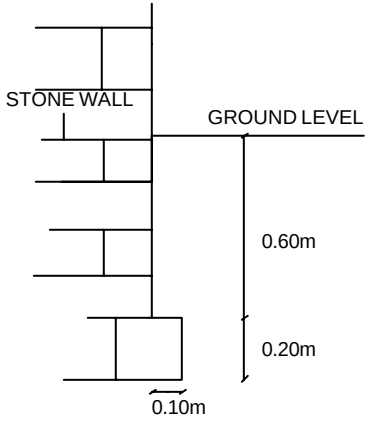

## HP05




## HP06




## HP07





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**Fax: 01475 672409**
**VAT REG NO. 839 1061 30**


| | | |
|---|---|---|
| LONGNEWTON STEADING | | CLIENT: DAVID R MURRAY & ASSOCIATES |
| DRAWN BY: SKF | DATE: 26/02/2008 | FOUNDATION SKETCHES |
| JOB NO: 0535 | DRAWING NO: 0535/1 | |

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# NATURAL MOISTURE CONTENT

Longnewton

Client:

Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990:Part 2:Method 3.2

| Sample Identification | | | Moisture Content (%) |
|---|---|---|---|
| 1 | 132161 | 1.00 m | 22 |
| 2 | 132156 | 1.00 m | 13 |
| 3 | 132157 | 1.00 m | 15 |

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# PLASTICITY CHART
## Summary of Liquid & Plastic Limits

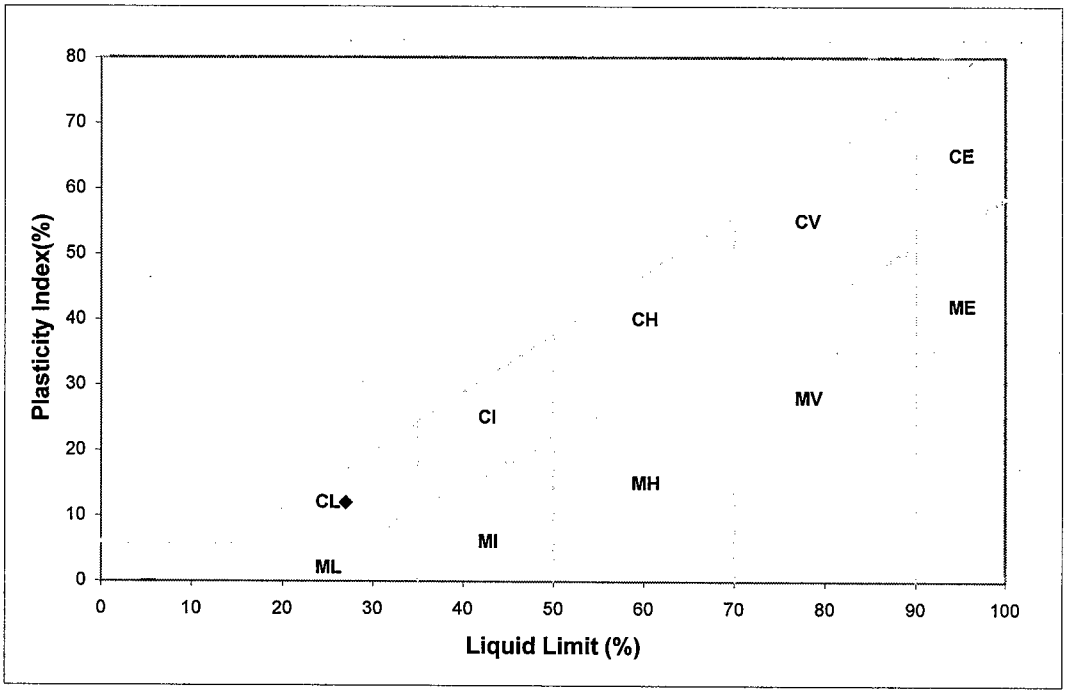
**BS1377:Part 2:1990, clauses 3.2, 4 & 5**
**Chart in accordance with BS5930:1999, fig.18**

## Longnewton

Client:

Job No. 3165

Consultant: SKF Limited




| BH/TP | Sample | Depth (m) | MC% | LL% | PL% | PI% | %<425µm | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 132161 | 1.00 | 22.0 | NP | NP | | 87.0 | |
| 2 | 132156 | 1.00 | 13.0 | 27 | 15 | 12 | 13.0 | |

NP denotes specimen is non-plastic.

ritchies

# PARTICLE SIZE DISTRIBUTION

**Borehole No**
**1**
**Test Results**

## Longnewton

Client:

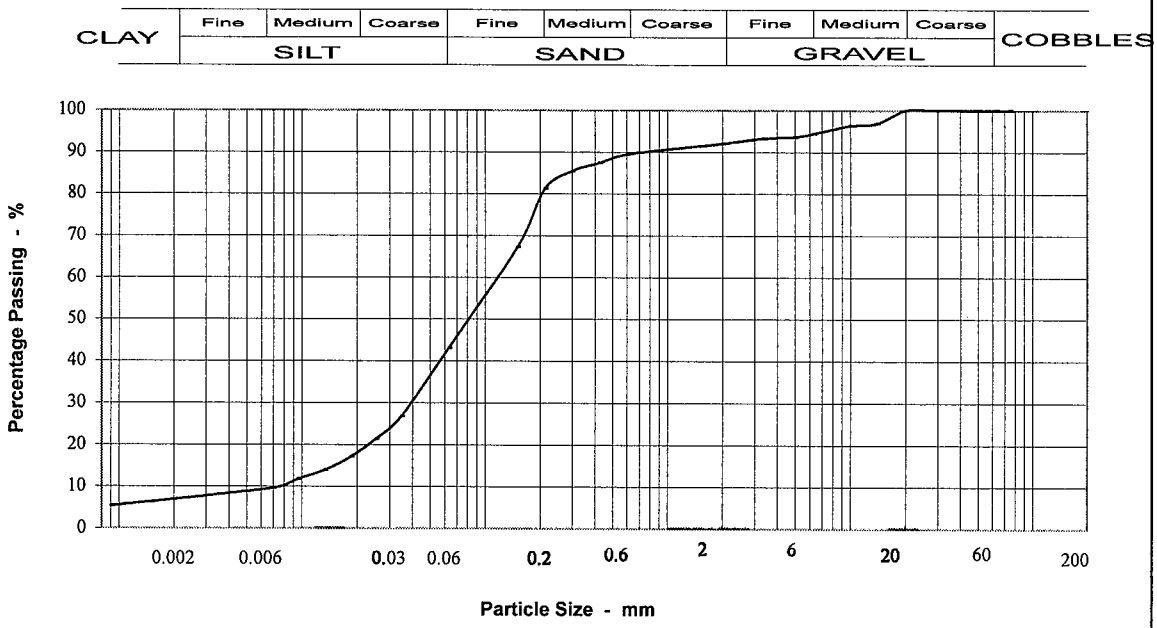
Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990 Part 2 Clause 9.2 & 9.5

Sample Number 132161
Depth (m) : 1.00

Initial Total Dry Weight: 1567.00 g




| SIEVING | |
|---|---|
| BS Sieve Size mm | Cumulative Percentage Passing |
| 75.0 | 100 |
| 63.0 | 100 |
| 50.0 | 100 |
| 37.5 | 100 |
| 28.0 | 100 |
| 20.0 | 100 |
| 14.0 | 97 |
| 10.0 | 96 |
| 6.30 | 94 |
| 5.00 | 94 |
| 3.35 | 93 |
| 2.00 | 92 |
| 1.18 | 91 |
| 0.600 | 89 |
| 0.425 | 87 |
| 0.300 | 85 |
| 0.212 | 81 |
| 0.150 | 67 |
| 0.063 | 43 |

**SEDIMENTATION**

| Particle Size mm | Corrected Percentage Passing |
|---|---|
| 0.035 | 27 |
| 0.025 | 21 |
| 0.019 | 17 |
| 0.013 | 14 |
| 0.010 | 12 |
| 0.007 | 10 |
| 0.001 | 5 |

Sample passing BS 0.063mm sieve washed and/or collected in pan
No Pretreatment
Uniformity Coefficient = 16.7

| % CLAY | %SILT | %SAND | %GRAVEL |
|---|---|---|---|
| 6 | 35 | 51 | 8 |

| D10 | D30 | D60 | D100 |
|---|---|---|---|
| 0.0074 | 0.040 | 0.12 | 20.00 |

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# PARTICLE SIZE DISTRIBUTION

**Borehole No 2 Test Results**

## Longnewton

Client:

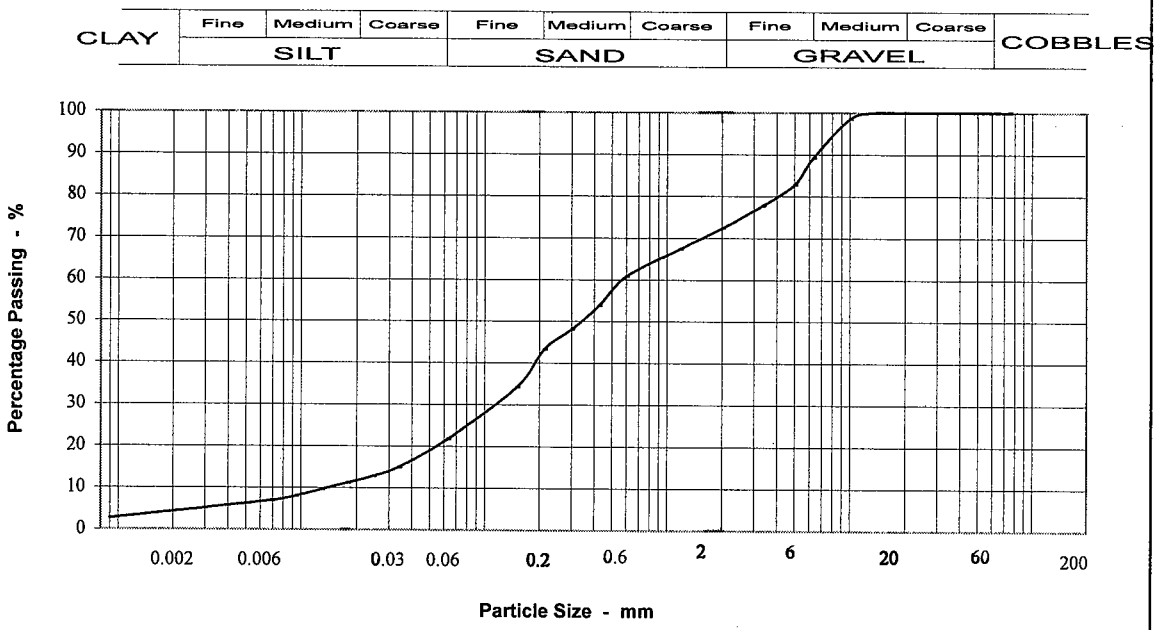
Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990 Part 2 Clause 9.2 & 9.5

Sample Number 132162
Depth (m) : 2.00

Initial Total Dry Weight: 520.00 g




| SIEVING | |
|---|---|
| BS Sieve Size mm | Cumulative Percentage Passing |
| 75.0 | 100 |
| 63.0 | 100 |
| 50.0 | 100 |
| 37.5 | 100 |
| 28.0 | 100 |
| 20.0 | 100 |
| 14.0 | 100 |
| 10.0 | 98 |
| 6.30 | 89 |
| 5.00 | 83 |
| 3.35 | 78 |
| 2.00 | 72 |
| 1.18 | 67 |
| 0.600 | 61 |
| 0.425 | 54 |
| 0.300 | 48 |
| 0.212 | 43 |
| 0.150 | 34 |
| 0.063 | 22 |

| SEDIMENTATION | |
|---|---|
| Particle Size mm | Corrected Percentage Passing |
| 0.034 | 15 |
| 0.025 | 13 |
| 0.018 | 11 |
| 0.013 | 10 |
| 0.009 | 8 |
| 0.007 | 7 |
| 0.001 | 3 |

Sample passing BS 0.063mm sieve washed and/or collected in pan
No Pretreatment
Uniformity Coefficient = 41.4

| % CLAY | %SILT | %SAND | %GRAVEL |
|---|---|---|---|
| 3 | 18 | 51 | 28 |

| D10 | D30 | D60 | D100 |
|---|---|---|---|
| 0.0140 | 0.121 | 0.58 | 14.00 |

ritchies

# PARTICLE SIZE DISTRIBUTION

**Borehole No 3 Test Results**

## Longnewton

Client:

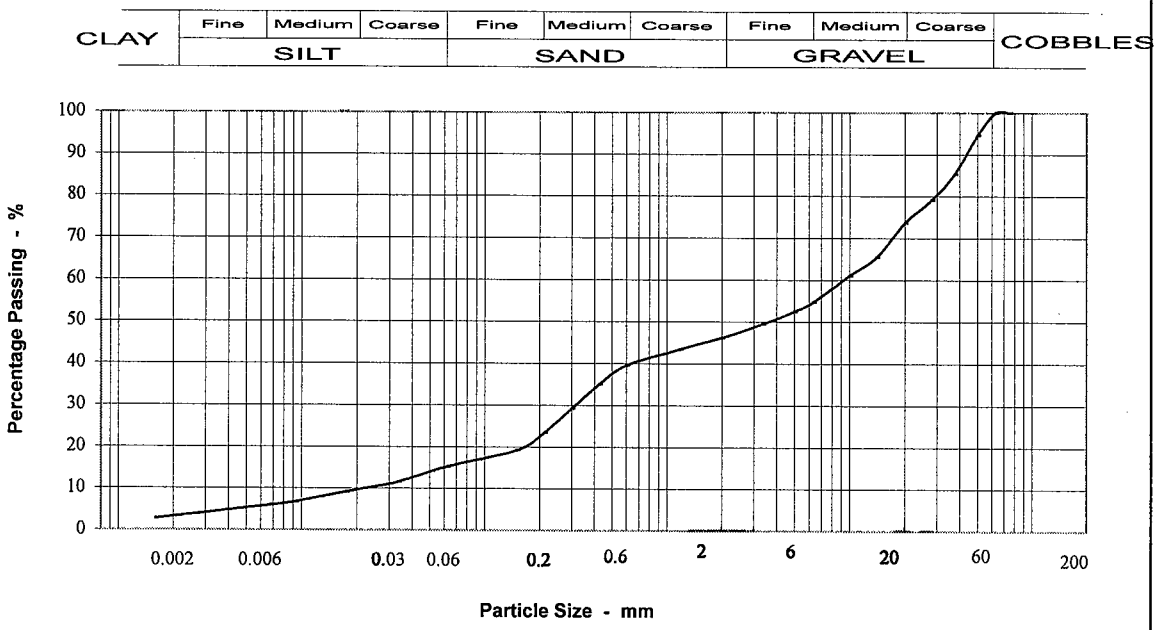
Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990 Part 2 Clause 9.2 & 9.5

Sample Number 132157
Depth (m) : 1.00

Initial Total Dry Weight: 7240.00 g




| SIEVING | |
|---|---|
| BS Sieve Size mm | Cumulative Percentage Passing |
| 75.0 | 100 |
| 63.0 | 100 |
| 50.0 | 95 |
| 37.5 | 85 |
| 28.0 | 79 |
| 20.0 | 74 |
| 14.0 | 65 |
| 10.0 | 61 |
| 6.30 | 55 |
| 5.00 | 52 |
| 3.35 | 50 |
| 2.00 | 46 |
| 1.18 | 43 |
| 0.600 | 40 |
| 0.425 | 35 |
| 0.300 | 29 |
| 0.212 | 23 |
| 0.150 | 19 |
| 0.063 | 15 |

**SEDIMENTATION**

| Particle Size mm | Corrected Percentage Passing |
|---|---|
| 0.034 | 12 |
| 0.024 | 10 |
| 0.018 | 9 |
| 0.013 | 8 |
| 0.009 | 7 |
| 0.007 | 6 |
| 0.002 | 3 |

Sample passing BS 0.063mm sieve washed and/or collected in pan
No Pretreatment
Uniformity Coefficient = 419.5

| % CLAY | %SILT | %SAND | %GRAVEL |
|---|---|---|---|
| 3 | 12 | 31 | 53 |

| D10 | D30 | D60 | D100 |
|---|---|---|---|
| 0.0223 | 0.317 | 9.37 | 63.00 |

ritchies **PARTICLE SIZE DISTRIBUTION**

**Borehole No 4 Test Results**

## Longnewton

Client:

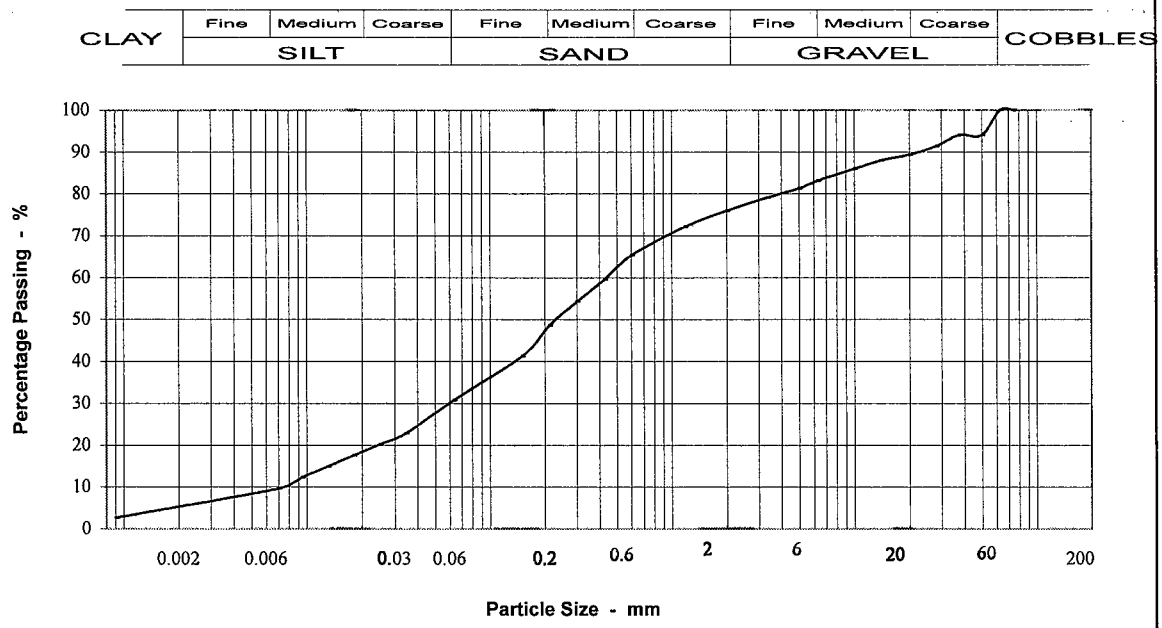
Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990 Part 2 Clause 9.2 & 9.5

Sample Number 132158
Depth (m) : 1.00

Initial Total Dry Weight: 2690.00 g




| SIEVING | | SEDIMENTATION | |
|---|---|---|---|
| BS Sieve Size mm | Cumulative Percentage Passing | Particle Size mm | Corrected Percentage Passing |
| 75.0 | 100 | 0.035 | 23 |
| 63.0 | 100 | 0.025 | 20 |
| 50.0 | 94 | 0.018 | 18 |
| 37.5 | 94 | 0.013 | 15 |
| 28.0 | 91 | 0.009 | 12 |
| 20.0 | 89 | 0.007 | 10 |
| 14.0 | 88 | 0.001 | 3 |
| 10.0 | 86 | | |
| 6.30 | 83 | | |
| 5.00 | 81 | | |
| 3.35 | 79 | | |
| 2.00 | 76 | | |
| 1.18 | 72 | | |
| 0.600 | 65 | | |
| 0.425 | 60 | | |
| 0.300 | 54 | | |
| 0.212 | 49 | | |
| 0.150 | 41 | | |
| 0.063 | 31 | | |

Sample passing BS 0.063mm sieve washed and/or collected in pan
No Pretreatment
Uniformity Coefficient = 60.2

| % CLAY | %SILT | %SAND | %GRAVEL |
|---|---|---|---|
| 4 | 26 | 46 | 23 |

| D10 | D30 | D60 | D100 |
|---|---|---|---|
| 0.0073 | 0.060 | 0.44 | 63.00 |

ritchies **PARTICLE SIZE DISTRIBUTION**

**Borehole No 5 Test Results**

## Longnewton

Client:

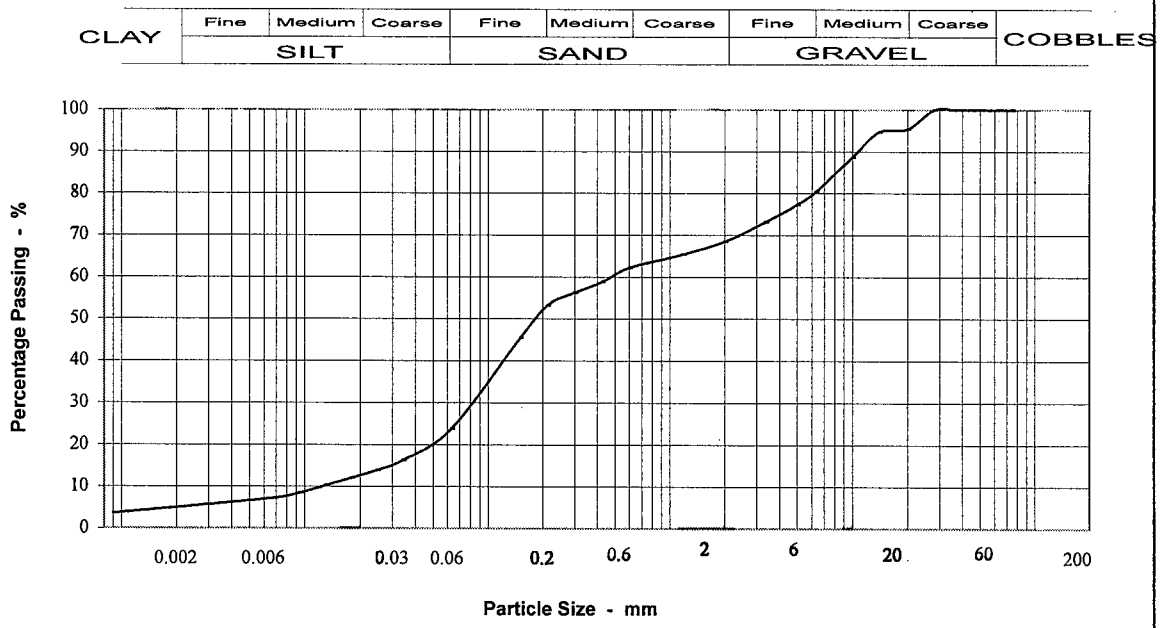
Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990 Part 2 Clause 9.2 & 9.5

Sample Number 132159a
Depth (m) : 1.00

Initial Total Dry Weight: 3455.00 g




| SIEVING | | SEDIMENTATION | |
|---|---|---|---|
| BS Sieve Size mm | Cumulative Percentage Passing | Particle Size mm | Corrected Percentage Passing |
| 75.0 | 100 | 0.034 | 16 |
| 63.0 | 100 | 0.025 | 14 |
| 50.0 | 100 | 0.018 | 12 |
| 37.5 | 100 | 0.013 | 10 |
| 28.0 | 100 | 0.009 | 8 |
| 20.0 | 95 | 0.007 | 7 |
| 14.0 | 95 | 0.001 | 4 |
| 10.0 | 89 | | |
| 6.30 | 80 | | |
| 5.00 | 77 | | |
| 3.35 | 73 | | |
| 2.00 | 68 | | |
| 1.18 | 65 | | |
| 0.600 | 62 | | |
| 0.425 | 59 | | |
| 0.300 | 56 | | |
| 0.212 | 53 | | |
| 0.150 | 45 | | |
| 0.063 | 24 | | |

Sample passing BS 0.063mm sieve washed and/or collected in pan
No Pretreatment
Uniformity Coefficient = 39.0

| % CLAY | %SILT | %SAND | %GRAVEL |
|---|---|---|---|
| 4 | 19 | 45 | 32 |

| D10 | D30 | D60 | D100 |
|---|---|---|---|
| 0.0124 | 0.088 | 0.49 | 28.00 |

ritchies

# CALIFORNIA BEARING RATIO

## Longnewton

Client:

Job No: 3165

Consultant: SKF Limited

Test Method - BS 1377:1990:Part 4:Method 7

| Sample Identification | | | | Moisture Content (%) | Density Mg/m$^3$ | | CBR % | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Bulk | Dry | Top | Base | Mean |
| 3 | 132157 | 1.00 | m | 15 | 2.2 | 1.91 | 7 | 12.6 | 10 |

# CALIFORNIA BEARING RATIO

**Borehole No 3 Test Results**

Longnewton

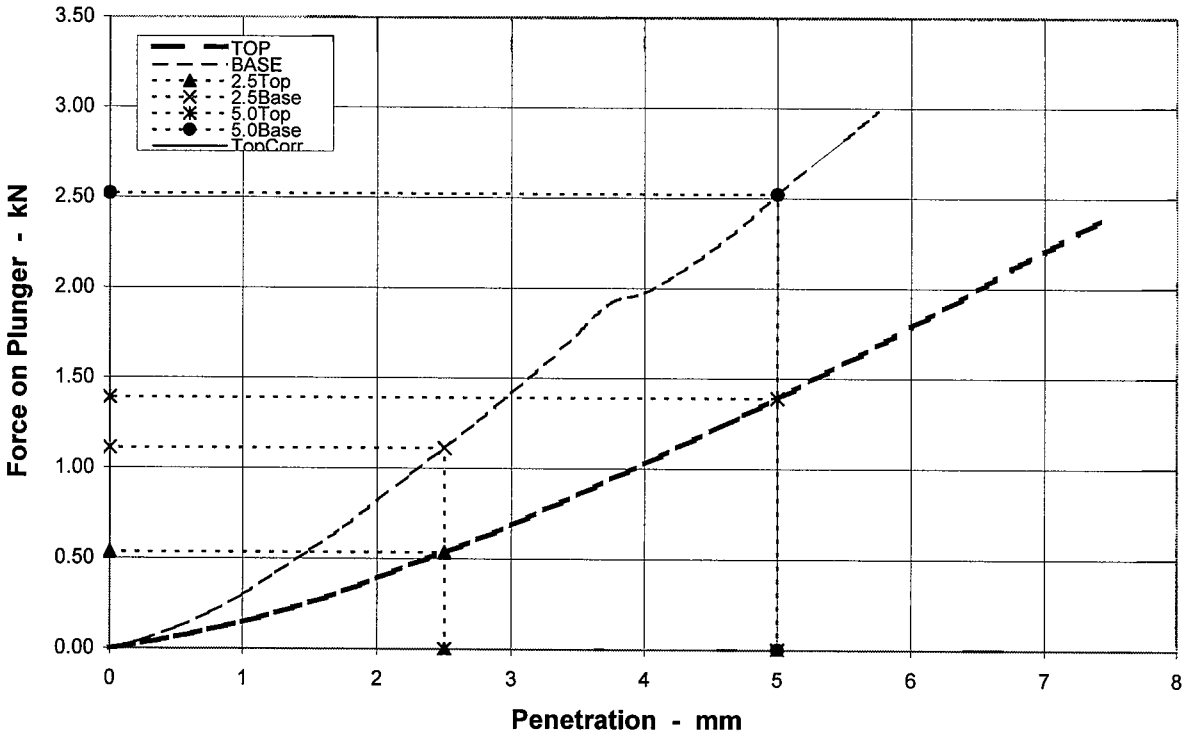
Client:
Consultant: SKF Limited

Job No: 3165

Test Method - BS 1377 : Part 4 : 1990 : Clause 7.4

| Sample No: | 132157 |
|---|---|
| Depth (m): | 1.00 |

Notes




| Preparation | Method of Compation | |
|---|---|---|
| | Rammer compaction with specified effort | |
| | Compaction Rammer | 2.5 kg hammer |

| Sample Conditions | | |
|---|---|---|
| Natural Moisture Content | % | 15 |
| Moisture Content - TOP | % | 15 |
| Moisture Content - BASE | % | 15 |
| Bulk Density | Mg/m³ | 2.20 |
| Dry Density | Mg/m³ | 1.91 |

| Test Conditions | | |
|---|---|---|
| Sample Retained on 20 mm sieve | % | 25.0 |
| Sample Retained on 37.5 mm sieve | % | 0.0 |
| Seating Load - TOP | N | 50 |
| Seating Load - BASE | N | 50 |
| Surcharge | kg | 6 |

| Penetration mm | CBR Values % | |
|---|---|---|
| | TOP | BASE |
| 2.5 | 4.1 | 8.4 |
| 5.0 | 7.0 | 12.6 |
| **Accepted CBR** | **7.0** | **12.6** |

ritchies

# ONE DIMENSIONAL CONSOLIDATION TEST

**Borehole No**
**2**

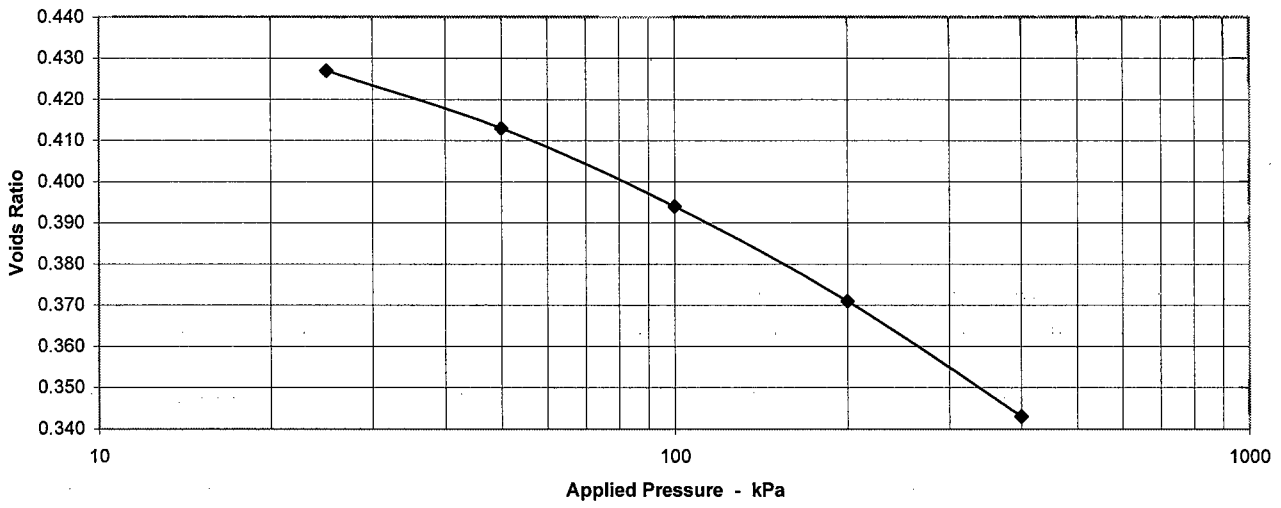
Longnewton

Client:
Consultant: SKF Limited

Job No: 3165

Test Method - BS 1377 : 1990 : Part 5

Sample No: 132156
Depth 1.00 m

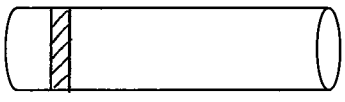



| Initial Sample Conditions | | |
|---|---|---|
| Diameter | mm | 75.00 |
| Height | mm | 19.00 |
| Moisture Content | % | 13.30 |
| Bulk Density | Mg/m³ | 2.09 |
| Dry Density | Mg/m³ | 1.84 |
| Voids Ratio | | 0.455 |
| Assumed | | |
| Particle Density | Mg/m³ | 2.68 |
| Swelling Pressure | kPa | |
| **Final Sample Conditions** | | |
| Moisture Content | % | 12.40 |
| Bulk Density | Mg/m³ | 2.24 |
| Dry Density | Mg/m³ | 1.99 |
| Voids Ratio | | 0.343 |

| | | |
|---|---|---|
| Seating Pressure | kPa | 0 |
| Laboratory Temperature | °C | 20.0 |
| Sample Condition | | Undisturbed |

| Pressure Range kPa | | Laboratory Coefficients of Compressibility m²/MN | Laboratory Coefficients of Consolidation m²/year | Method of Curve Fitting | |
|---|---|---|---|---|---|
| 0 - | 25.0 | 0.770 | 9.40 | root time | |
| 25.0 - | 50.0 | 0.400 | 4.37 | root time | |
| 50.0 - | 100.0 | 0.260 | 5.95 | root time | |
| 100.0 - | 200.0 | 0.170 | 5.65 | root time | |
| 200.0 - | 400.0 | 0.100 | 3.16 | root time | |

Location of Test Specimen within Undisturbed Sample



ritchies

# UNDRAINED MULTISTAGE TRIAXIAL COMPRESSION

Borehole No **2** Test Results

Longnewton

Client:
Consultant: SKF Limited

Job No: 3165

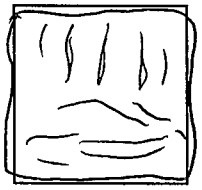
Test Method - BS 1377:1990:Part 7 Clause 9

Sample Number 132156
Depth (m) : 1.00

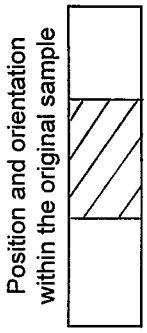
Notes :

**Sample Details**

| | | |
|---|---|---|
| Sample Condition | | Undisturbed |
| Height | mm | 174.0 |
| Diameter | mm | 86.0 |
| Moisture Content | % | 13 |
| Bulk Density | Mg/m³ | 2.04 |
| Dry Density | Mg/m³ | 1.80 |

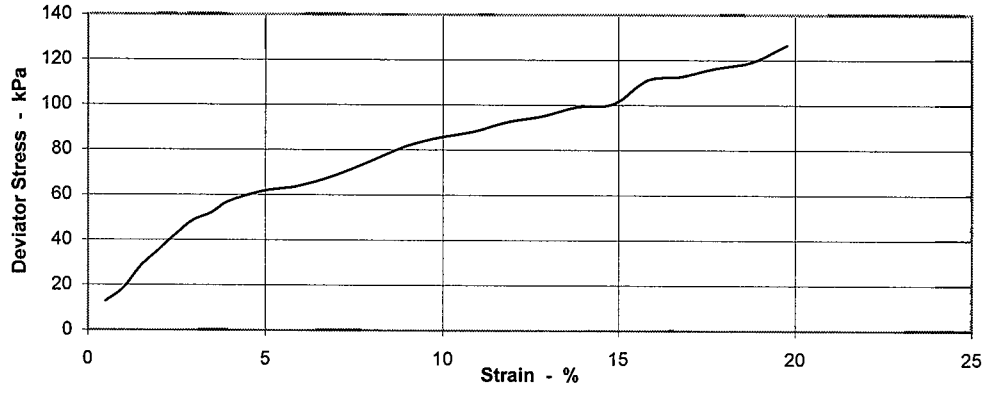


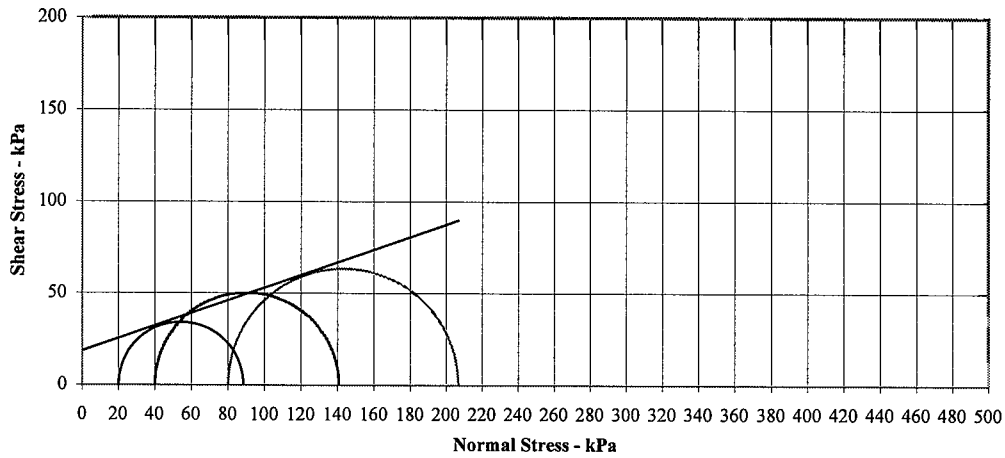
Sketch of Failure




| Test Details | Stage | 1 | 2 | 3 |
|---|---|---|---|---|
| Membrane Thickness | mm | 0.30 | 0.30 | 0.30 |
| Membrane Correction | kPa | 0.59 | 1.07 | 1.32 |
| Rate of Axial Displacement | %/min | 1.98 | 1.98 | 1.98 |
| Cell Pressure | kPa | 20 | 40 | 80 |
| Strain at Failure | % | 6.9 | 14.9 | 19.8 |
| Maximum Deviator Stress | kPa | 68 | 101 | 127 |
| Shear Strength | kPa | 34 | 50 | 63 |
| Mode of Failure | | | | Intermediate |

| Shear Strength Parameters | |
|---|---|
| C | 18 kPa |
| Phi | 19.0 ° |



# Appendix F: Results of Geochemical Testing

# Scientific Analysis Laboratories

## Certificate of Analysis

| | |
|---|---|
| **Report Number:** | 124241-1 |
| **Date of Report:** | 21-Feb-2008 |
| **Client:** | SKF,<br>Unit 10 Haylie Neuk,<br>Largs,<br>Ayrshire,<br>Scotland.<br>KA30 8JD |
| **Client Contact:** | Mr Scott Farquhar |
| **Client Job Reference:** | E8538 |
| **Client Site Reference:** | Longnewton |
| **Date Job Received at SAL:** | 11-Feb-2008 |
| **Date Analysis Started:** | 13-Feb-2008 |
| **Date Analysis Completed:** | 21-Feb-2008 |

The results reported relate to samples received at the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS or MCERTS accreditation

Tests covered by this certificate were conducted in accordance with SAL SOPs

Key to symbols used in this report:
W: Analysis was performed at another SAL Laboratory
S: Analysis was sub-contracted
N: Analysis is not UKAS accredited
U: Analysis is UKAS accredited
M: Analysis is MCERTS accredited

Report checked and authorised by: Ms Kimberley Puschman, Senior Project Manager

UKAS TESTING
1977

## Index to caveats used in this report

| Value | Description |
|---|---|
| ND | Not Detected |
| AR | As Received |
| 10:1 | Leachate |
| A40 | Assisted dried < 40C |

| Notes: |
|---|
| Leachable Cadmium, Chromium, Copper and Zinc results are Non-UKAS accredited. |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**As received**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 001** | **124241 002** | **124241 003** | **124241 004** | **124241 005** |
| | | | | **Customer Sample Reference** | **BH1 J 0.50M** | **BH2 J 0.50M** | **BH2 J 1.00M** | **BH3 J 0.50M** | **BH3 J 1.00M** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** | **AR** | **AR** |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | | | |
| Leachate Preparation | Grav | | | N | Extracted | - | - | Extracted | - |
| Asbestos (Screen Only) | Visual | | | N | - | ND | - | ND | - |
| Cyanide (Total) | Dist-ISE | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Phenols (Total-Mono) | Colorimetry | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Sulphide | Colorimetry | 10 | mg/kg | N | <10 | <10 | <10 | <10 | <10 |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**As received**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 006** | **124241 007** | **124241 008** | **124241 009** | **124241 010** |
| | | | | **Customer Sample Reference** | **BH4 J 0.50M** | **BH5 J 0.50M** | **HP2 D 0.30M** | **HP4 D 0.20M** | **HP5 D 0.20M** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** | **AR** | **AR** |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | | | |
| Leachate Preparation | Grav | | | N | - | - | - | - | - |
| Asbestos (Screen Only) | Visual | | | N | - | - | - | - | - |
| Cyanide (Total) | Dist-ISE | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Phenols (Total-Mono) | Colorimetry | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Sulphide | Colorimetry | 10 | mg/kg | N | <10 | <10 | <10 | <10 | <10 |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**As received**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 011** | **124241 012** |
| | | | | **Customer Sample Reference** | **HP6 D 0.40M** | **HP7 D 0.20M** |
| | | | | **Test Sample** | **AR** | **AR** |
| | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | |
| Leachate Preparation | Grav | | | N | Extracted | - |
| Asbestos (Screen Only) | Visual | | | N | ND | - |
| | | | | | | |
| Cyanide (Total) | Dist-ISE | 1 | mg/kg | U | <1 | <1 |
| Phenols (Total-Mono) | Colorimetry | 1 | mg/kg | U | <1 | <1 |
| Sulphide | Colorimetry | 10 | mg/kg | N | <10 | <10 |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil Miscellaneous** Analysed as Soil

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 001** | **124241 002** | **124241 003** | **124241 004** | **124241 005** |
| | | | | **Customer Sample Reference** | **BH1 J 0.50M** | **BH2 J 0.50M** | **BH2 J 1.00M** | **BH3 J 0.50M** | **BH3 J 1.00M** |
| | | | | **Test Sample** | **A40** | **A40** | **A40** | **A40** | **A40** |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | | | |
| Arsenic | ICP/OES (Sim) | 2 | mg/kg | U | **21** | **25** | **27** | **23** | **52** |
| Boron (water-soluble) | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Cadmium | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Chromium | ICP/OES (Sim) | 1 | mg/kg | U | **23** | **29** | **32** | **37** | **37** |
| Copper | ICP/OES (Sim) | 1 | mg/kg | U | **18** | **29** | **33** | **32** | **44** |
| Lead | ICP/OES (Sim) | 3 | mg/kg | U | **21** | **34** | **20** | **270** | **28** |
| Mercury | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Nickel | ICP/OES (Sim) | 1 | mg/kg | U | **21** | **35** | **60** | **46** | **54** |
| Selenium | ICP/OES (Sim) | 2 | mg/kg | U | <2 | <2 | <2 | <2 | <2 |
| Sulphate(2:1) | ICP/OES (SIM)(Water Extract) | 10 | mg/l | U | **58** | **12** | <10 | **57** | **10** |
| Zinc | ICP/OES (Sim) | 1 | mg/kg | U | **58** | **100** | **83** | **120** | **110** |
| pH | Probe | | | U | **7.2** | **8.0** | **7.4** | **7.9** | **7.8** |
| Total Organic Carbon | OX/IR | 0.1 | % | N | **1.1** | - | **0.4** | - | - |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**Miscellaneous**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 006** | **124241 007** | **124241 008** | **124241 009** | **124241 010** |
| | | | | **Customer Sample Reference** | **BH4 J 0.50M** | **BH5 J 0.50M** | **HP2 D 0.30M** | **HP4 D 0.20M** | **HP5 D 0.20M** |
| | | | | **Test Sample** | **A40** | **A40** | **A40** | **A40** | **A40** |
| | | | | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | | | |
| Arsenic | ICP/OES (Sim) | 2 | mg/kg | U | **30** | **8** | **20** | **18** | **15** |
| Boron (water-soluble) | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Cadmium | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Chromium | ICP/OES (Sim) | 1 | mg/kg | U | **26** | **17** | **28** | **32** | **24** |
| Copper | ICP/OES (Sim) | 1 | mg/kg | U | **21** | **6** | **28** | **32** | **26** |
| Lead | ICP/OES (Sim) | 3 | mg/kg | U | **31** | **8** | **130** | **410** | **240** |
| Mercury | ICP/OES (Sim) | 1 | mg/kg | U | <1 | <1 | <1 | <1 | <1 |
| Nickel | ICP/OES (Sim) | 1 | mg/kg | U | **38** | **19** | **29** | **32** | **25** |
| Selenium | ICP/OES (Sim) | 2 | mg/kg | U | <2 | <2 | <2 | <2 | <2 |
| Sulphate(2:1) | ICP/OES (SIM)(Water Extract) | 10 | mg/l | U | <10 | <10 | **11** | <10 | **95** |
| Zinc | ICP/OES (Sim) | 1 | mg/kg | U | **76** | **18** | **280** | **400** | **260** |
| | | | | | | | | | |
| pH | Probe | | | U | **7.8** | **7.5** | **7.3** | **6.6** | **6.9** |
| Total Organic Carbon | OX/IR | 0.1 | % | N | - | **0.3** | - | - | - |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**Miscellaneous**

| | | | | | SAL Reference | 124241 011 | 124241 012 |
|---|---|---|---|---|---|---|---|
| | | | | | Customer Sample Reference | HP6 D 0.40M | HP7 D 0.20M |
| | | | | | Test Sample | A40 | A40 |
| | | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Arsenic | ICP/OES (Sim) | 2 | mg/kg | U | | **20** | **21** |
| Boron (water-soluble) | ICP/OES (Sim) | 1 | mg/kg | U | | <1 | <1 |
| Cadmium | ICP/OES (Sim) | 1 | mg/kg | U | | <1 | <1 |
| Chromium | ICP/OES (Sim) | 1 | mg/kg | U | | **45** | **23** |
| Copper | ICP/OES (Sim) | 1 | mg/kg | U | | **36** | **20** |
| Lead | ICP/OES (Sim) | 3 | mg/kg | U | | **260** | **47** |
| Mercury | ICP/OES (Sim) | 1 | mg/kg | U | | <1 | <1 |
| Nickel | ICP/OES (Sim) | 1 | mg/kg | U | | **51** | **24** |
| Selenium | ICP/OES (Sim) | 2 | mg/kg | U | | <2 | <2 |
| Sulphate(2:1) | ICP/OES (SIM)(Water Extract) | 10 | mg/l | U | | <10 | **18** |
| Zinc | ICP/OES (Sim) | 1 | mg/kg | U | | **210** | **62** |
| | | | | | | | |
| pH | Probe | | | U | | **6.4** | **7.8** |
| Total Organic Carbon | OX/IR | 0.1 | % | N | | - | - |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil
**Organochlorine insecticides**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 001** | **124241 006** |
| | | | | **Customer Sample Reference** | **BH1 J 0.50M** | **BH4 J 0.50M** |
| | | | | **Test Sample** | **A40** | **A40** |
| | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | |
| Aldrin | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Chlordane (sum of cis and trans isomers) | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| DDD | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| DDE | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| DDT | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Dieldrin | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Endosulphan | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Endrin | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Heptachlor | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Heptachlor epoxide | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Hexachlorobenzene | GC/MS (HR) | 0.01 | mg/kg | WU | <0.01 | <0.01 |
| Hexachlorocyclohexane (sum of alpha, beta and gamma) | GC/MS | 0.01 | mg/kg | WU | <0.01 | <0.01 |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Soil** Analysed as Soil

**Total Petroleum Hydrocarbons C8-C35 Aliphatic/Aromatic**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 004** | **124241 006** | **124241 008** |
| | | | | **Customer Sample Reference** | **BH3 J 0.50M** | **BH4 J 0.50M** | **HP2 D 0.30M** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** |
| | | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Total Petroleum Hydrocarbons (C8-C10 aliphatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |
| Total Petroleum Hydrocarbons (C10-C12 aliphatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |
| Total Petroleum Hydrocarbons (C12-C16 aliphatic) | GC/FID | 1 | mg/kg | N | **2** | **2** | **3** |
| Total Petroleum Hydrocarbons (C16-C21 aliphatic) | GC/FID | 1 | mg/kg | N | **6** | **5** | <1 |
| Total Petroleum Hydrocarbons (C21-C35 aliphatic) | GC/FID | 1 | mg/kg | N | **2** | **1** | **2** |
| | | | | | | | |
| Total Petroleum Hydrocarbons (C8-C10 aromatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |
| Total Petroleum Hydrocarbons (C10-C12 aromatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |
| Total Petroleum Hydrocarbons (C12-C16 aromatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |
| Total Petroleum Hydrocarbons (C16-C21 aromatic) | GC/FID | 1 | mg/kg | N | **1** | **1** | **2** |
| Total Petroleum Hydrocarbons (C21-C35 aromatic) | GC/FID | 1 | mg/kg | N | <1 | <1 | <1 |

**SAL Reference:** 124241
**Project Site:** Longnewton
**Customer Reference:** E8538

**Leachate** Analysed as Water

**Miscellaneous**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124241 001** | **124241 004** | **124241 011** |
| | | | | **Customer Sample Reference** | **BH1 J 0.50M** | **BH3 J 0.50M** | **HP6 D 0.40M** |
| | | | | **Test Sample** | **10:1** | **10:1** | **10:1** |
| | | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Arsenic | ICP/OES (Hyd/Sim) | 5 | µg/l | U | **6** | <5 | **7** |
| Cadmium | ICP/OES (Sim) | 5 | µg/l | U | <5 | <5 | <5 |
| Chromium | ICP/OES (Sim) | 10 | µg/l | U | **27** | **19** | **24** |
| Copper | ICP/OES (Sim) | 20 | µg/l | U | <20 | <20 | <20 |
| Lead | ICP/OES (Sim)(Preconc.) | 25 | µg/l | N | <25 | <25 | <25 |
| Mercury | ICP/OES (Sim/CV) | 1 | µg/l | U | <1 | <1 | <1 |
| Nickel | ICP/OES (Sim) | 10 | µg/l | U | **15** | <10 | <10 |
| Selenium | ICP/OES (Hyd/Sim) | 5 | µg/l | U | <5 | <5 | <5 |
| Zinc | ICP/OES (Sim) | 10 | µg/l | U | **49** | <10 | <10 |
| | | | | | | | |
| Total Hardness expressed as Calcium Carbonate | ICP/OES (Sim) | 10 | mg/l | N | **10** | **43** | **26** |

# Scientific Analysis Laboratories

## Certificate of Analysis

| | |
|---|---|
| **Report Number:** | 125902-1 |
| **Date of Report:** | 11-Mar-2008 |
| **Client:** | SKF,<br>Unit 10 Haylie Neuk,<br>Largs,<br>Ayrshire,<br>Scotland.<br>KA30 8JD |
| **Client Contact:** | Mr Scott Farquhar |
| **Client Job Reference:** | |
| **Client Site Reference:** | Longnewton |
| **Date Job Received at SAL:** | 29-Feb-2008 |
| **Date Analysis Started:** | 03-Mar-2008 |
| **Date Analysis Completed:** | 11-Mar-2008 |

The results reported relate to samples received at the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS or MCERTS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs

Key to symbols used in this report:
W: Analysis was sub-contracted and performed at another SAL Laboratory
S: Analysis was sub-contracted
N: Analysis is not UKAS accredited
U: Analysis is UKAS accredited
M: Analysis is MCERTS accredited

Report checked and authorised by: Ms Kimberley Puschman, Senior Project Manager

UKAS TESTING
**1977**

## Index to caveats used in this report

| Value | Description |
|---|---|
| AR | As Received |
| 10:1 | Leachate |

**SAL Reference:** 125902
**Project Site:** Longnewton

**Soil** Analysed as Soil
**Miscellaneous**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **125902 001** | **125902 002** | **125902 003** |
| | | | | **Customer Sample Reference** | **BH03 1.00M** | **BH02 1.00M** | **BH04 0.50M** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** |
| | | | | | | | |
| **Determinand** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Leachate Preparation | Grav | | | N | Extracted | Extracted | Extracted |

**SAL Reference:** 125902
**Project Site:** Longnewton

**Leachate** Analysed as Water

**Miscellaneous**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **125902 001** | **125902 002** | **125902 003** |
| | | | | **Customer Sample Reference** | **BH03 1.00M** | **BH02 1.00M** | **BH04 0.50M** |
| | | | | **Test Sample** | **10:1** | **10:1** | **10:1** |
| | | | | | | | |
| **Determinand** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Arsenic | ICP/OES (Hyd/Sim) | 5 | µg/l | U | <5 | **8** | **8** |
| Cadmium | ICP/OES (Sim) | 5 | µg/l | U | <5 | <5 | <5 |
| Chromium | ICP/OES (Sim) | 10 | µg/l | U | <10 | **11** | <10 |
| Copper | ICP/OES (Sim) | 20 | µg/l | U | <20 | <20 | <20 |
| Lead | ICP/OES (Sim)(Preconc.) | 25 | µg/l | N | <25 | <25 | <25 |
| Mercury | ICP/OES (Sim/CV) | 1 | µg/l | U | <1 | <1 | <1 |
| Nickel | ICP/OES (Sim) | 10 | µg/l | U | <10 | **10** | <10 |
| Selenium | ICP/OES (Hyd/Sim) | 5 | µg/l | U | <5 | <5 | <5 |
| Zinc | ICP/OES (Sim) | 10 | µg/l | U | <10 | **98** | <10 |
| | | | | | | | |
| Total Hardness expressed as Calcium Carbonate | ICP/OES (Sim) | 10 | mg/l | N | **13** | **10** | **24** |

# Scientific Analysis Laboratories

## Certificate of Analysis

| | |
|---|---|
| **Report Number:** | 125897-1 |
| **Date of Report:** | 11-Mar-2008 |
| **Client:** | SKF,<br>Unit 10 Haylie Neuk,<br>Largs,<br>Ayrshire,<br>Scotland.<br>KA30 8JD |
| **Client Contact:** | Mr Scott Farquhar |
| **Client Job Reference:** | |
| **Client Site Reference:** | Longnewton |
| **Date Job Received at SAL:** | 29-Feb-2008 |
| **Date Analysis Started:** | 03-Mar-2008 |
| **Date Analysis Completed:** | 11-Mar-2008 |

The results reported relate to samples received at the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS or MCERTS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
Tests covered by this certificate were conducted in accordance with SAL SOPs

Key to symbols used in this report:
W: Analysis was sub-contracted and performed at another SAL Laboratory
S: Analysis was sub-contracted
N: Analysis is not UKAS accredited
U: Analysis is UKAS accredited
M: Analysis is MCERTS accredited

Report checked
and authorised by:

Ms Kimberley Puschman
Senior Project Manager

UKAS TESTING
**1977**

## Index to caveats used in this report

| Value | Description |
|---|---|
| AR | As Received |
| A40 | Assisted dried < 40C |

**SAL Reference:** 125897
**Project Site:** Longnewton

**Soil** Analysed as Soil
**As Received**

| | | | | | |
|---|---|---|---|---|---|
| | | | | **SAL Reference** | **125897 001** |
| | | | | **Customer Sample Reference** | **S1 0.60M** |
| | | | | **Test Sample** | **AR** |
| | | | | | |
| **Determinand** | **Technique** | **LOD** | **Units** | **Symbol** | |
| Cyanide (Total) | Dist-ISE | 1 | mg/kg | U | **2** |
| Phenols (Total-Mono) | Colorimetry | 1 | mg/kg | U | <1 |
| Sulphide | Colorimetry | 10 | mg/kg | N | <10 |

**SAL Reference:** 125897
**Project Site:** Longnewton

**Soil** Analysed as Soil
**Miscellaneous**

| | | | | | |
|---|---|---|---|---|---|
| | | | | **SAL Reference** | **125897 001** |
| | | | | **Customer Sample Reference** | **S1 0.60M** |
| | | | | **Test Sample** | **A40** |
| | | | | | |
| **Determinand** | **Technique** | **LOD** | **Units** | **Symbol** | |
| Arsenic | ICP/OES (Sim) | 2 | mg/kg | U | **19** |
| Boron (water-soluble) | ICP/OES (Sim) | 1 | mg/kg | U | <1 |
| Cadmium | ICP/OES (Sim) | 1 | mg/kg | U | <1 |
| Chromium | ICP/OES (Sim) | 1 | mg/kg | U | **37** |
| Copper | ICP/OES (Sim) | 1 | mg/kg | U | **31** |
| Lead | ICP/OES (Sim) | 3 | mg/kg | U | **35** |
| Mercury | ICP/OES (Sim) | 1 | mg/kg | U | <1 |
| Nickel | ICP/OES (Sim) | 1 | mg/kg | U | **37** |
| Selenium | ICP/OES (Sim) | 2 | mg/kg | U | <2 |
| Sulphate(2:1) | ICP/OES (SIM)(Water Extract) | 10 | mg/l | U | <10 |
| Zinc | ICP/OES (Sim) | 1 | mg/kg | U | **110** |
| | | | | | |
| pH | Probe | | | U | **6.4** |
| Total Organic Carbon | OX/IR | 0.1 | % | N | **3.4** |

# Scientific Analysis Laboratories

## Certificate of Analysis

| | |
|---|---|
| **Report Number:** | 124425-1 |
| **Date of Report:** | 25-Feb-2008 |
| **Client:** | SKF,<br>Unit 10 Haylie Neuk,<br>Largs,<br>Ayrshire,<br>Scotland.<br>KA30 8JD |
| **Client Contact:** | Mr Scott Farquhar |
| **Client Job Reference:** | 0535 |
| **Client Site Reference:** | Longnewton |
| **Date Job Received at SAL:** | 13-Feb-2008 |
| **Date Analysis Started:** | 14-Feb-2008 |
| **Date Analysis Completed:** | 25-Feb-2008 |

The results reported relate to samples received at the laboratory
Opinions and interpretations expressed herein are outside the scope of UKAS or MCERTS accreditation

Tests covered by this certificate were conducted in accordance with SAL SOPs

Key to symbols used in this report:
W: Analysis was performed at another SAL Laboratory
S: Analysis was sub-contracted
N: Analysis is not UKAS accredited
U: Analysis is UKAS accredited
M: Analysis is MCERTS accredited

Report checked and authorised by: Ms Kimberley Puschman, Senior Project Manager

UKAS TESTING
1977

## Index to caveats used in this report

| Value | Description |
|---|---|
| AR | As Received |
| 13 | Results have been blank corrected. |

| Notes: |
|---|
| Leachable Cadmium, Chromium, Copper and Zinc results are Non-UKAS accredited. |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Metals**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124425 001** | **124425 002** |
| | | | | **Customer Sample Reference** | **BH1 W** | **BH4 W** |
| | | | | **Test Sample** | **AR** | **AR** |
| | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | |
| Arsenic | ICP/OES (Hyd/Sim) | 5 | µg/l | U | **8** | **16** |
| Boron | ICP/OES (Sim) | 100 | µg/l | N | **140** | **100** |
| Cadmium | ICP/OES (Sim) | 5 | µg/l | U | <5 | <5 |
| Chromium | ICP/OES (Sim) | 10 | µg/l | U | **12** | <10 |
| Copper | ICP/OES (Sim) | 20 | µg/l | U | <20 | <20 |
| Lead | ICP/OES (Sim)(Preconc.) | 25 | µg/l | N | <25 | <25 |
| Mercury | ICP/OES (Sim/CV) | 1 | µg/l | U | <1 | <1 |
| Nickel | ICP/OES (Sim) | 10 | µg/l | U | **14** | **64** |
| Selenium | ICP/OES (Hyd/Sim) | 5 | µg/l | U | <5 | <5 |
| Sulphate (Total) | ICP/OES (Sim) | 10 | mg/l | U | **27** | **11** |
| Zinc | ICP/OES (Sim) | 10 | µg/l | U | **34** | **26** |
| | | | | | | |
| pH | Probe | | | U | **6.8** | **7.1** |
| Total Hardness expressed as Calcium Carbonate | ICP/OES (Sim) | 10 | mg/l | N | **480** | **300** |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Miscellaneous**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124425 001** | **124425 002** |
| | | | | **Customer Sample Reference** | **BH1 W** | **BH4 W** |
| | | | | **Test Sample** | **AR** | **AR** |
| | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | |
| Cyanide (Total) | Dist-ISE | 0.05 | mg/l | U | <0.05 | <0.05 |
| Sulphide | Dist-VAS | 0.1 | mg/l | N | <0.1 | <0.1 |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Phenols (Speciated)**

| | | | | | SAL Reference | 124425 001 | 124425 002 |
|---|---|---|---|---|---|---|---|
| | | | | | Customer Sample Reference | BH1 W | BH4 W |
| | | | | | Test Sample | AR | AR |
| | | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Cresols | GC/MS | 0.5 | µg/l | WU | | <0.5 | <0.5 |
| Phenol | GC/MS (HR) | 0.5 | µg/l | WU | | <0.5 | <0.5 |
| Xylenols | GC/MS | 0.5 | µg/l | WU | | <0.5 | <0.5 |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Semi-Volatile Organic Compounds (USEPA 625)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124425 001** | **124425 002** | **124425 003** |
| | | | | **Customer Sample Reference** | **BH1 W** | **BH4 W** | **lab Blank** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| 1,2,4-Trichlorobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 1,2-Dichlorobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 1,3-Dichlorobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 1,4-Dichlorobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4,5-Trichlorophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4,6-Trichlorophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4-Dichlorophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4-Dimethylphenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4-Dinitrophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,4-Dinitrotoluene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2,6-Dinitrotoluene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-Chloronaphthalene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-Chlorophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-methyl phenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-Methylnaphthalene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-Nitroaniline | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 2-Nitrophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 3-Nitroaniline | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 3/4-Methylphenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Bromophenyl phenylether | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Chloro-3-methylphenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Chloroaniline | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Chlorophenyl phenylether | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Nitroaniline | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| 4-Nitrophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Acenaphthene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Acenaphthylene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Anthracene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Azobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Benzo(a)Anthracene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Benzo(a)Pyrene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Benzo(b/k)Fluoranthene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Benzo(ghi)Perylene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Bis (2-chloroethoxy) methane | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Bis (2-chloroethyl) ether | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Bis (2-chloroisopropyl) ether | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Bis (2-ethylhexyl)phthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Butyl benzylphthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Carbazole | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Chrysene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Di-n-butylphthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Di-n-octylphthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Dibenzo(ah)Anthracene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Dibenzofuran | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Semi-Volatile Organic Compounds (USEPA 625)**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124425 001** | **124425 002** | **124425 003** |
| | | | | **Customer Sample Reference** | **BH1 W** | **BH4 W** | **lab Blank** |
| | | | | **Test Sample** | **AR** | **AR** | **AR** |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| Diethyl phthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Dimethyl phthalate | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Fluoranthene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Fluorene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Hexachlorobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Hexachlorobutadiene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Hexachlorocyclopentadiene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Hexachloroethane | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Indeno(123-cd)Pyrene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Isophorone | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Naphthalene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Nitrobenzene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Pentachlorophenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Phenanthrene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Phenol | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |
| Pyrene | GC/MS | 10 | µg/l | WU | <10 | <10 | <10 |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Volatile Organic Compounds (USEPA 624)**

| | | | | | SAL Reference | 124425 001 | 124425 002 |
|---|---|---|---|---|---|---|---|
| | | | | | Customer Sample Reference | BH1 W | BH4 W |
| | | | | | Test Sample | AR | AR |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | | |
| 1,1,1,2-Tetrachloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1,1-Trichloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1,2,2-Tetrachloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1,2-Trichloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1,2-Trichloroethylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1-Dichloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1-Dichloroethylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,1-Dichloropropene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2,3-Trichloropropane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2,4-Trimethylbenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2-dibromoethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2-Dichlorobenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2-Dichloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,2-Dichloropropane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,3,5-Trimethylbenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,3-Dichlorobenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,3-Dichloropropane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 1,4-Dichlorobenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 2,2-Dichloropropane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 2-Chlorotoluene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| 4-Chlorotoluene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Benzene | GC/MS (Headspace) | 1 | µg/l | U | | (13) <1 | (13) <1 |
| Bromobenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Bromochloromethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Bromodichloromethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Bromoform | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Bromomethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Carbon tetrachloride | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Chlorobenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Chlorodibromomethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Chloroethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Chloroform | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Chloromethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| cis-1,2-Dichloroethylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| cis-1,3-Dichloropropene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Dibromomethane | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| EthylBenzene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Meta/Para-Xylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Ortho-Xylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Styrene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Tetrachloroethylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| Toluene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |
| trans-1,2-Dichloroethylene | GC/MS (Headspace) | 1 | µg/l | U | | <1 | <1 |

**SAL Reference:** 124425
**Project Site:** Longnewton
**Customer Reference:** 0535

**Water** Analysed as Water
**Volatile Organic Compounds (USEPA 624)**

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | **SAL Reference** | **124425 001** | **124425 002** |
| | | | | **Customer Sample Reference** | **BH1 W** | **BH4 W** |
| | | | | **Test Sample** | **AR** | **AR** |
| | | | | | | |
| **Determinant** | **Technique** | **LOD** | **Units** | **Symbol** | | |
| Trichlorofluoromethane | GC/MS (Headspace) | 1 | µg/l | U | <1 | <1 |
| Vinyl chloride monomer | GC/MS (Headspace) | 1 | µg/l | U | <1 | <1 |

## Appendix G: CLEA Assessment Levels

CLEA Software Version 1.071 

| | |
|---|---|
| Report generated | 30-Jul-18 |
| Report title | Longnewton Steading |
| Created by | Ruadh McIntosh at DRM |

**RESULTS**

Environment Agency

| | | Assessment Criterion (mg kg$^{-1}$) | | | Ratio of ADE to HCV | | | Saturation Limit (mg kg$^{-1}$) | 50% rule? | | Top Two applied? | Apply Top 2 Approach to Produce Group | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | oral | inhalation | combined | oral | inhalation | combined | | Oral | Inhal | | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| 1 | TPH Aliphatic >EC8-EC10 | 2.19E+03 | 8.07E+01 | 8.00E+01 | 0.02 | 0.98 | 1.00 | 1.52E+02 (vap) | Yes | Yes | No | No | No | No | No | No | No |
| 2 | TPH Aliphatic >EC10-EC12 | 3.92E+03 | 4.08E+02 | 3.96E+02 | 0.05 | 0.95 | 1.00 | 9.46E+01 (vap) | Yes | Yes | No | No | No | No | No | No | No |
| 3 | TPH Aliphatic >EC12-EC16 | 4.39E+03 | 3.42E+03 | 2.54E+03 | 0.41 | 0.59 | 1.00 | 4.73E+01 (sol) | Yes | Yes | No | No | No | No | No | No | No |
| 4 | TPH Aliphatic >EC16-EC35 | 7.24E+04 | NR | NR | 1.00 | NR | NR | 1.70E+01 (sol) | Yes | No | No | No | No | No | No | No | No |
| 5 | TPH Aliphatic >EC35-EC44 | 7.24E+04 | NR | NR | 1.00 | NR | NR | 1.70E+01 (sol) | Yes | No | No | No | No | No | No | No | No |
| 6 | TPH Aromatic >EC8-EC10 | 1.07E+02 | 1.43E+02 | 8.07E+01 | 0.61 | 0.39 | 1.00 | 1.21E+03 (vap) | Yes | Yes | No | No | No | No | No | No | No |
| 7 | TPH Aromatic >EC10-EC12 | 1.52E+02 | 7.81E+02 | 1.44E+02 | 0.90 | 0.10 | 1.00 | 7.22E+02 (sol) | Yes | Yes | No | No | No | No | No | No | No |
| 8 | TPH Aromatic >EC12-EC16 | 2.59E+02 | 8.23E+03 | 2.57E+02 | 0.98 | 0.02 | 1.00 | 3.36E+02 (sol) | Yes | Yes | No | No | No | No | No | No | No |
| 9 | TPH Aromatic >EC16-EC21 | 4.17E+02 | NR | NR | 1.00 | NR | NR | 1.07E+02 (vap) | Yes | No | No | No | No | No | No | No | No |
| 10 | TPH Aromatic >EC21-EC35 | 1.06E+03 | NR | NR | 1.00 | NR | NR | 9.65E+00 (sol) | Yes | No | No | No | No | No | No | No | No |
| 11 | Aldrin | 1.96E+00 | 1.40E+02 | 1.94E+00 | 0.99 | 0.01 | 1.00 | 5.08E+01 (sol) | No | No | No | No | No | No | No | No | No |
| 12 | Dieldrin | 1.19E+00 | 7.56E+01 | 1.18E+00 | 0.99 | 0.01 | 1.00 | 2.94E-01 (vap) | No | No | No | No | No | No | No | No | No |
| 13 | Alpha-Endosulfan | 5.95E+00 | 1.64E+02 | 5.74E+00 | 0.96 | 0.04 | 1.00 | 5.58E-03 (vap) | No | No | No | No | No | No | No | No | No |
| 14 | Beta-Endosulfan | 5.59E+00 | 2.02E+02 | 5.44E+00 | 0.97 | 0.03 | 1.00 | 1.30E-04 (vap) | No | No | No | No | No | No | No | No | No |
| 15 | Alpha-Hexachlorocyclohexanes (i | 3.76E+01 | 4.08E+03 | 3.73E+01 | 0.99 | 0.01 | 1.00 | 3.34E+01 (sol) | No | No | No | No | No | No | No | No | No |
| 16 | Beta-Hexachlorocyclohexanes (in | 3.21E+00 | 4.14E+03 | 3.20E+00 | 1.00 | 0.00 | 1.00 | 4.00E+00 (sol) | No | No | No | No | No | No | No | No | No |
| 17 | Gamma-Hexachlorocyclohexanes | 1.12E+00 | 2.85E+02 | 1.12E+00 | 1.00 | 0.00 | 1.00 | 1.02E+02 (sol) | No | No | No | No | No | No | No | No | No |
| 18 | DRM Chlordane | 2.42E+00 | 1.46E+02 | 2.38E+00 | 0.98 | 0.02 | 1.00 | 5.66E+01 (sol) | No | No | No | No | No | No | No | No | No |
| 19 | DRM DDD | 1.37E+00 | 1.20E+02 | 1.35E+00 | 0.99 | 0.01 | 1.00 | 1.30E+01 (vap) | No | No | No | No | No | No | No | No | No |
| 20 | DRM DDE | 9.00E-01 | 3.18E+01 | 8.75E-01 | 0.97 | 0.03 | 1.00 | 2.11E+01 (sol) | No | No | No | No | No | No | No | No | No |

Environment Agency

| | | Assessment Criterion (mg kg$^{-1}$) | | | Ratio of ADE to HCV | | | Saturation Limit (mg kg$^{-1}$) | 50% rule? | | Top Two applied? | Apply Top 2 Approach to Produce Group | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | oral | inhalation | combined | oral | inhalation | combined | | Oral | Inhal | | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| 21 | DRM DDT | 2.96E+00 | 4.99E+02 | 2.95E+00 | 0.99 | 0.01 | 1.00 | 2.45E+01 (vap) | No | No | No | No | No | No | No | No | No |
| 22 | DRM Endrin | 7.06E-03 | 4.27E-01 | 6.95E-03 | 0.98 | 0.02 | 1.00 | 2.58E+01 (vap) | No | No | No | No | No | No | No | No | No |
| 23 | DRM Heptachlor | 1.91E-01 | 2.49E-02 | 2.20E-02 | 0.12 | 0.88 | 1.00 | 2.29E+00 (vap) | No | No | No | No | No | No | No | No | No |
| 24 | DRM Heptachlor epoxide | 7.20E-02 | 9.40E+00 | 7.15E-02 | 0.99 | 0.01 | 1.00 | 1.93E+02 (sol) | No | No | No | No | No | No | No | No | No |
| 25 | Hexachlorobenzene | 1.06E+00 | 1.19E+01 | 9.77E-01 | 0.92 | 0.08 | 1.00 | 3.98E-01 (vap) | Yes | No | No | No | No | No | No | No | No |
| 26 | Phenol | 7.94E+02 | 5.13E+02 | 3.12E+02 | 0.39 | 0.61 | 1.00 | 7.01E+04 (vap) | No | No | No | No | No | No | No | No | No |
| 27 | DRM Cyanide | 3.29E+01 | 3.81E+04 | 3.29E+01 | 1.00 | 0.00 | 1.00 | NR | Yes | No | No | No | No | No | No | No | No |
| 28 | Chromium(VI) | 1.24E+01 | 4.25E+00 | 3.38E+00 | 0.20 | 0.80 | 1.00 | NR | Yes | No | No | No | No | No | No | No | No |
| 29 | Chromium(III) | 1.95E+04 | 3.55E+03 | 3.00E+03 | 0.15 | 0.85 | 1.00 | NR | No | No | No | No | No | No | No | No | No |
| 30 | | | | | | | | | | | | | | | | | |

Environment Agency

| | | Soil Distribution | | | | Media Concentrations | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sorbed | Dissolved | Vapour | Total | Soil | Soil gas | Indoor Dust | Outdoor dust at 0.8m | Outdoor dust at 1.6m | Indoor Vapour | Outdoor vapour at 0.8m | Outdoor vapour at 1.6m | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| | | % | % | % | % | mg $kg^{-1}$ | mg $m^{-3}$ | mg $kg^{-1}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW |
| 1 | TPH Aliphatic >EC8-EC10 | 98.4 | 0.1 | 1.6 | 100.0 | 8.00E+01 | 9.32E+03 | 4.00E+01 | 3.40E-08 | 0.00E+00 | 1.55E-01 | 2.88E-04 | 0.00E+00 | 1.14E+00 | 2.21E+00 | 1.91E+00 | 0.00E+00 | 0.00E+00 | 3.02E-02 |
| 2 | TPH Aliphatic >EC10-EC12 | 99.7 | 0.0 | 0.3 | 100.0 | 3.96E+02 | 9.14E+03 | 1.98E+02 | 1.69E-07 | 0.00E+00 | 1.52E-01 | 6.36E-04 | 0.00E+00 | 2.23E-01 | 1.42E+00 | 2.44E+00 | 0.00E+00 | 0.00E+00 | 1.16E-03 |
| 3 | TPH Aliphatic >EC12-EC16 | 100.0 | 0.0 | 0.0 | 100.0 | 2.54E+03 | 6.98E+03 | 1.27E+03 | 1.08E-06 | 0.00E+00 | 1.16E-01 | 1.41E-03 | 0.00E+00 | 1.77E-03 | 4.08E-01 | 8.59E-01 | 0.00E+00 | 0.00E+00 | 4.86E-07 |
| 4 | TPH Aliphatic >EC16-EC35 | 100.0 | 0.0 | 0.0 | 100.0 | 7.24E+04 | 1.16E+04 | 3.62E+04 | 3.08E-05 | 0.00E+00 | 1.93E-01 | 9.69E-03 | 0.00E+00 | 3.67E-08 | 1.08E-01 | 2.31E-01 | 0.00E+00 | 0.00E+00 | 2.15E-14 |
| 5 | TPH Aliphatic >EC35-EC44 | 100.0 | 0.0 | 0.0 | 100.0 | 7.24E+04 | 1.16E+04 | 3.62E+04 | 3.08E-05 | 0.00E+00 | 1.93E-01 | 9.69E-03 | 0.00E+00 | 3.67E-08 | 1.08E-01 | 2.31E-01 | 0.00E+00 | 0.00E+00 | 2.15E-14 |
| 6 | TPH Aromatic >EC8-EC10 | 98.2 | 1.6 | 0.2 | 100.0 | 8.07E+01 | 1.09E+03 | 4.04E+01 | 3.44E-08 | 0.00E+00 | 1.83E-02 | 9.95E-05 | 0.00E+00 | 2.23E+01 | 3.02E+01 | 8.08E+00 | 0.00E+00 | 0.00E+00 | 6.01E+00 |
| 7 | TPH Aromatic >EC10-EC12 | 98.9 | 1.0 | 0.0 | 100.0 | 1.44E+02 | 3.52E+02 | 7.19E+01 | 6.12E-08 | 0.00E+00 | 5.97E-03 | 7.60E-05 | 0.00E+00 | 2.83E+01 | 3.79E+01 | 1.09E+01 | 0.00E+00 | 0.00E+00 | 5.33E+00 |
| 8 | TPH Aromatic >EC12-EC16 | 99.5 | 0.5 | 0.0 | 100.0 | 2.57E+02 | 5.55E+01 | 1.29E+02 | 1.10E-07 | 0.00E+00 | 1.01E-03 | 4.24E-05 | 0.00E+00 | 2.80E+01 | 3.81E+01 | 1.44E+01 | 0.00E+00 | 0.00E+00 | 3.06E+00 |
| 9 | TPH Aromatic >EC16-EC21 | 99.8 | 0.2 | 0.0 | 100.0 | 4.17E+02 | 1.77E+00 | 2.08E+02 | 1.77E-07 | 0.00E+00 | 5.76E-05 | 1.66E-05 | 0.00E+00 | 1.53E+01 | 2.39E+01 | 1.44E+01 | 0.00E+00 | 0.00E+00 | 7.54E-01 |
| 10 | TPH Aromatic >EC21-EC35 | 100.0 | 0.0 | 0.0 | 100.0 | 1.06E+03 | 1.80E-02 | 5.31E+02 | 4.52E-07 | 0.00E+00 | 9.62E-07 | 1.20E-05 | 0.00E+00 | 1.84E+00 | 7.22E+00 | 1.07E+01 | 0.00E+00 | 0.00E+00 | 1.64E-02 |
| 11 | Aldrin | 100.0 | 0.0 | 0.0 | 100.0 | 1.94E+00 | 2.88E-03 | 9.69E-01 | 8.24E-10 | 0.00E+00 | 3.07E-07 | 1.86E-08 | 0.00E+00 | 9.14E-04 | 7.61E-03 | 5.06E-03 | 0.00E+00 | 0.00E+00 | 3.63E-06 |
| 12 | Dieldrin | 99.8 | 0.2 | 0.0 | 100.0 | 1.18E+00 | 2.82E-03 | 5.88E-01 | 5.01E-10 | 0.00E+00 | 7.08E-07 | 2.67E-08 | 0.00E+00 | 4.65E-02 | 7.66E-02 | 3.19E-02 | 0.00E+00 | 0.00E+00 | 1.91E-03 |
| 13 | Alpha-Endosulfan | 97.0 | 3.0 | 0.0 | 100.0 | 5.74E+00 | 4.22E-01 | 2.87E+00 | 2.44E-09 | 0.00E+00 | 7.57E-05 | 5.49E-07 | 0.00E+00 | 2.85E+00 | 3.91E+00 | 8.77E-01 | 0.00E+00 | 0.00E+00 | 7.68E-01 |
| 14 | Beta-Endosulfan | 96.8 | 3.2 | 0.0 | 100.0 | 5.44E+00 | 2.57E-01 | 2.72E+00 | 2.31E-09 | 0.00E+00 | 5.80E-05 | 5.00E-07 | 0.00E+00 | 2.83E+00 | 3.91E+00 | 8.74E-01 | 0.00E+00 | 0.00E+00 | 8.48E-01 |
| 15 | Alpha-Hexachlorocyclohexanes (inc. Linda | 98.2 | 1.8 | 0.0 | 100.0 | 3.73E+01 | 1.81E-01 | 1.86E+01 | 1.59E-08 | 0.00E+00 | 7.78E-05 | 2.48E-06 | 0.00E+00 | 1.20E+01 | 1.63E+01 | 3.85E+00 | 0.00E+00 | 0.00E+00 | 2.88E+00 |
| 16 | Beta-Hexachlorocyclohexanes (inc. Lindan | 98.5 | 1.5 | 0.0 | 100.0 | 3.20E+00 | 7.54E-04 | 1.60E+00 | 1.36E-09 | 0.00E+00 | 4.11E-07 | 1.90E-07 | 0.00E+00 | 9.05E-01 | 1.22E+00 | 2.95E-01 | 0.00E+00 | 0.00E+00 | 1.87E-01 |
| 17 | Gamma-Hexachlorocyclohexanes (inc. Lin | 97.8 | 2.2 | 0.0 | 100.0 | 1.12E+00 | 2.48E-03 | 5.58E-01 | 4.75E-10 | 0.00E+00 | 1.23E-06 | 8.00E-08 | 0.00E+00 | 4.09E-01 | 5.58E-01 | 1.30E-01 | 0.00E+00 | 0.00E+00 | 1.14E-01 |
| 18 | DRM Chlordane | 100.0 | 0.0 | 0.0 | 100.0 | 2.38E+00 | 4.70E-03 | 1.19E+00 | 1.01E-09 | 0.00E+00 | 4.43E-07 | 2.44E-08 | 0.00E+00 | 9.47E-03 | 1.28E-02 | 3.30E-03 | 0.00E+00 | 0.00E+00 | 4.39E-03 |
| 19 | DRM DDD | 99.8 | 0.2 | 0.0 | 100.0 | 1.35E+00 | 1.26E-03 | 6.76E-01 | 5.75E-10 | 0.00E+00 | 4.73E-07 | 3.05E-08 | 0.00E+00 | 1.78E-02 | 7.64E-02 | 6.57E-02 | 0.00E+00 | 0.00E+00 | 1.43E-04 |
| 20 | DRM DDE | 99.8 | 0.2 | 0.0 | 100.0 | 8.75E-01 | 4.39E-03 | 4.38E-01 | 3.73E-10 | 0.00E+00 | 8.41E-07 | 2.30E-08 | 0.00E+00 | 1.69E-02 | 4.92E-02 | 4.43E-02 | 0.00E+00 | 0.00E+00 | 2.24E-04 |

Environment Agency

| | | Soil Distribution | | | | Media Concentrations | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sorbed | Dissolved | Vapour | Total | Soil | Soil gas | Indoor Dust | Outdoor dust at 0.8m | Outdoor dust at 1.6m | Indoor Vapour | Outdoor vapour at 0.8m | Outdoor vapour at 1.6m | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| | | % | % | % | % | mg kg$^{-1}$ | mg m$^{-3}$ | mg kg$^{-1}$ | mg m$^{-3}$ | mg m$^{-3}$ | mg m$^{-3}$ | mg m$^{-3}$ | mg m$^{-3}$ | mg kg$^{-1}$ FW | mg kg$^{-1}$ FW | mg kg$^{-1}$ FW | mg kg$^{-1}$ FW | mg kg$^{-1}$ FW | mg kg$^{-1}$ FW |
| 21 | DRM DDT | 100.0 | 0.0 | 0.0 | 100.0 | 2.95E+00 | 3.86E-04 | 1.47E+00 | 1.25E-09 | 0.00E+00 | 1.12E-07 | 1.81E-08 | 0.00E+00 | 1.66E-03 | 1.16E-02 | 1.11E-02 | 0.00E+00 | 0.00E+00 | 7.84E-06 |
| 22 | DRM Endrin | 99.8 | 0.2 | 0.0 | 100.0 | 6.95E-03 | 1.74E-05 | 3.47E-03 | 2.96E-12 | 0.00E+00 | 5.09E-09 | 1.87E-10 | 0.00E+00 | 3.55E-04 | 5.08E-04 | 1.96E-04 | 0.00E+00 | 0.00E+00 | 2.58E-05 |
| 23 | DRM Heptachlor | 99.9 | 0.0 | 0.0 | 100.0 | 2.20E-02 | 8.13E-02 | 1.10E-02 | 9.36E-12 | 0.00E+00 | 2.08E-06 | 4.73E-09 | 0.00E+00 | 2.24E-06 | 1.34E-05 | 1.42E-05 | 0.00E+00 | 0.00E+00 | 1.24E-08 |
| 24 | DRM Heptachlor epoxide | 100.0 | 0.0 | 0.0 | 100.0 | 7.15E-02 | 2.89E-05 | 3.57E-02 | 3.04E-11 | 0.00E+00 | 7.19E-09 | 6.62E-10 | 0.00E+00 | 4.17E-04 | 7.08E-04 | 3.52E-04 | 0.00E+00 | 0.00E+00 | 1.56E-05 |
| 25 | Hexachlorobenzene | 99.9 | 0.1 | 0.0 | 100.0 | 9.77E-01 | 2.58E-02 | 4.88E-01 | 4.16E-10 | 0.00E+00 | 2.79E-06 | 3.98E-08 | 0.00E+00 | 1.03E-02 | 2.44E-02 | 1.53E-02 | 0.00E+00 | 0.00E+00 | 1.91E-04 |
| 26 | Phenol | 75.8 | 24.2 | 0.0 | 100.0 | 3.12E+02 | 2.04E+00 | 1.56E+02 | 1.33E-07 | 0.00E+00 | 1.11E-03 | 9.43E-05 | 0.00E+00 | 1.94E+02 | 3.74E+02 | 2.09E+02 | 0.00E+00 | 0.00E+00 | 3.96E+02 |
| 27 | DRM Cyanide | 96.9 | 3.1 | 0.0 | 100.0 | 3.29E+01 | NR | 1.64E+01 | 1.40E-08 | 0.00E+00 | 0.00E+00 | NR | 0.00E+00 | 5.36E+00 | 5.36E+00 | 5.36E+00 | 5.36E+00 | 5.36E+00 | 5.36E+00 |
| 28 | Chromium(VI) | 98.3 | 1.7 | 0.0 | 100.0 | 3.38E+00 | NR | 1.69E+00 | 1.44E-09 | 0.00E+00 | 0.00E+00 | NR | 0.00E+00 | 6.76E-04 | 3.38E-04 | 3.38E-04 | 3.04E-01 | 1.01E-03 | 3.04E-01 |
| 29 | Chromium(III) | 100.0 | 0.0 | 0.0 | 100.0 | 3.00E+03 | NR | 1.50E+03 | 1.28E-06 | 0.00E+00 | 0.00E+00 | NR | 0.00E+00 | 9.01E-02 | 9.01E-02 | 9.01E-02 | 9.01E-02 | 9.01E-02 | 9.01E-02 |
| 30 | | | | | | | | | | | | | | | | | | | |

Environment Agency

| | | Average Daily Exposure (mg kg$^{-1}$ bw day$^{-1}$) | | | | | | | Distribution by Pathway (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour | Background (oral) | Background (inhalation) | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour (indoor) | Inhalation of vapour (outdoor) | Background (oral) | Background (inhalation) |
| 1 | TPH Aliphatic >EC8-EC10 | 5.93E-04 | 9.28E-04 | 3.05E-04 | 1.88E-06 | 1.44E-01 | 5.62E+95 | 6.06E+95 | 0.20 | 0.32 | 0.10 | 0.00 | 49.37 | 0.00 | 0.63 | 49.37 |
| 2 | TPH Aliphatic >EC10-EC12 | 2.94E-03 | 6.10E-04 | 1.51E-03 | 9.33E-06 | 1.41E-01 | 5.62E+95 | 6.06E+95 | 1.01 | 0.21 | 0.52 | 0.00 | 48.26 | 0.01 | 1.73 | 48.27 |
| 3 | TPH Aliphatic >EC12-EC16 | 1.89E-02 | 3.83E-04 | 9.70E-03 | 5.99E-05 | 1.08E-01 | 5.62E+95 | 6.06E+95 | 6.90 | 0.14 | 3.55 | 0.02 | 39.37 | 0.02 | 10.59 | 39.41 |
| 4 | TPH Aliphatic >EC16-EC35 | 5.37E-01 | 6.23E-03 | 2.76E-01 | 1.70E-03 | 1.79E-01 | 5.62E+95 | 0.00E+00 | 26.85 | 0.31 | 13.79 | 0.09 | 8.95 | 0.02 | 50.00 | 0.00 |
| 5 | TPH Aliphatic >EC35-EC44 | 5.37E-01 | 6.23E-03 | 2.76E-01 | 1.70E-03 | 1.79E-01 | 5.62E+95 | 0.00E+00 | 26.85 | 0.31 | 13.79 | 0.09 | 8.95 | 0.02 | 50.00 | 0.00 |
| 6 | TPH Aromatic >EC8-EC10 | 5.99E-04 | 1.42E-02 | 3.08E-04 | 1.90E-06 | 1.69E-02 | 5.62E+95 | 6.06E+95 | 0.93 | 22.20 | 0.48 | 0.00 | 26.38 | 0.01 | 23.61 | 26.39 |
| 7 | TPH Aromatic >EC10-EC12 | 1.07E-03 | 1.73E-02 | 5.48E-04 | 3.38E-06 | 5.52E-03 | 5.62E+95 | 6.06E+95 | 2.18 | 35.41 | 1.12 | 0.01 | 11.28 | 0.01 | 38.71 | 11.29 |
| 8 | TPH Aromatic >EC12-EC16 | 1.91E-03 | 1.69E-02 | 9.81E-04 | 6.06E-06 | 9.32E-04 | 5.62E+95 | 6.06E+95 | 4.60 | 40.79 | 2.36 | 0.01 | 2.24 | 0.00 | 47.74 | 2.26 |
| 9 | TPH Aromatic >EC16-EC21 | 3.09E-03 | 1.03E-02 | 1.59E-03 | 9.81E-06 | 5.40E-05 | 5.62E+95 | 0.00E+00 | 10.30 | 34.19 | 5.29 | 0.03 | 0.18 | 0.00 | 50.00 | 0.00 |
| 10 | TPH Aromatic >EC21-EC35 | 7.88E-03 | 3.04E-03 | 4.05E-03 | 2.50E-05 | 1.39E-06 | 5.62E+95 | 0.00E+00 | 26.27 | 10.14 | 13.50 | 0.08 | 0.00 | 0.00 | 50.00 | 0.00 |
| 11 | Aldrin | 1.44E-05 | 2.35E-06 | 7.38E-06 | 4.56E-08 | 2.85E-07 | 5.63E-06 | 6.06E-06 | 47.28 | 7.74 | 24.29 | 0.15 | 0.94 | 0.00 | 18.51 | 1.09 |
| 12 | Dieldrin | 8.73E-06 | 3.06E-05 | 4.48E-06 | 2.77E-08 | 6.56E-07 | 5.63E-06 | 6.06E-06 | 17.19 | 60.19 | 8.83 | 0.05 | 1.29 | 0.00 | 11.09 | 1.35 |
| 13 | Alpha-Endosulfan | 4.26E-05 | 1.81E-03 | 2.19E-05 | 1.35E-07 | 7.00E-05 | 5.91E-05 | 3.03E-07 | 2.13 | 90.31 | 1.09 | 0.01 | 3.50 | 0.00 | 2.95 | 0.02 |
| 14 | Beta-Endosulfan | 4.03E-05 | 1.83E-03 | 2.07E-05 | 1.28E-07 | 5.37E-05 | 5.91E-05 | 3.03E-07 | 2.01 | 91.30 | 1.03 | 0.01 | 2.68 | 0.00 | 2.95 | 0.02 |
| 15 | Alpha-Hexachlorocyclohexanes (inc. Lindane) | 2.76E-04 | 7.50E-03 | 1.42E-04 | 8.77E-07 | 7.21E-05 | 6.75E-06 | 7.88E-08 | 3.45 | 93.77 | 1.77 | 0.01 | 0.90 | 0.00 | 0.08 | 0.00 |
| 16 | Beta-Hexachlorocyclohexanes (inc. Lindane) | 2.38E-05 | 5.55E-04 | 1.22E-05 | 7.54E-08 | 3.88E-07 | 9.00E-06 | 7.88E-07 | 3.96 | 92.36 | 2.03 | 0.01 | 0.06 | 0.00 | 1.50 | 0.08 |
| 17 | Gamma-Hexachlorocyclohexanes (inc. Lindan | 8.28E-06 | 2.61E-04 | 4.25E-06 | 2.63E-08 | 1.14E-06 | 2.59E-05 | 1.15E-06 | 2.75 | 86.48 | 1.41 | 0.01 | 0.38 | 0.00 | 8.59 | 0.38 |
| 18 | DRM Chlordane | 1.77E-05 | 6.79E-06 | 3.63E-06 | 5.61E-08 | 4.11E-07 | 0.00E+00 | 0.00E+00 | 61.89 | 23.75 | 12.72 | 0.20 | 1.43 | 0.00 | 0.00 | 0.00 |
| 19 | DRM DDD | 1.00E-05 | 2.60E-05 | 5.15E-06 | 3.18E-08 | 4.38E-07 | 0.00E+00 | 0.00E+00 | 24.10 | 62.38 | 12.38 | 0.08 | 1.05 | 0.00 | 0.00 | 0.00 |
| 20 | DRM DDE | 6.49E-06 | 1.84E-05 | 3.34E-06 | 2.06E-08 | 7.79E-07 | 0.00E+00 | 0.00E+00 | 22.39 | 63.35 | 11.50 | 0.07 | 2.68 | 0.00 | 0.00 | 0.00 |

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| | | Average Daily Exposure (mg kg$^{-1}$ bw day$^{-1}$) | | | | | | | Distribution by Pathway (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour | Background (oral) | Background (inhalation) | Direct soil ingestion | Consumption of homegrown produce | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour (indoor) | Inhalation of vapour (outdoor) | Background (oral) | Background (inhalation) |
| 21 | DRM DDT | 2.19E-05 | 4.00E-06 | 3.37E-06 | 6.94E-08 | 1.04E-07 | 0.00E+00 | 0.00E+00 | 74.35 | 13.60 | 11.46 | 0.24 | 0.35 | 0.00 | 0.00 | 0.00 |
| 22 | DRM Endrin | 5.15E-08 | 2.17E-07 | 2.65E-08 | 1.64E-10 | 4.71E-09 | 0.00E+00 | 0.00E+00 | 17.18 | 72.37 | 8.82 | 0.05 | 1.57 | 0.00 | 0.00 | 0.00 |
| 23 | DRM Heptachlor | 1.63E-07 | 6.44E-09 | 8.38E-08 | 5.18E-10 | 1.92E-06 | 0.00E+00 | 0.00E+00 | 7.50 | 0.30 | 3.86 | 0.02 | 88.31 | 0.01 | 0.00 | 0.00 |
| 24 | DRM Heptachlor epoxide | 5.30E-07 | 2.89E-07 | 2.72E-07 | 1.68E-09 | 6.68E-09 | 0.00E+00 | 0.00E+00 | 48.18 | 26.31 | 24.75 | 0.15 | 0.60 | 0.00 | 0.00 | 0.00 |
| 25 | Hexachlorobenzene | 7.24E-06 | 9.00E-06 | 3.72E-06 | 2.30E-08 | 2.58E-06 | 1.13E-05 | 1.21E-06 | 20.68 | 25.68 | 10.62 | 0.07 | 7.37 | 0.00 | 32.12 | 3.46 |
| 26 | Phenol | 2.31E-03 | 2.65E-01 | 3.56E-03 | 7.34E-06 | 1.03E-03 | 1.97E-02 | 2.42E-03 | 0.79 | 90.12 | 1.21 | 0.00 | 0.35 | 0.00 | 6.70 | 0.83 |
| 27 | DRM Cyanide | 2.44E-04 | 5.75E-03 | 0.00E+00 | 7.74E-07 | 0.00E+00 | 1.69E-02 | 3.64E-06 | 2.03 | 47.96 | 0.00 | 0.01 | 0.00 | 0.00 | 49.99 | 0.01 |
| 28 | Chromium(VI) | 2.51E-05 | 1.45E-04 | 0.00E+00 | 7.95E-08 | 0.00E+00 | 3.77E-04 | 0.00E+00 | 7.39 | 42.60 | 0.00 | 0.02 | 0.00 | 0.00 | 49.99 | 0.00 |
| 29 | Chromium(III) | 2.23E-02 | 3.53E-04 | 0.00E+00 | 7.07E-05 | 0.00E+00 | 3.39E-03 | 1.64E-05 | 85.34 | 1.35 | 0.00 | 0.27 | 0.00 | 0.00 | 12.97 | 0.06 |
| 30 | | | | | | | | | | | | | | | | |

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| | | Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$) | | Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$) | | Oral Mean Daily Intake ($\mu g\ day^{-1}$) | Inhalation Mean Daily Intake ($\mu g\ day^{-1}$) | Air-water partition coefficient ($K_{aw}$) ($cm^3\ cm^{-3}$) | Coefficient of Diffusion in Air ($m^2\ s^{-1}$) | Coefficient of Diffusion in Water ($m^2\ s^{-1}$) | log $K_{oc}$ ($cm^3\ g^{-1}$) | log $K_{ow}$ (dimensionless) | Dermal Absorption Fraction (dimensionless) | Soil-to-dust transport factor ($g\ g^{-1}$ DW) | Sub-surface soil to indoor air correction factor (dimensionless) | Relative bioavailability via soil ingestion (unitless) | Relative bioavailability via dust inhalation (unitless) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TPH Aliphatic >EC8-EC10 | TDI | 100 | TDI | 290 | 9.99E+99 | 9.99E+99 | 4.15E+01 | 1.00E-05 | 1.00E-09 | 4.48 | 5.22 | 0.1 | 0.5 | 10 | 1 | 1 |
| 2 | TPH Aliphatic >EC10-EC12 | TDI | 100 | TDI | 290 | 9.99E+99 | 9.99E+99 | 6.44E+01 | 1.00E-05 | 1.00E-09 | 5.38 | 6.3 | 0.1 | 0.5 | 10 | 1 | 1 |
| 3 | TPH Aliphatic >EC12-EC16 | TDI | 100 | TDI | 290 | 9.99E+99 | 9.99E+99 | 1.71E+02 | 1.00E-05 | 1.00E-09 | 6.73 | 7.94 | 0.1 | 0.5 | 10 | 1 | 1 |
| 4 | TPH Aliphatic >EC16-EC35 | TDI | 2000 | NR | 0 | 9.99E+99 | 0 | 1.07E+03 | 1.00E-05 | 1.00E-09 | 8.76 | 10.39 | 0.1 | 0.5 | 10 | 1 | 1 |
| 5 | TPH Aliphatic >EC35-EC44 | TDI | 2000 | NR | 0 | 9.99E+99 | 0 | 1.07E+03 | 1.00E-05 | 1.00E-09 | 8.76 | 10.39 | 0.1 | 0.5 | 10 | 1 | 1 |
| 6 | TPH Aromatic >EC8-EC10 | TDI | 40 | TDI | 60 | 9.99E+99 | 9.99E+99 | 2.53E-01 | 1.00E-05 | 1.00E-09 | 3.2 | 3.69 | 0.1 | 0.5 | 10 | 1 | 1 |
| 7 | TPH Aromatic >EC10-EC12 | TDI | 40 | TDI | 60 | 9.99E+99 | 9.99E+99 | 7.22E-02 | 1.00E-05 | 1.00E-09 | 3.4 | 3.93 | 0.1 | 0.5 | 10 | 1 | 1 |
| 8 | TPH Aromatic >EC12-EC16 | TDI | 40 | TDI | 60 | 9.99E+99 | 9.99E+99 | 1.26E-02 | 1.00E-05 | 1.00E-09 | 3.7 | 4.29 | 0.1 | 0.5 | 10 | 1 | 1 |
| 9 | TPH Aromatic >EC16-EC21 | TDI | 30 | NR | 0 | 9.99E+99 | 0 | 6.95E-04 | 1.00E-05 | 1.00E-09 | 4.15 | 4.82 | 0.1 | 0.5 | 10 | 1 | 1 |
| 10 | TPH Aromatic >EC21-EC35 | TDI | 30 | NR | 0 | 9.99E+99 | 0 | 2.48E-05 | 1.00E-05 | 1.00E-09 | 5.1 | 5.95 | 0.1 | 0.5 | 10 | 1 | 1 |
| 11 | Aldrin | TDI | 0.03 | TDI | 0.03 | 0.1 | 0.1 | 3.77E-03 | 4.12E-06 | 3.29E-10 | 5.34 | 6.47 | 0.1 | 0.5 | 1 | 1 | 1 |
| 12 | Dieldrin | TDI | 0.05 | TDI | 0.05 | 0.1 | 0.1 | 3.51E-04 | 4.03E-06 | 3.28E-10 | 4.1 | 4.94 | 0.1 | 0.5 | 1 | 1 | 1 |
| 13 | Alpha-Endosulfan | TDI | 2 | TDI | 2 | 1.05 | 0.005 | 7.65E-04 | 4.08E-06 | 3.31E-10 | 2.94 | 3.69 | 0.1 | 0.5 | 1 | 1 | 1 |
| 14 | Beta-Endosulfan | TDI | 2 | TDI | 2 | 1.05 | 0.005 | 4.50E-04 | 4.01E-06 | 3.31E-10 | 2.9 | 3.62 | 0.1 | 0.5 | 1 | 1 | 1 |
| 15 | Alpha-Hexachlorocyclohexanes (inc. Lindane | TDI | 8 | TDI | 8 | 0.12 | 0.0013 | 8.11E-05 | 4.48E-06 | 3.84E-10 | 3.15 | 3.77 | 0.1 | 0.5 | 1 | 1 | 1 |
| 16 | Beta-Hexachlorocyclohexanes (inc. Lindane) | TDI | 0.6 | TDI | 0.6 | 0.16 | 0.013 | 4.71E-06 | 4.72E-06 | 3.84E-10 | 3.23 | 3.87 | 0.1 | 0.5 | 1 | 1 | 1 |
| 17 | Gamma-Hexachlorocyclohexanes (inc. Linda | TDI | 0.3 | TDI | 0.3 | 0.46 | 0.019 | 3.10E-05 | 4.78E-06 | 3.84E-10 | 3.07 | 3.67 | 0.1 | 0.5 | 1 | 1 | 1 |
| 18 | DRM Chlordane | ID | 0.0285714 | ID | 0.0285714 | NR | NR | 1.99E-03 | 1.18E-06 | 4.37E-10 | 4.94 | 3.32 | 0.04 | 0.5 | 1 | 1 | 1 |
| 19 | DRM DDD | ID | 0.0416 | ID | 0.0416 | NR | NR | 1.64E-04 | 1.69E-06 | 4.76E-10 | 4.18 | 6.02 | 0.1 | 0.5 | 1 | 1 | 1 |
| 20 | DRM DDE | ID | 0.029 | ID | 0.029 | NR | NR | 8.82E-04 | 1.44E-06 | 5.87E-10 | 4.18 | 5.69 | 0.1 | 0.5 | 1 | 1 | 1 |

| | | Oral Health Criteria Value | (µg kg$^{-1}$ BW day$^{-1}$) | Inhalation Health Criteria Value | (µg kg$^{-1}$ BW day$^{-1}$) | Oral Mean Daily Intake (µg day$^{-1}$) | Inhalation Mean Daily Intake (µg day$^{-1}$) | Air-water partition coefficient ($K_{aw}$) (cm$^3$ cm$^{-3}$) | Coefficient of Diffusion in Air (m$^2$ s$^{-1}$) | Coefficient of Diffusion in Water (m$^2$ s$^{-1}$) | log $K_{oc}$ (cm$^3$ g$^{-1}$) | log $K_{ow}$ (dimensionless) | Dermal Absorption Fraction (dimensionless) | Soil-to-dust transport factor (g g$^{-1}$ DW) | Sub-surface soil to indoor air correction factor (dimensionless) | Relative bioavailability via soil ingestion (unitless) | Relative bioavailability via dust inhalation (unitless) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | DRM DDT | ID | 0.0294 | ID | 0.0294 | NR | NR | 3.32E-04 | 1.37E-06 | 4.95E-10 | 5.34 | 6.36 | 0.03 | 0.5 | 1 | 1 | 1 |
| 22 | DRM Endrin | TDI | 0.0003 | TDI | 0.0003 | NR | NR | 3.12E-04 | 1.25E-06 | 4.74E-10 | 4.03 | 4.56 | 0.1 | 0.5 | 1 | 1 | 1 |
| 23 | DRM Heptachlor | ID | 0.0022 | ID | 0.00217 | NR | NR | 6.05E+01 | 1.12E-06 | 5.69E-10 | 6.149 | 6.26 | 0.1 | 0.5 | 1 | 1 | 1 |
| 24 | DRM Heptachlor epoxide | ID | 0.0011 | ID | 0.0011 | NR | NR | 3.90E-04 | 1.32E-06 | 4.23E-10 | 4.92 | 5 | 0.1 | 0.5 | 1 | 1 | 1 |
| 25 | Hexachlorobenzene | TDI | 0.033 | TDI | 0.033 | 0.2 | 0.02 | 1.04E-02 | 4.99E-06 | 4.06E-10 | 4.53 | 5.47 | 0.1 | 0.5 | 1 | 1 | 1 |
| 26 | Phenol | TDI | 700 | TDI | 10 | 350 | 40 | 8.35E-06 | 7.90E-06 | 6.36E-10 | 1.92 | 1.48 | 0.3 | 0.5 | 1 | 1 | 1 |
| 27 | DRM Cyanide | TDI | 12 | TDI | 0.9 | 300 | 0.06 | NR | NR | NR | NR | NR | 0 | 0.5 | 1 | 1 | 1 |
| 28 | Chromium(VI) | TDI | 1 | ID | 0.0001 | 6.7 | NR | NR | NR | NR | NR | NR | 0 | 0.5 | 1 | 1 | 1 |
| 29 | Chromium(III) | TDI | 150 | TDI | 0.1 | 60.2 | 0.27 | NR | NR | NR | NR | NR | 0 | 0.5 | 1 | 1 | 1 |
| 30 | | | | | | | | | | | | | | | | | |

| | | Soil-to-water partition coefficient ($cm^3 g^{-1}$) | Vapour pressure (Pa) | Water solubility ($mg L^{-1}$) | Soil-to-plant concentration factor for green vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for root vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tuber vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for herbaceous fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for shrub fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tree fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TPH Aliphatic >EC8-EC10 | 3.50E+02 | 3.20E+02 | 4.27E-01 | model | model | model | model | model | model |
| 2 | TPH Aliphatic >EC10-EC12 | 2.78E+03 | 3.21E+01 | 3.39E-02 | model | model | model | model | model | model |
| 3 | TPH Aliphatic >EC12-EC16 | 6.23E+04 | 1.53E+00 | 7.59E-04 | model | model | model | model | model | model |
| 4 | TPH Aliphatic >EC16-EC35 | 6.68E+06 | 2.38E-02 | 2.54E-06 | model | model | model | model | model | model |
| 5 | TPH Aliphatic >EC35-EC44 | 6.68E+06 | 2.38E-02 | 2.54E-06 | model | model | model | model | model | model |
| 6 | TPH Aromatic >EC8-EC10 | 1.84E+01 | 3.20E+02 | 6.46E+01 | model | model | model | model | model | model |
| 7 | TPH Aromatic >EC10-EC12 | 2.91E+01 | 3.21E+01 | 2.45E+01 | model | model | model | model | model | model |
| 8 | TPH Aromatic >EC12-EC16 | 5.81E+01 | 1.14E+00 | 5.75E+00 | model | model | model | model | model | model |
| 9 | TPH Aromatic >EC16-EC21 | 1.64E+02 | 5.62E-03 | 6.53E-01 | model | model | model | model | model | model |
| 10 | TPH Aromatic >EC21-EC35 | 1.46E+03 | 1.61E-06 | 6.61E-03 | model | model | model | model | model | model |
| 11 | Aldrin | 2.54E+03 | 5.90E-04 | 2.00E-02 | model | model | model | model | model | model |
| 12 | Dieldrin | 1.46E+02 | 4.36E-06 | 2.00E-01 | model | model | model | model | model | model |
| 13 | Alpha-Endosulfan | 1.01E+01 | 2.37E-06 | 5.30E-01 | model | model | model | model | model | model |
| 14 | Beta-Endosulfan | 9.21E+00 | 3.56E-08 | 2.80E-01 | model | model | model | model | model | model |
| 15 | Alpha-Hexachlorocyclohexanes (inc. Lindan | 1.64E+01 | 6.47E-03 | 2.00E+00 | model | model | model | model | model | model |
| 16 | Beta-Hexachlorocyclohexanes (inc. Lindane | 1.97E+01 | 1.80E-05 | 2.00E-01 | model | model | model | model | model | model |
| 17 | Gamma-Hexachlorocyclohexanes (inc. Lind | 1.36E+01 | 3.70E-03 | 7.30E+00 | model | model | model | model | model | model |
| 18 | DRM Chlordane | 1.01E+03 | 1.31E-03 | 5.60E-02 | model | model | model | model | model | model |
| 19 | DRM DDD | 1.76E+02 | 8.93E-05 | 9.00E-02 | model | model | model | model | model | model |
| 20 | DRM DDE | 1.76E+02 | 8.00E-04 | 1.20E-01 | model | model | model | model | model | model |

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| | | Soil-to-water partition coefficient ($cm^3\ g^{-1}$) | Vapour pressure (Pa) | Water solubility ($mg\ L^{-1}$) | Soil-to-plant concentration factor for green vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for root vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tuber vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for herbaceous fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for shrub fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tree fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) |
|---|---|---|---|---|---|---|---|---|---|---|
| 21 | DRM DDT | 2.54E+03 | 2.13E-05 | 2.50E-02 | model | model | model | model | model | model |
| 22 | DRM Endrin | 1.24E+02 | 4.00E-04 | 2.30E-01 | model | model | model | model | model | model |
| 23 | DRM Heptachlor | 1.64E+04 | 5.33E-02 | 1.80E-01 | model | model | model | model | model | model |
| 24 | DRM Heptachlor epoxide | 9.65E+02 | 5.79E-04 | 2.00E-01 | model | model | model | model | model | model |
| 25 | Hexachlorobenzene | 3.93E+02 | 8.69E-05 | 9.60E-03 | model | model | model | model | model | model |
| 26 | Phenol | 9.65E-01 | 1.15E+01 | 8.41E+04 | model | model | model | 0.00E+00 | 0.00E+00 | model |
| 27 | DRM Cyanide | 9.91E+00 | NR | 4.80E+04 | model | model | model | model | model | model |
| 28 | Chromium(VI) | 1.80E+01 | NR | 2.30E+06 | 0.0002 fw | 0.0001 fw | 0.0001 fw | 0.09 fw | 0.0003 fw | 0.09 fw |
| 29 | Chromium(III) | 4.80E+03 | NR | 5.85E+05 | 0.00003 fw | 0.00003 fw | 0.00003 fw | 0.00003 fw | 0.00003 fw | 0.00003 fw |
| 30 | | | | | | | | | | |

# Appendix H: BRE Calculation

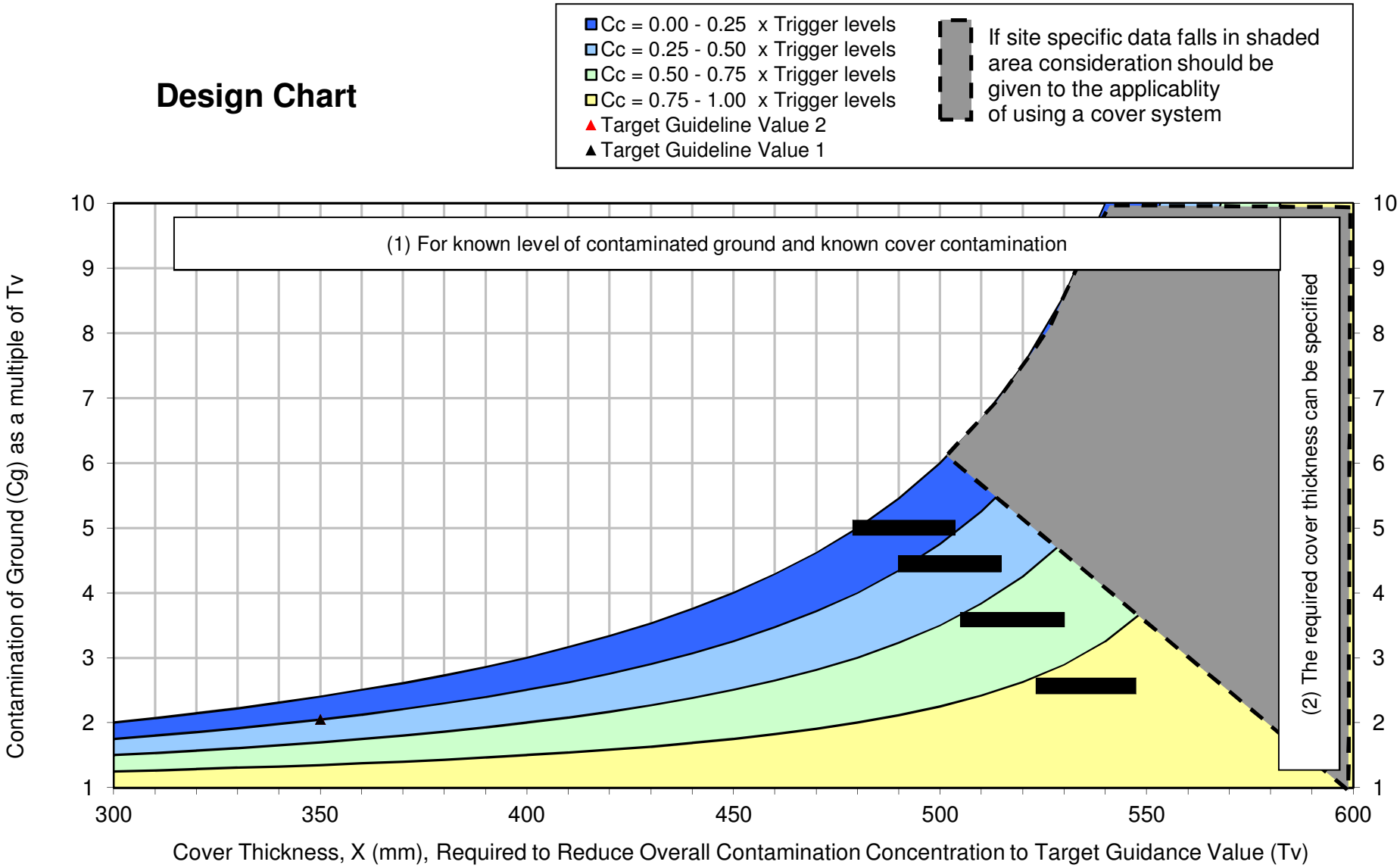
| Calculations based on mixed zone (M) | 600 | mm |
|---|---|---|

| Contaminant | Site Data | | | | Expressed as a Factor of Target Guideline Value | | | | Cover Thickness Required for Compliance to Specified Target Guideline Value | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Contamination of Ground (Cg) | Contamination of Cover (Cc) | Target Guideline Value 1 | Target Guideline Value 2 | Target Guideline Value 1 Soil / | Target Guideline Value 1 Cover / | Target Guideline Value 2 Soil / | Target Guideline Value 2 Cover / | Target Guideline Value 1 | Target Guideline Value 2 |
| | Units | | Units | | Fraction | | | | (mm) | |
| Arsenic | 52 | 8 | 32 | 32 | 1.6 | 0.3 | 1.6 | 0.3 | 273 | 273 |
| Lead | 410.0 | 50 | 200 | 200 | 2.1 | 0.3 | 2.1 | 0.3 | 350 | 350 |
| | | | | | | | | | | |

| Summary | | |
|---|---|---|
| | Target Guideline Value 1 | Target Guideline Value 2 |
| Number of contaminants | 2 | 2 |
| Number of contaminants **with no** thickness calculation | 0 | 0 |
| Breakdown - Number for which no TV specfied | 0 | 0 |
| Breakdown - Number for which no soil specified | 0 | 0 |
| Breakdown - Number for which no cover specified | 0 | 0 |
| Breakdown - Number for which cover > TV | 0 | 0 |
| Number of contaminants **with** thickness calculation | 2 | 2 |
| Breakdown - Number for which no cover required | 0 | 0 |
| Breakdown - Number for which cover required | 2 | 2 |

| **Overall thickness of cover required** | **350** | **350** |
|---|---|---|

## Design Chart



# Appendix I: Results of Gas Monitoring

# Gas Monitoring Field Record

**Visit 1**

| | | | | | |
|---|---|---|---|---|---|
| **Site:** | Longnewton, Haddington | **Date:** | 28/01/08 | **Weather:** | Windy & sunny |
| **Proj. No.:** | E8538 | **Name(s):** | KC | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | | | | | | | | 0.00 | 2.67 | GL | Standpipe waterlogged |
| BH4 | 1001 | 0.0 | 0.3 | 20.1 | <1 | <1 | 0.0 | 0.69 | 2.41 | GL | |
| BH5 | 1001 | 0.0 | 0.1 | 20.3 | <1 | <1 | 0.0 | 0.63 | 2.07 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

# Gas Monitoring Field Record

**Visit 2**

| **Site:** | Longnewton, Haddington | **Date:** | 09/02/08 | **Weather:** | Overcast |
|---|---|---|---|---|---|
| **Proj. No.:** | E8538 | **Name(s):** | KC | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | | | | | | | | 0.00 | 2.65 | GL | Standpipe waterlogged |
| BH4 | 1000 | 0.2 | 2.5 | 10.5 | <1 | <1 | 0.0 | 0.90 | 2.40 | GL | |
| BH5 | 1000 | 0.0 | 0.0 | 20.5 | <1 | <1 | 0.0 | 0.83 | 2.05 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

# Gas Monitoring Field Record

**Visit 3**

| | | | | | |
|---|---|---|---|---|---|
| **Site:** | Longnewton, Haddington | **Date:** | 14/02/08 | **Weather:** | |
| **Proj. No.:** | E8538 | **Name(s):** | KC | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 1020 | 0.7 | 1.0 | 19.2 | <1 | <1 | 0.0 | 0.44 | 2.48 | GL | |
| BH4 | 1020 | 0.0 | 2.5 | 14.2 | <1 | <1 | 0.0 | 1.02 | 2.47 | GL | |
| BH5 | 1020 | 0.0 | 0.9 | 19.2 | <1 | <1 | 0.0 | 1.11 | 2.05 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

# Gas Monitoring Field Record

**Visit 4**

| | | | | | |
|---|---|---|---|---|---|
| **Site:** | Longnewton, Haddington | **Date:** | 19/02/08 | **Weather:** | |
| **Proj. No.:** | E8538 | **Name(s):** | KC | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 1000 | 0.1 | 0.2 | 20 | <1 | <1 | 0.0 | 0.58 | 2.50 | GL | |
| BH4 | 1000 | 0.0 | 2.4 | 14.1 | <1 | <1 | 0.0 | 1.09 | 2.48 | GL | |
| BH5 | 1000 | 0.0 | 0.9 | 18.8 | <1 | <1 | 0.0 | 1.15 | 2.06 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

# Gas Monitoring Field Record

**Visit 5**

| | | | | | |
|---|---|---|---|---|---|
| **Site:** | Longnewton, Haddington | **Date:** | 03/03/08 | **Weather:** | Sunny/cold |
| **Proj. No.:** | E8538 | **Name(s):** | GT | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 980 | 1.6 | 0.8 | 18.8 | <1 | <1 | 0.0 | 0.64 | 2.40 | GL | |
| BH4 | 980 | 0.0 | 1.4 | 19.2 | <1 | <1 | 0.0 | 1.50 | 2.38 | GL | |
| BH5 | 981 | 0.1 | 0.4 | 20.5 | <1 | <1 | 0.0 | 1.63 | 1.95 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

# Gas Monitoring Field Record

**Visit 6**

| **Site:** | Longnewton, Haddington | **Date:** | 10/03/08 | **Weather:** | Cold & Raining |
|---|---|---|---|---|---|
| **Proj. No.:** | E8538 | **Name(s):** | KC & DP | **Serial No.:** | GA08660106 (GA2000) + Flow Pod |

| BH | Ba. Pr. (mbar) | $CH_4$ (% v/v) | $CO_2$ (% v/v) | $O_2$ (% v/v) | $H_2S$ (ppm) | CO (ppm) | Flow (l/hr) | GW Level (m) | BH Base (m) | Datum | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BH1 | 940 | 0.2 | 0.6 | 19.6 | <1 | <1 | 0.0 | 0.69 | 2.50 | GL | |
| BH4 | 940 | 0.0 | 0.5 | 19.6 | <1 | <1 | 0.0 | 1.23 | 2.50 | GL | |
| BH5 | 940 | 0.0 | 0.3 | 19.7 | <1 | <1 | 0.0 | 0.40 | 2.07 | GL | |
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**Additional Comments:**

David R. Murray & Associates, 150 St. John's Road, Edinburgh, EH12 8AY Tel.: (0131) 3340765 Fax.: (0131) 3164540

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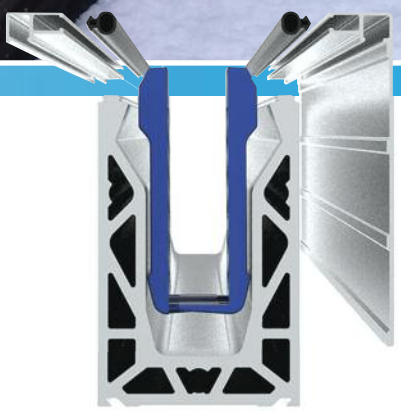
PUREVISTA
Architectural Glass Solutions

# posiglaze

## Frameless Glass Balustrade Solutions



posiglaze
Frameless Glass Balustrade Solutions

# Posiglaze is our innovative aluminium railing system

### FAST INSTALLATION
Designed to be installed without the need of ensuring the fitting surface is totally level.

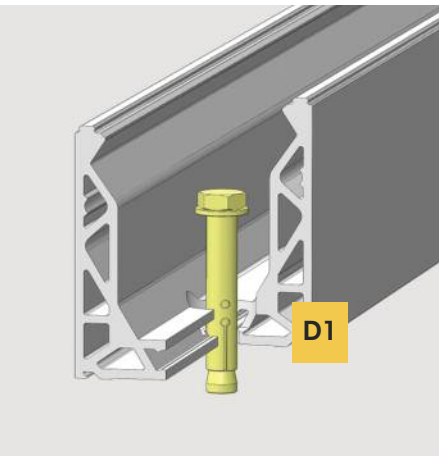
### FULLY ADJUSTABLE AFTER INSTALLATION
Posi Glaze uses a unique, simple adjustment system allowing horizontal alignment of each glass panel.

### LIGHT WEIGHT AND EXTREMELY STRONG
Cleverly designed out of extruded aluminium, saving weight yet keeping strength. For added protection we anodise our system increasing protection against the elements.

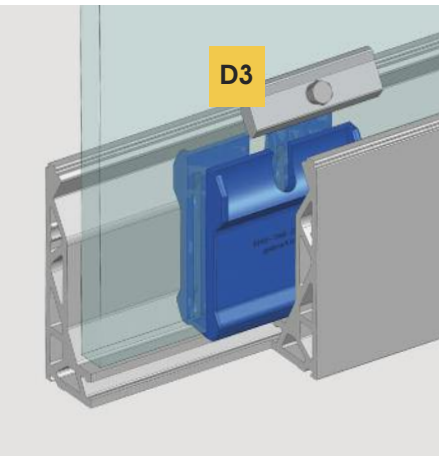
### EXCELLENTLY ENGINEERED
Our system is tested & engineered to meet the strictest building regulations (with the appropriate fixing and glass thickness) in both domestic and commercial installations. It can be installed in a wide variety of applications.

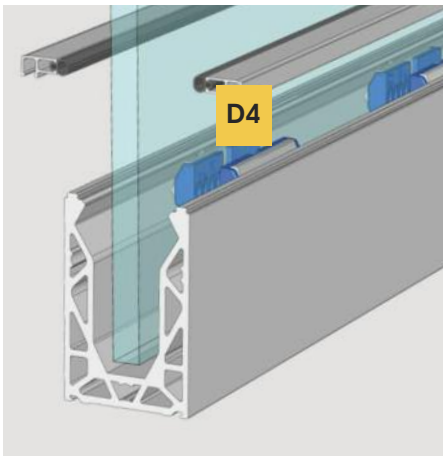
### GLASS THICKNESSES
- 12mm (toughened glass)
- 13.5mm (toughened laminate)
- 15mm (toughened glass)
- 17.5mm (toughened laminate)
- 19mm (toughened glass)
- 21.5mm (toughened laminate)

NOTE: ALL GLASS CLAMPS HAVE A 1MM TOLERANCE TO ACCEPT VARYING INTERLAYER THICKNESSES



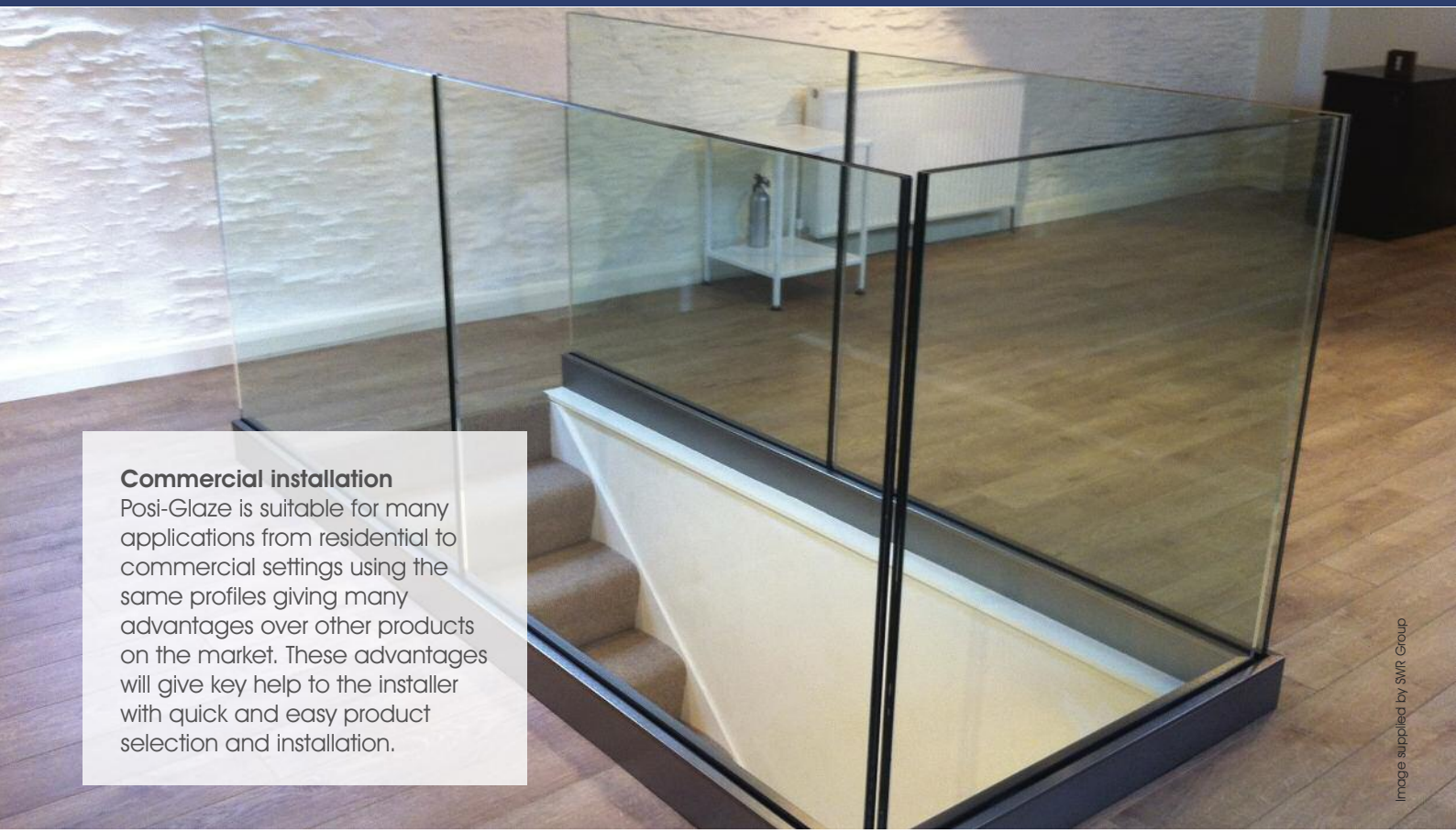





## Posiglaze is so easy to install

1. Fit the base channel **(D1)** to the substructure (Details on suitable fixing can be found on our website).
2. Clip the glass slip clamps **(D2)** to the bottom edge of the glass panel (We produce different sized clamps for different glass thicknesses).
3. Place the bolt screws in the pivot clamp **(D3)**.
4. Position the glass in the channel.
5. Using the adjustment bolts; loosening one side and tightening the other. This will allow the alignment of the glass with the next panel and enable vertical alignment of the glass.
6. Attaching the cover strip **(D4)** and bead gasket.



**Commercial installation**
Posi-Glaze is suitable for many applications from residential to commercial settings using the same profiles giving many advantages over other products on the market. These advantages will give key help to the installer with quick and easy product selection and installation.

Image supplied by SWR Group

## 3 metre of base drilled kit CODE POSIBASE3000

ALSO AVAILABLE IN 6 METER. PLEASE CONTACT US FOR DETAILS.

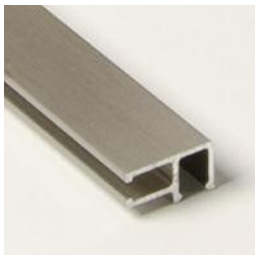
POSIGLAZE BASE DRILLED KIT COMPRISES OF:
1 x 3m Base Drilled Channel
2 x 3m Top Clip Bead
1 x Clamp kit to suit specified glass thickness
1 x Spanner

## 3 metre of side drilled kit CODE POSISIDE3000

ALSO AVAILABLE IN 6 METER. PLEASE CONTACT US FOR DETAILS.

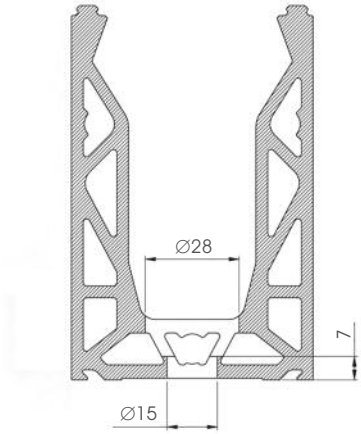
POSIGLAZE SIDE DRILLED KIT COMPRISES OF:
1 x 3m Side Drilled Channel
1 x 3m Top Clip Bead
1 x 3m Side Cladding
1 x Clamp kit to suit specified glass thickness
1 x Spanner

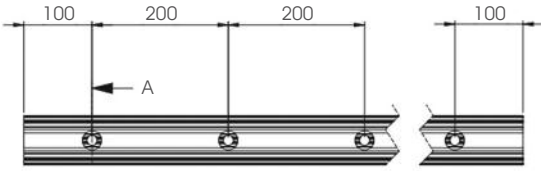
# POSI-GLAZE PARTS AND ACCESORIES

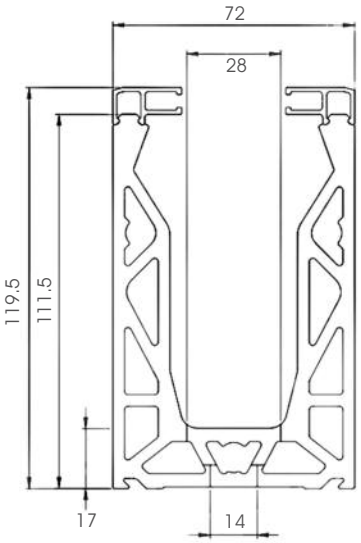
| | PRODUCT | CODE | PRODUCT DESCRIPTION |
|---|---|---|---|
|  | **Base Drilled Posi-Glaze**<br>3m S/S Brushed<br>3m Natural Anodised | <br>PGC-010<br>PGC-010C | Base Drilled Posi-Glaze channel. This is the main section that hold the glass. It is predrilled at 100mm from the ends and then 200mm there after. The hole is to suit a 12mm fixing bolt and is counter bored to sink the bolt head. Natural anodised channel is a matt silver finish used when the channel is below floor level, such as with decking or tiling when the channel is in line with the finished floor level. |
|  | **Side Drilled Posi-Glaze**<br>3m Natural Anodised | <br>PGC-020 | Sided Drilled Posi-Glaze channel. This is the main section that hold the glass. It is predrilled at 100mm from the ends and then 200mm thereafter. The hole is to suit a 12mm fixing bolt and is counter bored to sink the bolt head. Drilled through both walls, one side to allow socket through. |
|  | **90° Corner**<br>S/S Brushed | <br>PGA-090 | A Pre-fabricated 90° corner. Supplied with four dowels for easier fitting. Does not include extra top seal strip or side cladding. |
|  | **Top Seal Strip**<br>3m S/S Brushed | <br>PGA-030 | The top seal strip holds the gasket and is pressed onto the channel at the end of the installation. Covers the clamps from and prevents debris from entering the channel. |
|  | **Bottom Cladding**<br>3m S/S Brushed | <br>PGA-020 | To be used with side fixed channel if required, gives an angled finish to the bottom of the channel. Clips into the grooves under the channel, will require adhesive for securing in place. |
|  | **Side Cladding**<br>3m S/S Brushed | <br>PGA-010 | As with the top seal strip it holds the gasket in place and covers the clamps from view. To be used with side drilled channel to cover the drill holes from view. Requires adhesive to hold flat surface against channel. Also used with natural anodised channel to give stainless steel finish. |

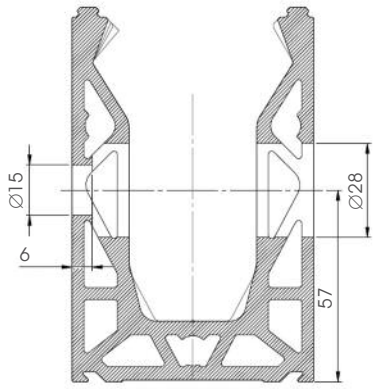
| PRODUCT | CODE | PRODUCT DESCRIPTION |
|---|---|---|
|  | | |
| **Clamp Kits** (Inc. Clamps, gasket, bars, bolts) | | Clamp kits have enough components to suit a 3m length of channel. The clamps can fit glass thicknesses 1mm either way of said glass thickness i.e. 15mm glass clamps will suit 14 - 16mm glass. Included are the clamp bars, which sit into the top mould of the clamps and the clamp bolts, which screw into the bars and are then undone to hold the glass in place. These are undone and tightened each side allowing the glass allignment. 6m gasket to suit glass thickness. |
| 12mm Glass | PGB-0012 | |
| 13.5mm Glass | PGB-0013 | |
| 15mm Glass | PGB-0015 | |
| 17.5mm Glass | PGB-0017 | |
| 19mm Glass | PGB-0019 | |
| 21.5mm Glass | PGB-0021 | |
|  | | |
| **Gasket** | | |
| 1m Large Gasket | PGA-001 | Extra gasket can be supplied in any length. The small gasket suits 19 - 21mm glass, the large gasket suits 12 - 17.5mm glass. |
| 1m Small Gasket | PGA-002 | |
|  | | |
| **End Caps** | | |
| End Cap Base Drilled | PGA-060 | Stainless steel end caps cut to suit each option. An adhesive will need to be used to hold them in place. |
| End Cap One Side-Clad | PGA-061 | |
| End Cap Two Side-Clad | PGA-062 | |
| End Cap Shaped Right | PGA-065R | |
| End Cap Shaped Left | PGA-065L | |
| End Cap Knock-in Base Drilled | PGA-060R | |
|  | | |
| **Dowel** | | |
| | PGA-070 | The dowels are used to allow for better alligning when joining channel sections together. There are three slots in the channel to hold dowels although two would be enough. |
|  | | |
| **Spanner** | | |
| | PGA-050 | Steel spanner with angle to reach the clamp bolts to tighten/loosen the glass. |
|  | | |
| **Drain Block** | | |
| | PV08DB<br>PV08DBSIDE | Anodised aluminium drain block. Fitted between the substrate and channel behind each hole to allow water to escape. |

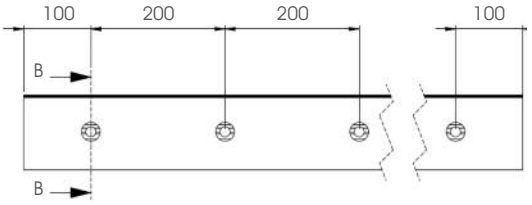
## PROFILE DIMENSIONS

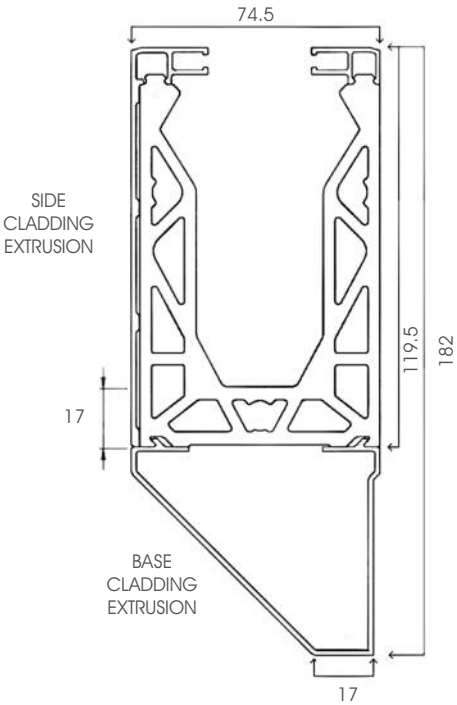


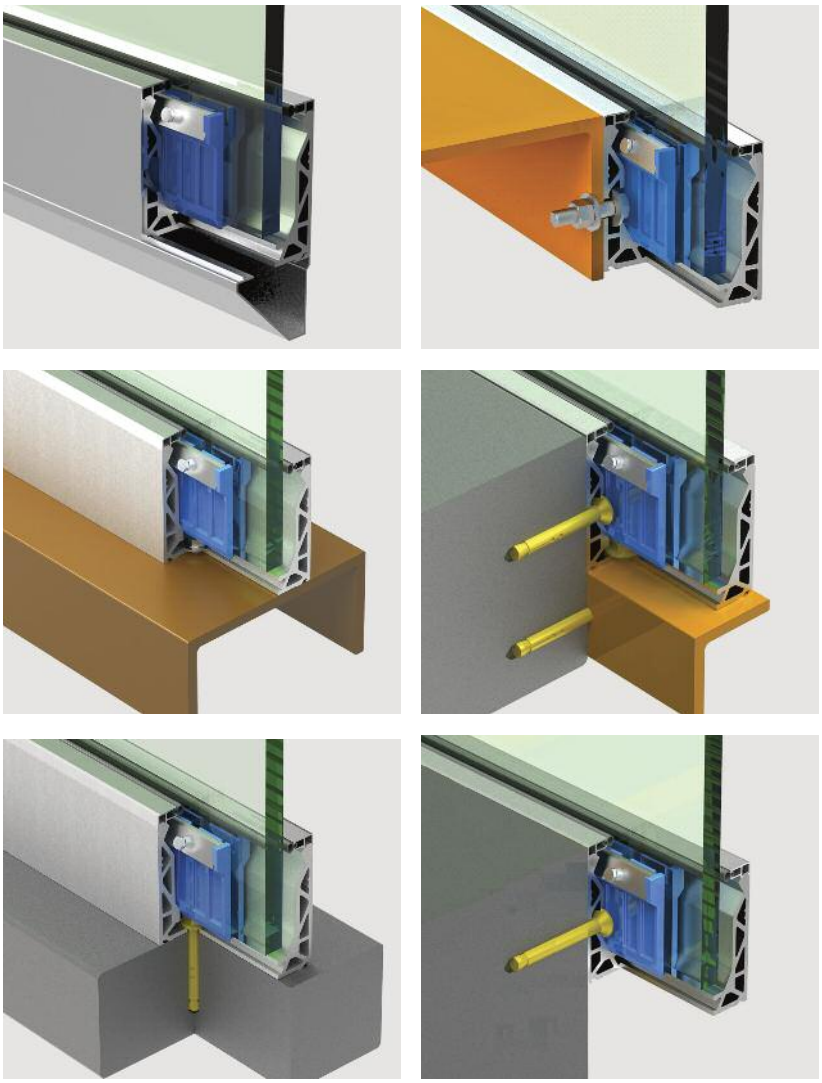



## FITTING APPLICATIONS

**BSI with 6180:2011**
Meets BSI standard 6180:2011. We've designed Posiglaze to meet BSi 6180:2011, 1.5kN loading. Visit our website for a dedicated guide to what glass thickness should be used and further fitting instructions.

Please note these are only fitting suggestions, Posiglaze should always be fitted to a suitable sub structure, if in doubt contact a qualified professional.

Our PosiGlaze channel has passed the CSTB 5 test. This was completed by our French/Italian distributor Logli Massimo under their product name DEFENDER 450.



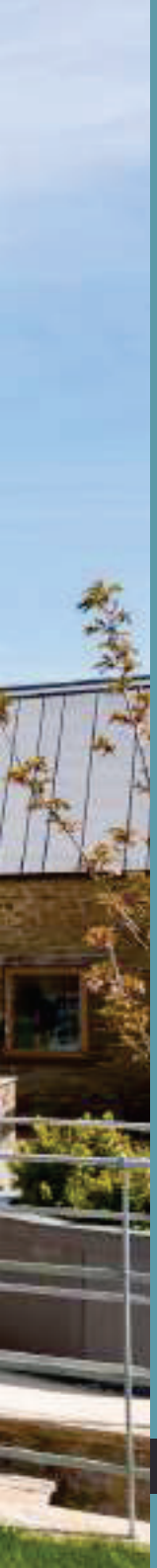
PUREVISTA
Architectural Glass Solutions

Tel **+44 (0)1208 261040**
Fax **+44 (0)1208 261041**
Email **sales@purevista.co.uk**
Pendewey, Stony Lane, Bodmin, Cornwall. PL31 2QX

**pure-vista.com**

JULY16


neo™
The only Rooflight Company to offer
concealed jamb motors for a completely uncluttered view



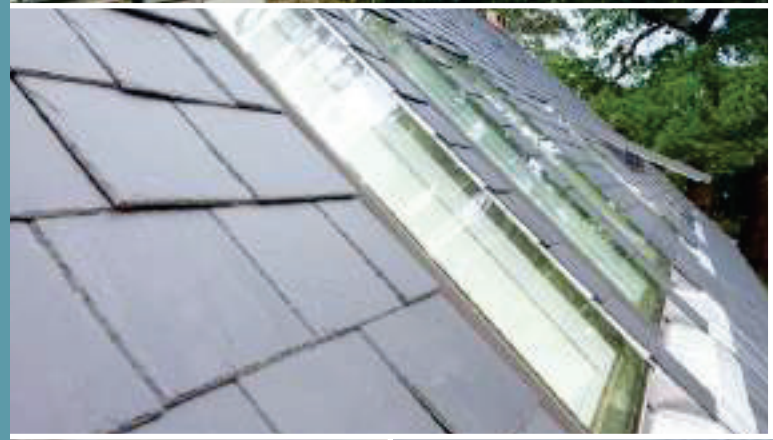
# Why specify **neo™**?

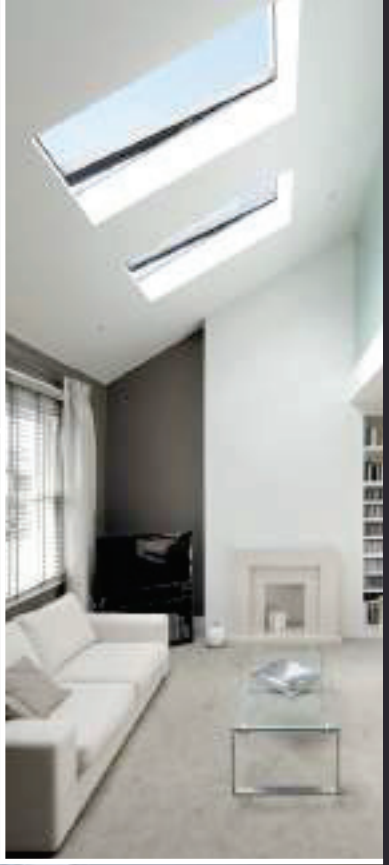
Architects specify our neo™ Rooflight range because:

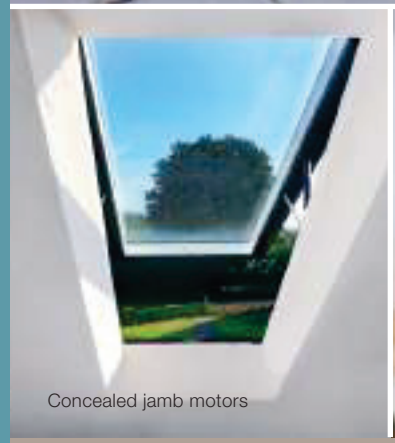
- We are the pitch roof experts; the first to perfect the look of a pane of a glass inside and out, including concealed jamb motors which no one else offers
- With 14 standard sizes and a made to measure service, we will always have a size to fit your project and we can create almost unlimited arrays with our different linking options
- neo™ has the feel of a bespoke product for standard pricing; every detail of the design is there for a reason.

**For more technical information visit**
**www.therooflightcompany.co.uk/neo**
or call **01993 833108**

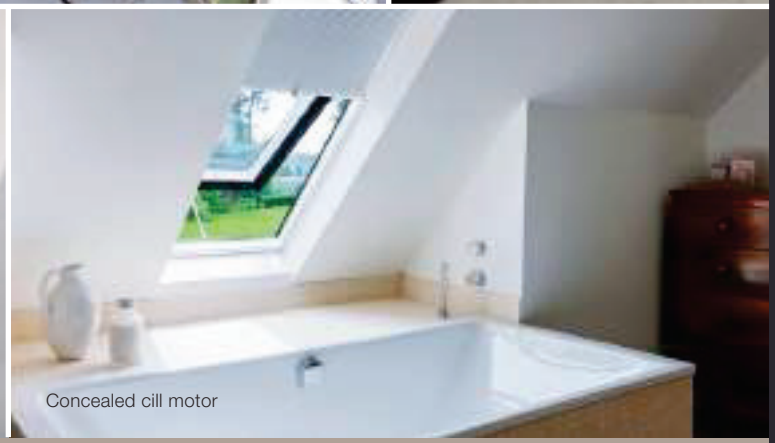
Suitable for pitched roofs between 20° and 60°





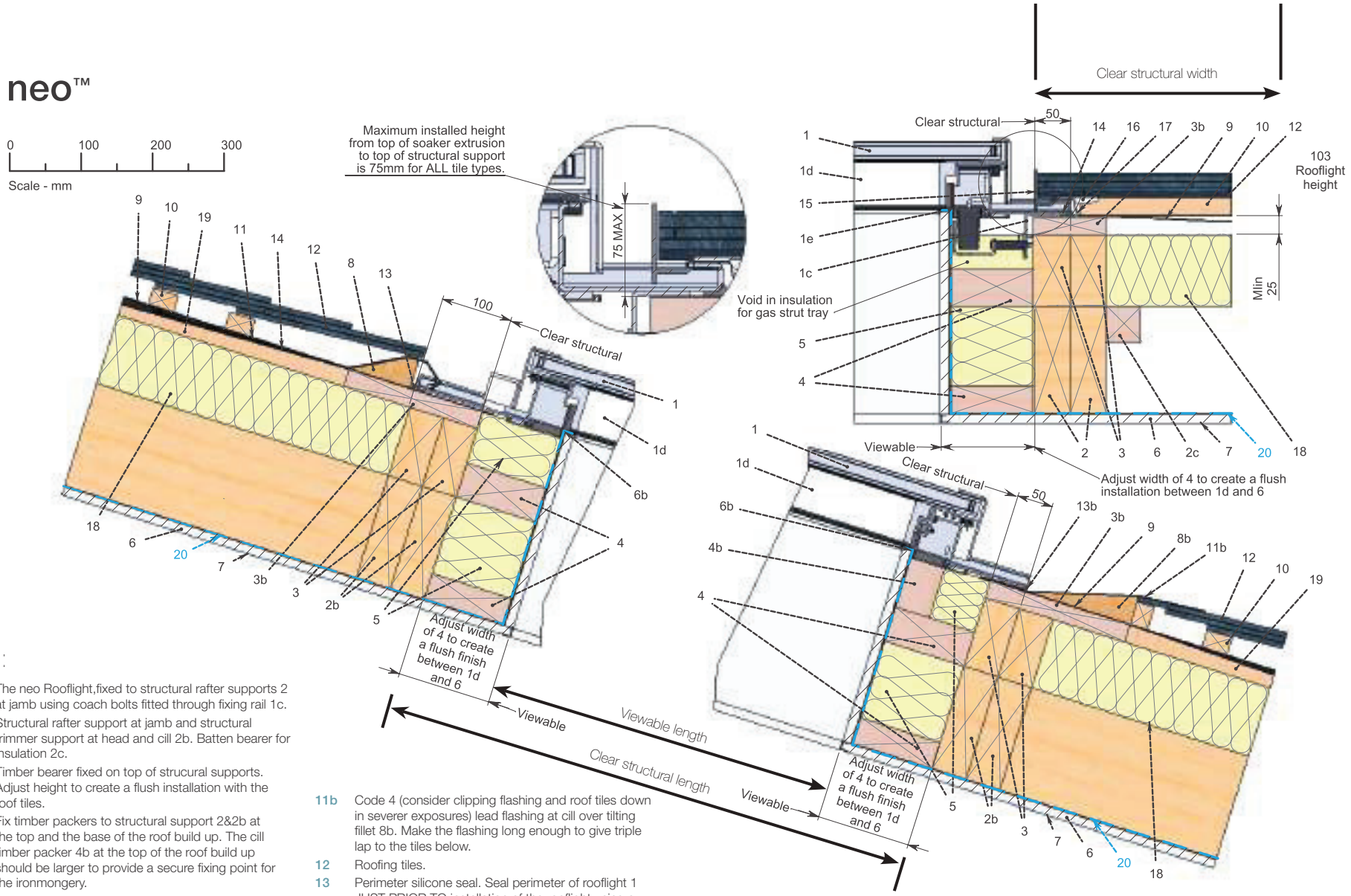


Concealed jamb motors



Concealed cill motor

# neo™




## Key:

1 The neo Rooflight,fixed to structural rafter supports 2 at jamb using coach bolts fitted through fixing rail 1c.

2 Structural rafter support at jamb and structural trimmer support at head and cill 2b. Batten bearer for insulation 2c.

3&3b Timber bearer fixed on top of strucural supports. Adjust height to create a flush installation with the roof tiles.

4 Fix timber packers to structural support 2&2b at the top and the base of the roof build up. The cill timber packer 4b at the top of the roof build up should be larger to provide a secure fixing point for the ironmongery.

5 Insulation fitted between timber packers 4.

6 Plasterboard lining with plasterboard stop 6b.

7 Plaster skim

8 Head hardwood tilting fillet.

8b Cill hardwood tilting fillet - to provide minimum 5 degree fall for shedding rain water.

9 Line of breathable membrane. Roof membrane must be allowed to 'sag' between rafters.

10 Softwood battens.

11 Code 3 (consider using code 4 and clipping down roof tiles in severer exposures) lead flashing at head. Carry flashing up the roof and lap UNDER general roofing membrane 9 and UNDER head membrane 15.

11b Code 4 (consider clipping flashing and roof tiles down in severer exposures) lead flashing at cill over tilting fillet 8b. Make the flashing long enough to give triple lap to the tiles below.

12 Roofing tiles.

13 Perimeter silicone seal. Seal perimeter of rooflight 1 JUST PRIOR TO installation of the rooflight using a thick continuous bead of low modulus neutral cure silicone sealant. Ensure sealant to cill 13b is located in a position where it will be covered by the cill flange of the rooflight.

14 Roofing membrane to rooflight head. Dress UNDER general roofing membrane 9, UNDER lead flashing 11 and OVER general roofing membrane 9 to ensure suitable lap.

15 Jamb flashing assembly - uPVC soaker up stand. Maximum installed height from top of soaker to top of structural support is 75mm. Trim soaker to accommodate thinner tile types. Refer to the flashing kit installation guide for more information.

16 Jamb weathering foam which is bent over and compressed under tiles as they are fixed down. Additional fixing holes or a mortar bed may be required under some tiles where only one batten fixing is possible.

17 Jamb flashing aprons, part of the jamb flashing assembly (supplied as part of the Flashing Kit). They pass UNDER the battens but OVER the general roofing membrane. The battens are tacked in position at the rooflight jambs only until the Flashing Kit is installed and the jamb aprons are slid under them. Then they are fixed home.

18 Insulation fitted on top of structural supports.

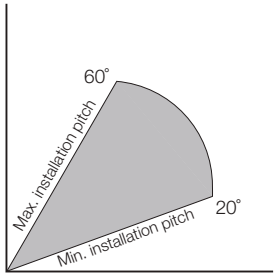
19 Counter batten.

20 Vapour barrier (blue)

**Please Note:** These sectional details are provided as an installation suggestion. Due to the differing nature of installations we strongly advise you to consult your rooflight installer to verify fitness for purpose. This drawing does not constitute a structural proposal. Sufficiency of structural supports to be checked by rooflight purchaser's structural consultant.

# neo™ Sizes

## Pitch Guide



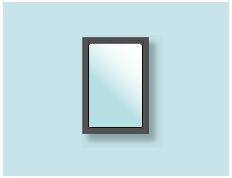

Structural dimensions
(W) 645mm x (L) 805mm

Viewable dimensions
(W) 373mm x (L) 539mm
**neo-S2**

Structural dimensions
(W) 645mm x (L) 1108mm

Viewable dimensions
(W) 379mm x (L) 842mm
**neo-S3**

Structural dimensions
(W) 727mm x (L) 1027mm

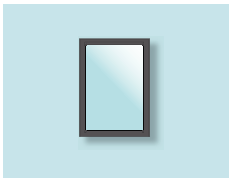


Viewable dimensions
(W) 461mm x (L) 761mm
**neo-S4**

Structural dimensions
(W) 727mm x (L) 1422mm

Viewable dimensions
(W) 461mm x (L) 1156mm
**neo-S5**

Structural dimensions
(W) 797mm x (L) 1108mm

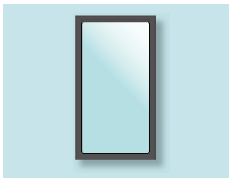


Viewable dimensions
(W) 531mm x (L) 842mm
**neo-S6**

Structural dimensions
(W) 882mm x (L) 1222mm

Viewable dimensions
(W) 616mm x (L) 956mm
**neo-S7**

Structural dimensions
(W) 882 x (L) 1717mm

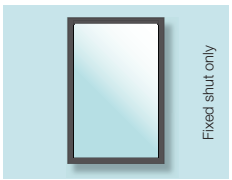


Viewable dimensions
(W) 616mm x (L) 1451mm
**neo-S8**

Structural dimensions
(W) 1101mm x (L) 1413mm

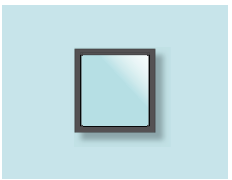
Viewable dimensions
(W) 835mm x (L) 1147mm
**neo-S9**

Structural dimensions
(W) 1207mm x (L) 1802mm



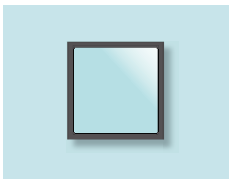

Viewable dimensions
(W) 941mm x (L)1536mm
**neo-S10**

Structural dimensions
(W) 882mm x (L) 882mm



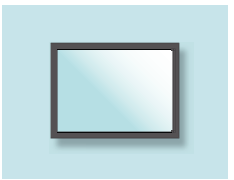
Viewable dimensions
(W) 616mm x (L) 616mm
**neo-S14**

Structural dimensions
(W) 1207mm x (L) 1207mm



Viewable dimensions
(W) 941mm x (L) 941mm
**neo-S15**

Structural dimensions
(W) 1222mm x (L) 882mm

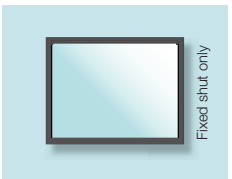


Viewable dimensions
(W) 956mm x (L) 616mm
**neo-S11**

Structural dimensions
(W) 1717mm x (L) 882mm

Viewable dimensions
(W) 1451mm x (L) 616mm
**neo-S12**

Structural dimensions
(W) 1802mm x (L)1207mm




Viewable dimensions
(W) 1536mm x (L) 941mm
**neo-S13**

Please see sections opposite for viewable and structural dimensions.



# The Conservation Rooflight®

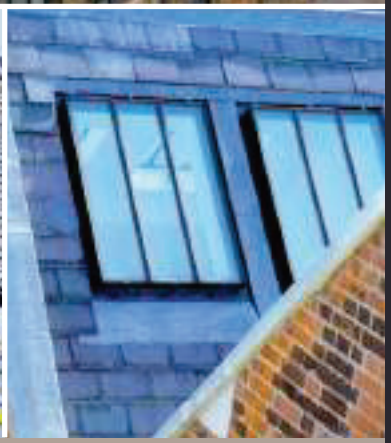
# Why specify the Conservation Rooflight®?

The Conservation Rooflight® has been continually specified by architects for over 25 years. We know architects specify this range because:

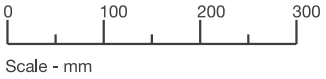
- Our founder, and architect, Peter King designed it. The Conservation Rooflight® is the original and still the most authentic design available
- With 15 standard sizes and a made to measure service, we will always have a size to fit your project. This means you can preserve the integrity of any historic building and avoid cutting existing rafters, keeping the Planning and Conservation Officers happy. You can also create practically unlimited arrays
- The linings on the inside go right up to the glass, giving a clean internal finish.

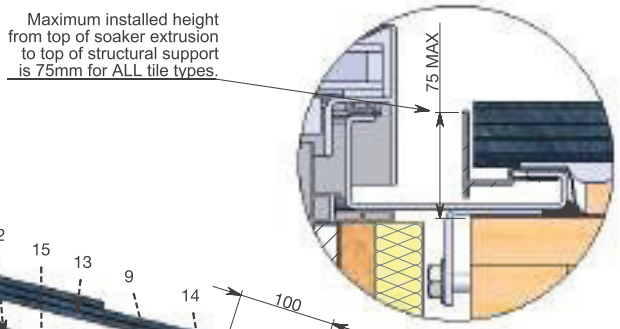
**For more technical information visit**
**www.therooflightcompany.co.uk/conservation**
or call **01993 833108**

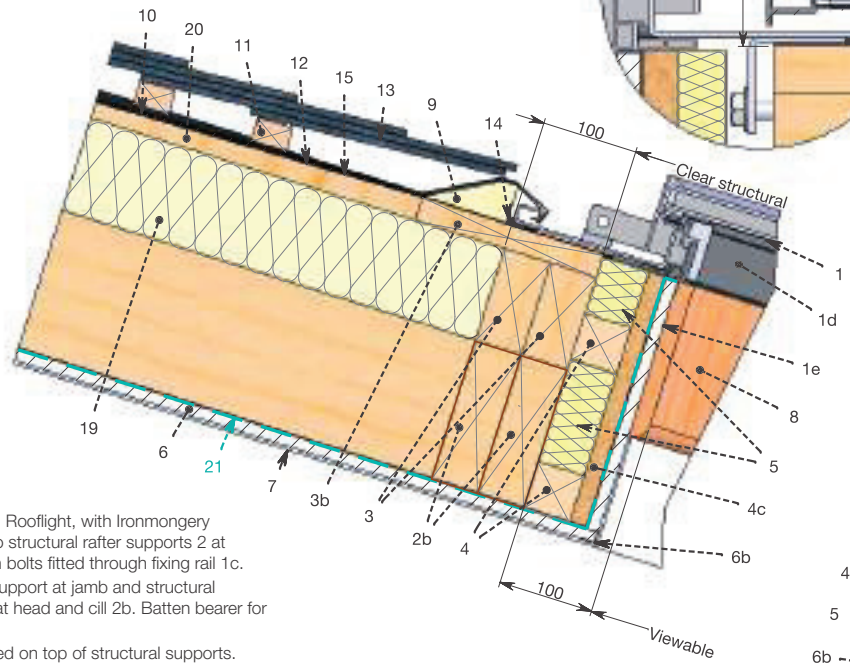
Suitable for pitched roofs between 17.5° and 65°

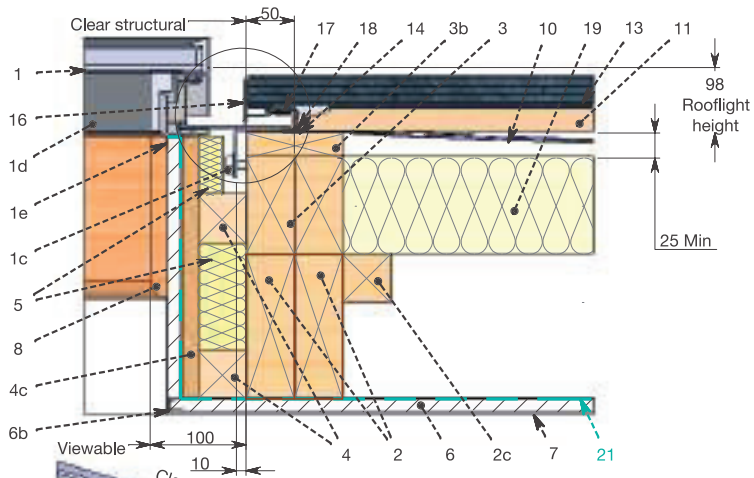


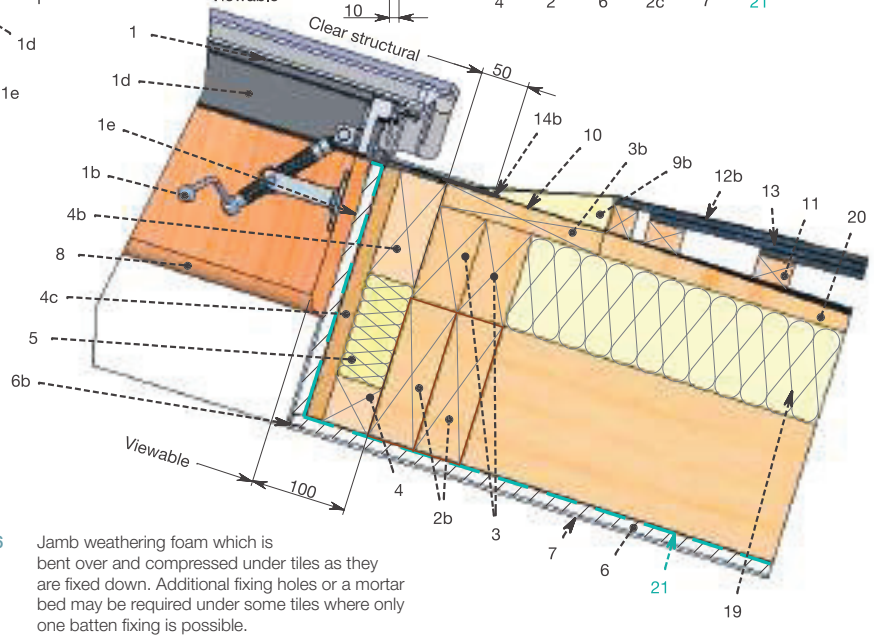
# The Conservation Rooflight®




## Key:

**1** The Conservation Rooflight, with Ironmongery Option 1b fixed to structural rafter supports 2 at jamb using coach bolts fitted through fixing rail 1c.

**2** Structural rafter support at jamb and structural trimmer support at head and cill 2b. Batten bearer for insulation 2c.

**3&3b** Timber bearer fixed on top of structural supports. Adjust height to create a flush installation with the roof tiles.

**4** Fix timber packers to structural support 2&2b at the top and the base of the roof build up. The cill timber packer 4b at the top of the roof build up should be larger to provide a secure fixing point for the ironmongery. Fix 18mm ply packer to the timber packers.

**5** Insulation fitted between timber packers 4.

**6** Plasterboard lining with plasterboard stop 6b to project the corner. Plasterboard fitted behind the thermoliner 1e.

**7** Plaster skim

**8** Timber reveal to align with rooflight linings 1d to provide 'frameless' internal appearance. Rooflight linings 1d MUST BE PAINTED with a timber finishing paint once the rooflight is installed to ensure longevity of this component. If the linings 1d have been factory painted, they do not require an additional paint finish. Please refer to label attached to Roof Window frame.

**9** Head hardwood tilting fillet.

**9b** Cill hardwood tilting fillet - to provide minimum 5 degree fall for shedding rain water.

**10** Line of breathable membrane. Roof membrane must be allowed to 'sag' between rafters.

**11** Softwood battens.

**12** Code 3 (consider using code 4 and clipping down roof tiles in severer exposures) lead flashing at head. Carry flashing up the roof and lap UNDER general roofing membrane 10 and UNDER head membrane 15.

**12b** Code 4 (consider clipping flashing and roof tiles down in severer exposures) lead flashing at cill over tilting fillet 9b. Make the flashing long enough to give triple lap to the tiles below.

**13** Roofing tiles.

**14** Perimeter silicone seal. Seal perimeter of rooflight 1 JUST PRIOR TO installation of the rooflight using a thick continuous bead of low modulus neutral cure silicone sealant. Ensure sealant to cill 14b is located in a position where it will be covered by the cill flange of the rooflight.

**15** Roofing membrane to rooflight head. Dress UNDER general roofing membrane.

**16** Jamb weathering foam which is bent over and compressed under tiles as they are fixed down. Additional fixing holes or a mortar bed may be required under some tiles where only one batten fixing is possible.

**17** Jamb weathering foam which is bent over and compressed under tiles as they are fixed down. Additional fixing holes or a mortar bed may be required under some tiles where only one batten fixing is possible.

**18** Jamb flashing aprons, part of the jamb flashing assembly (supplied as part of the Flashing Kit). They pass UNDER the battens but OVER the general roofing membrane. The battens are tacked in position at the rooflight jambs only until the Flashing Kit is installed and the jamb aprons are slid under them. Then they are fixed home.

**19** Insulation fitted on top of structural supports.

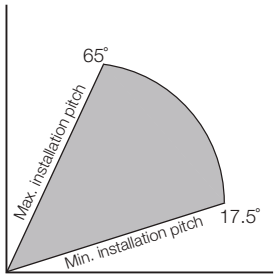
**20** Counter batten.

**21** Vapour barrier (Blue)

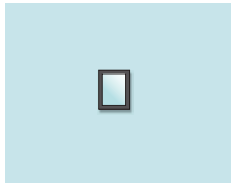
**Please Note:** These sectional details are provided as an installation suggestion. Due to the differing nature of installations we strongly advise you to consult your rooflight installer to verify fitness for purpose. This drawing does not constitute a structural proposal. Sufficiency of structural supports to be checked by rooflight purchaser's structural consultant.

# The Conservation Rooflight®
# Sizes

## Pitch Guide

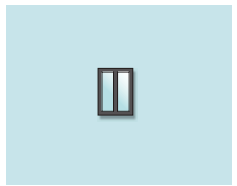



Structural dimensions
(W) 412mm x (L) 520mm



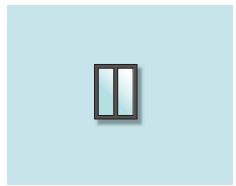
Viewable dimensions
(W) 212mm x (L) 320mm
**CR6**

Structural dimensions
(W) 463mm x (L) 622mm



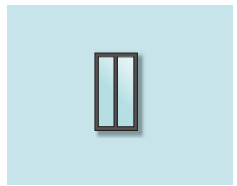
Viewable dimensions
(W) 263mm x (L) 422mm
**CR7**

Structural dimensions
(W) 565mm x (L) 725mm



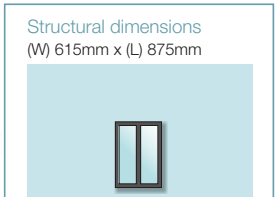
Viewable dimensions
(W) 365mm x (L) 525mm
**CR1**

Structural dimensions
(W) 565mm x (L) 1028mm



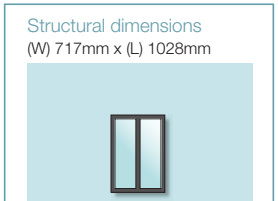
Viewable dimensions
(W) 365mm x (L) 828mm
**CR3**

Structural dimensions
(W) 615mm x (L) 875mm



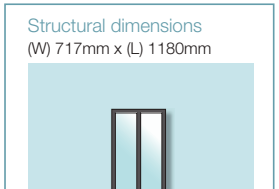
Viewable dimensions
(W) 415mm x (L) 675mm
**CR8**

Structural dimensions
(W) 717mm x (L) 1028mm



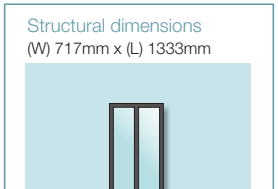
Viewable dimensions
(W) 517mm x (L) 828mm
**CR9**

Structural dimensions
(W) 717mm x (L) 1180mm



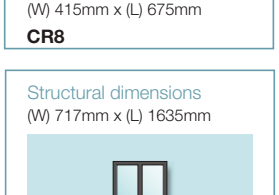
Viewable dimensions
(W) 517mm x (L) 980mm
**CR10**

Structural dimensions
(W) 717mm x (L) 1333mm



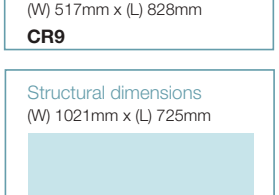
Viewable dimensions
(W) 517mm x (L) 1133mm
**CR14/2**

Structural dimensions
(W) 717mm x (L) 1635mm



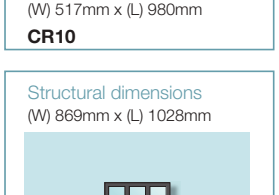
Viewable dimensions
(W) 517mm x (L) 1435mm
**CR15/2**

Structural dimensions
(W) 1021mm x (L) 725mm



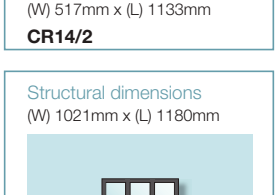
Viewable dimensions
(W) 821mm x (L) 525mm
**CR1/3**

Structural dimensions
(W) 869mm x (L) 1028mm



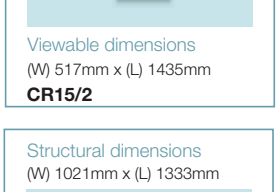
Viewable dimensions
(W) 669mm x (L) 828mm
**CR11**

Structural dimensions
(W) 1021mm x (L) 1180mm



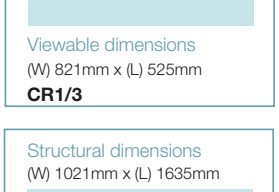
Viewable dimensions
(W) 821mm x (L) 980mm
**CR13**

Structural dimensions
(W) 1021mm x (L) 1333mm



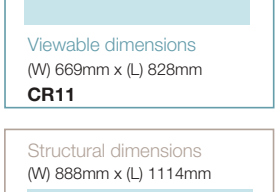
Viewable dimensions
(W) 821mm x (L) 1133mm
**CR14**

Structural dimensions
(W) 1021mm x (L) 1635mm



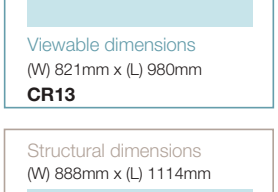
Viewable dimensions
(W) 821mm x (L) 1435mm
**CR15**

Structural dimensions
(W) 888mm x (L) 1114mm



Viewable dimensions
(W) 537mm x (L) 848mm
**E1LG**

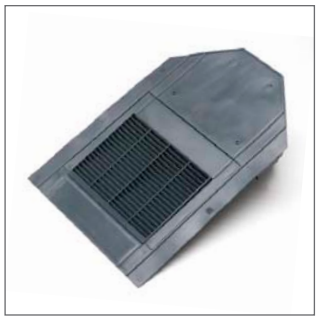
Structural dimensions
(W) 888mm x (L) 1114mm



Viewable dimensions
(W) 537mm x (L) 848mm
**E1RG**

Please see sections opposite for viewable and structural dimensions.

# Mini Uni-Line® Slate Vent



## Installation

The vent is positioned directly in-line with the slates below, and an inverted T opening is cut within the underlay to accommodate the downpipe. To ensure the integrity of the underlay a Klober Underlay Seal is strongly recommended. Once the downpipe has been located through the underlay opening, the slate vent is located on and fixed to the slate batten. The slates either side of the vent are laid and trimmed if necessary.

Mini Uni-Line® Slate Vent is a universal In-line Slate Vent that suits most small natural slates.

## Product features & benefits

- In-line design
- Fully wind tunnel tested
- Built in downpipe allows direct ventilation to roof space
- No soil/mechanical adaptor required

## Area of application

Suitable for:

- 400mm x 250mm (16 x 10") and below natural double-lap slates
- High or low level roof space ventilation
- Roof pitches of 22.5° and avove
- Small natural and fibre cement slates

## Material

UV resistant Polypropylene

## Colours / Product Codes

| | |
|---|---|
| Dark Slate | KG9631-0403 |
| Slate Grey | KG9631-0429 |

## Dimensions / Weight (per carton)

450mm long x 300mm wide x 147.5mm deep (excluding downpipe) / 7.8kg

## Packaging

10 pcs per carton

## Related products

| | |
|---|---|
| Uni-Flexipipe | KG979900 |
| Underlay Seal | KG973100 |

## Regulations and certifications

Complies fully with relevant Building Regulations and British Standards.

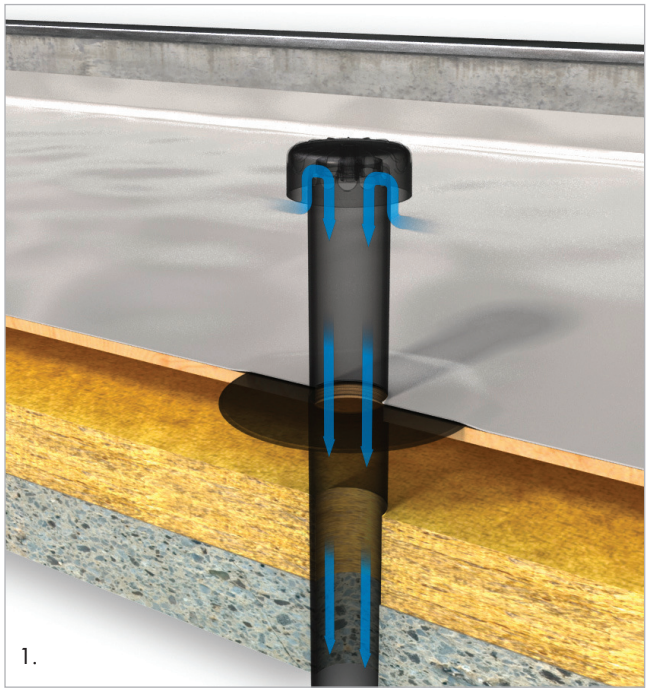
## PERFORMANCE / TECHNICAL DATA

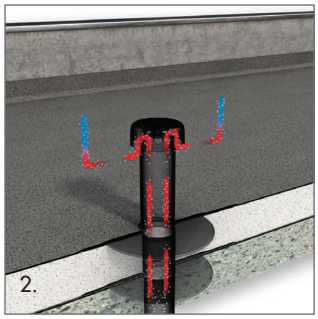
| | | | |
|---|---|---|---|
| Provides 6,500mm² effective vent area. | | | |
| Vent spacing | 5mm opening at 1.2m centres<br>10mm opening at 0.6m centres | | |
| Airflow resistance | 15 litres/sec<br>24 Pascals | 30 litres/sec<br>96 Pascals | 60 litres/sec<br>384 Pascals |

TS-00#20-UK-1017. We assume no liability for typing errors.

**Klober Ltd**
Unit 6F · East Midlands Distribution Centre · Short Lane · Castle Donington · Derbyshire · DE74 2HA
Tel. +44 (0)1332 813 050 · Fax +44 (0)1332 814 033 · info@klober.co.uk · **www.klober.co.uk**

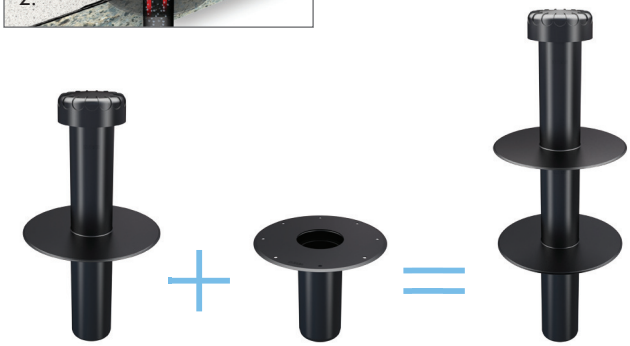
# Flavent® Mechanical Extract and Soil Vent Pipes




1. Installation example: Flavent® Single-piece breather/ mechanical soil extraction vent for ventilated roof with PVC roof membrane

2. Installation example: Flavent® Two-piece breather/ soil vent for unventilated roof with bitumen roof membrane



## Installation

- Living space breather vents, with height-extending components, need to achieve reliably high ventilation performances, whether they are single-piece or two-piece, for bitumen roofs or with a screw-ring system for plastic roof membranes
- In areas were heavy snowfall are recorded, ventilation pipes must be taken up at least 15cm above the roof surface
- If connectors between roof penetrations and ventilation pipes are connected by a hose, the hose should be no longer than a 1m maximum

**Room Vents:** Single and two-piece roof vents give efficient and reliable extract to rooms such as kitchens and bathrooms.
**Soil Vents:** Soil vent pipes prevent back siphonage occurring and reduces the likelihood of blockages in waste pipes.

## Product features & benefits

- Optimum living space air flow ventilation properties, providing fresh air supply and removing stale and fowl air
- Ideal connectors for bitumen and plastic roof membranes
- Rain-proof design
- Pipe extension options for variable insulation thicknesses – extendable by means of insulation package components
- Individual flange connectors enable quick installation

## Area of application

- Ventilation of bathrooms and toilets without a window to the outside (DIN 18017)
- Soiled water ventilation (DIN1986)
- Ventilation for extraction hoods in kitchens
- Controlled living space ventilation

## Material and properties

- High impact PVC, black
- Weather, frost and UV-resistant
- Fire rating B2 (no direct flame contact)
- Temperature resistance -40°/+80°C
- Flow temperature +40°C (for short periods max. +80°C)

## Dimensions

70mm, 100mm, 125mm, including TPE 80mm and 100/120mm options
Available in special diameters for soil pipes without socket connections for DN 100.

## Product codes

Please refer to table opposite

## Regulations and certifications

DIN 4108

## Related products

- Lower vent sections
- Upper pipe extensions
- Insulation package pipe extensions
- Tangit PVC adhesive

**Klober Ltd**
Unit 6F · East Midlands Distribution Centre · Short Lane · Castle Donington · Derbyshire · DE74 2HA
Tel. +44 (0)1332 813 050 · Fax +44 (0)1332 814 033 · www.klober.co.uk · info@klober.co.uk

KLÖBER

# 5" (125mm) Wall Fascia Soffit Vent Grille

Extractor Fans | Duct Grilles, Ceiling Vents & Wall Shutters | External Wall Grilles & Shutters | 5" (125mm) Wall Fascia Soffit Vent Grille

LARGER IMAGES

Not Reviewed Be the first!

## 5" (125mm) Wall Fascia Soffit Vent Grille

BOOKMARK

Ref: FIXED-5

**From: £5.99** (Incl. VAT @ 20%)

Select A Quantity: 1

### Select Your Colour

- (5") 125mm White £5.99
- (5") 125mm Brown £5.99
- (5") 125mm Black £5.99
- (5") 125mm Grey £5.99
- (5") 125mm Cotswold Stone £5.99
- (5") 125mm Terracotta £5.99

ADD TO BASKET

A comprehentive range of coloured grill vents that are ideal for finishing off your ventilation system. The grilles can be mounted in any wall, fascia or soffit and will fit to 125mm 5" dia ducting, perfect for toilet, bathroom or wet room air extractor systems.

- 125mm (5") diameter duct vent connection that will fit standard ducting and wall sleeves.
- Suitable for internal and external mounting.
- Can be mounted on the wall or ceiling.
- Ideal for roof soffit or fasica mounting.
- Easy screw fixing and connection to ducting.
- Insect/fly mesh included.
- Inner part of grille is easily removed for fitting & cleaing.

We have updated our colour range for our fixed blade grilles to suit traditional building materials such as terracotta and cotswold stone. We have also included colours to suit more modern architectual designs like grey and black. Grilles can either descreetly blend in offer a contrasting look.

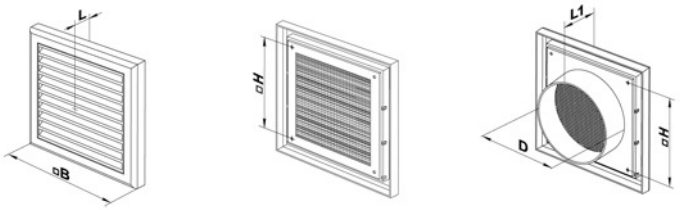
- White.
- Brown.
- Black.
- Grey
- Cotswold Stone (Beige).
- Terracotta.

£2.36

6" (150mm) Wall Fascia Soffit Vent Grille

£7.99

**Wall Vent Grille Dimensions**

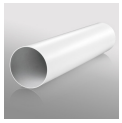



B = Overall size - 186x186mm square
H = Fixing hole centres - 142x142mm square
D = Duct connection size - 125mm diameter
L = Overall thickness of grille (without spigot) - 15mm
L1 = Overall thickness of grille (with spigot) - 45mm

| | |
|---|---|
|  | **White Finish**<br><br>Our most popular colur. Matches well to gloss or matt white painted wood or uPVC windows, frames, fascias and roof soffits. |
|  | **Dark Brown Finish**<br><br>The brown finish has been specially selected for houses that have a dark wood finish. |
|  | **Black**<br><br>A stylish colour suited to a more modern look and matches well with with the new style of black edged glass. |
| | **Grey**<br><br>Suited for modern houses, commercial building, churches and town dwellings. |

| | |
|---|---|
|  | |
|  | **Cotswold Stone**<br>A good look for period properties, cottages and light stone coloured houses. |
|  | **Terracotta**<br>A very comon new house colour, mainly used for town houses and newer buildings. |

**People who bought this item also bought:**

| Plastic Wall Plate | Plastic Solid Ducting | Flexible Ducting - Aluminium | 6" (150mm) Wall Fascia Soffit Vent Grille |
|---|---|---|---|
|  |  |  |  |
| £1.10 | £2.36 | £4.84 | £7.99 |

BACK

Fantronix Limited Useful Links

**Information**
- Technical Support
- Quiet & Silent Extractor Fans
- Ventilation Conversion Values
- Choosing A Heat Recovery Ventilation Unit
- DIY Video
- Extractor Fan Control Options Explained
- What is Ventilation?
- Recommended Air Change Rates
- Bathroom Zones Explained 17th Edition 3
- Fitting an Extractor Fan in your Home

**Extractor Fans**
- Bathroom Extractor Fans
- Kitchen Extractor Fans
- Toilet/Cloak Extractor Fans
- Shower/Wet Room Extractor
- Office Extractor Fans
- Utility Room Extractor Fans
- Inline Fans Duct Mounted
- Whole House Ventilation

**Fan Controls**

**Heat Recovery Systems**
- Blauberg Vento Heat Recovery Unit + WiFi
- Blauberg Vento DUO Heat Recovery Unit
- Aircycle 1.2 Heat Recovery Unit
- Blauberg Komfort EC S5B200 MVHR Unit
- Polypipe Silavent HRX2 Greenline MVHR Unit
- Blauberg Komfort Ultra D-105 MVHR Unit
- Blauberg Komfort Ultra EC-L300H MVHR Unit
- Blauberg Komfort Ultra EC-S300 MVHR Unit

**Round Ducting**
- Round Pipe Duct & Fittings
- Flat Plastic Duct & Fittings
- Ventilation Duct & Vent Fitting Kits

**Hydroponics**

**Grilles & Vents**
- Internal Wall & Ceiling Grilles
- External Wall Grilles & Shutters
- Passive Ventilation Grilles

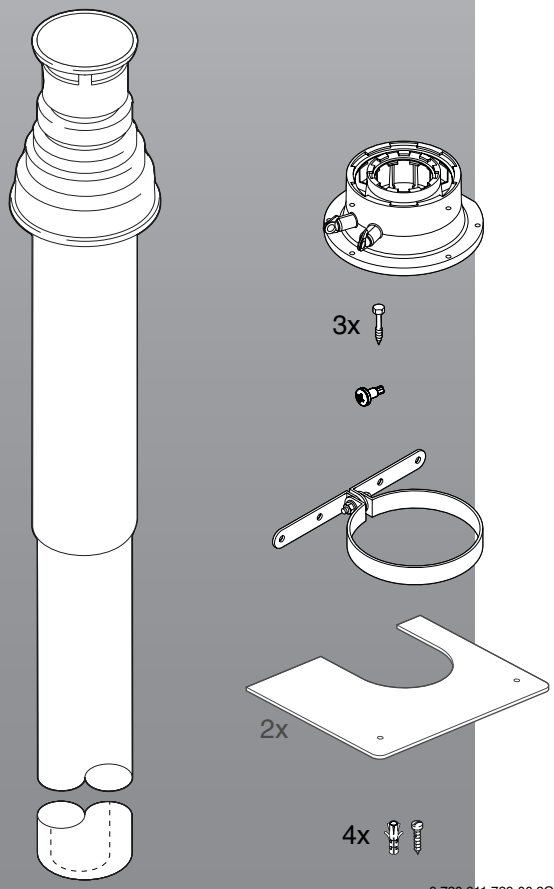
- User Guides & Instructions
- How to choose a hydroponic carbon filter
- Exhibitions
- Extractor Fan Spares
- 2 Speed Extractor Fan Trickle Boost Switch
- Extractor Fan Speed Controllers
- Speed Controllers for Woods Fans
- Extractor Fan Sensors & Timers
- SELV 12v Fan Transformers
- Blauberg Komfort EC SB 160 MVHR Unit
- Blauberg Komfort EC SB 250 MVHR Unit
- Blauberg Komfort EC SB 350 MVHR Unit
- Blauberg Komfort EC SB 550 MVHR Unit
- Blauberg Komfort EC DB 160 MVHR Unit
- Blauberg Komfort EC DB 350 MVHR Unit
- Passive Heat Recovery Ventilation Unit
- Ducting & Hose for Heat Recovery Ventilation
- Duct Fittings for Heat Recovery Ventilation
- MVHR Condensation Drain Kit
- Heat Recovery Duct Wrap Insulation
- Ceiling & Wall Grilles for Heat Recovery Systems
- Trickle Vent Window Grille uPVC
- Humidity Controlled Trickle Vent Window Grille
- Humidity Controlled Extract Grille
- Passive Stack Roof Ridge Vent

# INSTALLATION INSTRUCTIONS FOR FLUE KIT

## VERTICAL FLUE TERMINAL ASSEMBLY Ø 60/100 MM

# 7 719 002 430

FOR GAS CONDENSING APPLIANCES:
**GREENSTAR CDi COMBI/SYSTEM/REGULAR, GREENSTAR Si, GREENSTAR i JUNIOR/i SYSTEM, GREENSTAR Ri**




6 720 611 739-00.2O

UK/IE

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

WORCESTER
Bosch Group

6 720 611 739 GB (2009/09)

# CONTENTS

# 1 SYMBOLS AND SAFETY PRECAUTIONS

## 1.1 EXPLANATION OF SYMBOLS

### WARNING SYMBOLS

Safety instructions in this document are framed and identified by a warning triangle which is printed on a grey background.

Electrical hazards are identified by a lightning symbol surrounded by a warning triangle.

Signal words indicate the seriousness of the hazard in terms of the consequences of not following the safety instructions.

- **NOTICE** indicates possible damage to property or equipment, but where there is no risk of injury.
- **CAUTION** indicates possible injury.
- **WARNING** indicates possible severe injury.
- **DANGER** indicates possible risk to life.

### IMPORTANT INFORMATION

Notes contain important information in cases where there is no risk of personal injury or material losses and are identified by the symbol shown on the left. They are bordered by horizontal lines above and below the text.

### ADDITIONAL SYMBOLS

| Symbol | Meaning |
|---|---|
| ▶ | a step in an action sequence |
| → | a reference to a related part in the document or to other related documents |
| • | a list entry |
| – | a list entry (second level) |

*Tab. 1*

## 1.2 SAFETY PRECAUTIONS

### IF YOU SMELL GAS

- ▶ **Do not** smoke or strike matches.
- ▶ **Do not** turn electrical switches **ON or OFF.**
- ▶ Put out naked flames.
- ▶ Open doors and windows.
- ▶ Keep people away from the affected area.
- ▶ Turn off the control valve at the meter.
- ▶ Call your gas company.

-or-

- ▶ Call emergency number 0800 111 999.

### IF YOU SMELL FUMES FROM THE APPLIANCE

- ▶ Switch off the appliance.
- ▶ Open windows and doors.
- ▶ Inform your heating engineer.

### INSTALLATION INSTRUCTIONS

Please read these instructions carefully before starting installation. If you are in any doubt contact Worcester Technical Support.

These installation instructions must be read in conjunction with the appliance manual.

Please leave these instructions with the user or at the gas meter after installation or servicing.

Distance learning and training courses are available from Worcester, Bosch Group.

### BENCHMARK

Please leave these instructions with the completed Benchmark Checklist (or a certificate confirming compliance with IS 813, EIRE only) with the owner after installation or servicing.

The Benchmark Checklist can be found in the back two pages of the appliance installation manual.

**FITTING AND MODIFICATIONS**

Fitting the flue system to the appliance must be carried out by a GAS SAFE registered, competent person in accordance with these installation instructions and the current Gas Safety Regulations (Installation and Use).

Flue systems must not be modified in any way other than as described in the fitting instructions. Any misuse or unauthorised modifications to the appliance, flue or associated components and systems will invalidate the warranty. The manufacturer accepts no liability arising from any such actions, excluding statutory rights.

- ▶ Position the flue terminal in such a way so that combustion products do not enter the building or cause a nuisance.
- ▶ Position the flue in such a way so the flue does not cause an obstruction.
- ▶ Ensure the flue terminal is not obstructed and combustion products can discharge without hindrance.
- ▶ Fit the flue according to the regulations and standards.

**SERVICING**

Advise the user to have the system serviced annually by a GAS SAFE registered, competent person using approved spares, to help maintain the economy, safety and reliability of the appliance.

The service engineer must complete the Service Record on the Benchmark Checklist after each service.

# 2 INSTALLATION REGULATIONS

**Current Gas Safety Regulations (Installation and Use):**
Failure to install flue systems correctly could lead to prosecution.
All flue systems and associated components must be installed by a GAS SAFE registered, competent person in accordance with the following regulations.

Relevant regulations:

- Gas Safety Regulations 1998 (Installation and Use)
- Building Regulations
- Building Regulations (Northern Ireland)
- Building Standards (Scotland) (Consolidation)
- IS 813 (Eire)
- IGE “Gas Installation in Timber Frame Buildings”
- Any other local requirement

The relevant British Standards to be followed, include:

- BS5440:1
  Flues and ventilation for gas appliances of rated heating not exceeding 70 kW (net): Flues
- BS5440:2
  Flues and ventilation for gas appliances of rated heating not exceeding 70 kW (net): Air Supply
- BS7698
  Installation of gas fired appliances of rated input up to 70 kW (net)

If no specific instruction is given, refer to the British Standard Codes of Practice.

# 3 USE

## 3.1 GENERAL

The installation of a gas condensing appliance must be in accordance with the relevant British Standard, the relevant Building Regulations and any local rules.

The surface temperature of the flue is below 85 °C. Therefore the distance from a combustible building material is kept to a minimum of 5 mm.

**FLUEING TO $C_{33}$:**

The flue gas accessory is part of CE approval when discharging flue gas according to $C_{33}$. For this reason, only the original flue gas accessories may be used.

All illustration dimensions are shown in mm unless stated otherwise.

## 3.2 STANDARD SPECIFICATIONS

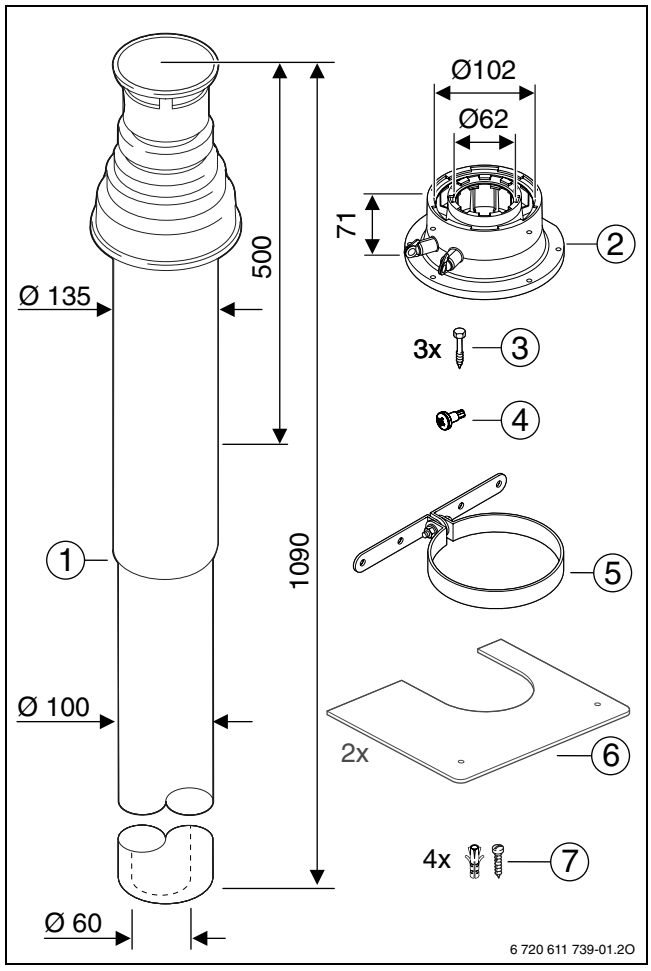



*Fig. 1*

**1** Vertical Flue Terminal Assembly 7 719 002 430
**2** Adaptor Ø 60/100 mm
**3** Screws
**4** Securing screws
**5** Clamp
**6** Fire stop plate
**7** Screws and wall plugs

# 4 EXAMPLES OF INSTALLATION OF VERTICAL FLUE WITH ROOF EXIT

## 4.1 STRAIGHT FLUE WITHOUT BENDS

| Appliances | $L_{max}$ |
|---|---|
| **GREENSTAR 24i/28i JUNIOR**<br>**GREENSTAR 25Si/30Si**<br>**GREENSTAR 12i/15i/18i/24i SYSTEM**<br>**GREENSTAR 12 Ri/15 Ri/18 Ri/24 Ri** | 6.4 m |
| **GREENSTAR 27CDi** | 11.5 m |
| **GREENSTAR 30CDi**<br>**GREENSTAR 37CDi** | 8.0 m |
| **GREENSTAR 40CDi REGULAR**<br>**GREENSTAR 42CDi** | 7.5 m |
| **GREENSTAR 30CDi SYSTEM/REGULAR** | 9.4 m |

*Tab. 2*

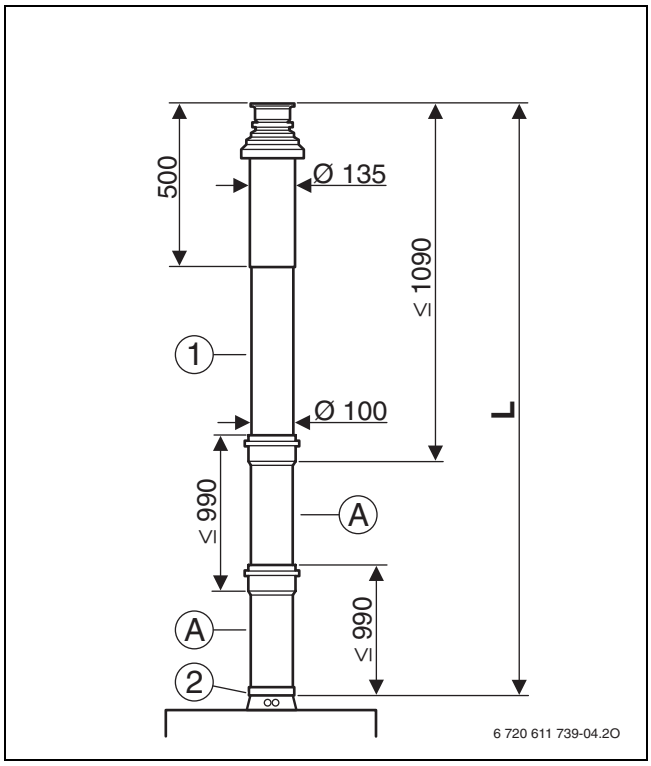



*Fig. 2*

**1** Vertical Flue Terminal Assembly
**2** Adaptor Ø 60/100 mm
**A** Extension

## 4.2 STRAIGHT FLUE WITH TWO 45°-BENDS

| Appliances | $L_{max}$ |
|---|---|
| **GREENSTAR 24i/28i JUNIOR**<br>**GREENSTAR 25Si/30Si**<br>**GREENSTAR 12i/15i/18i/24i SYSTEM**<br>**GREENSTAR 12 Ri/15 Ri/18 Ri/24 Ri** | 4.4 m |
| **GREENSTAR 27CDi** | 10.0 m |
| **GREENSTAR 30CDi**<br>**GREENSTAR 37CDi** | 6.5 m |
| **GREENSTAR 40CDi REGULAR**<br>**GREENSTAR 42CDi** | 6.0 m |
| **GREENSTAR 30CDi SYSTEM/REGULAR** | 7.9 m |

*Tab. 3*

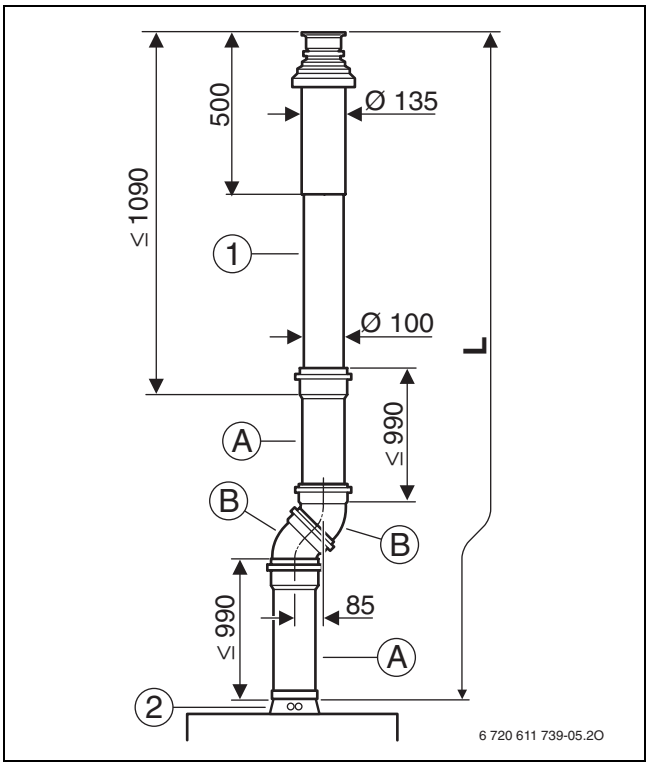



*Fig. 3*

**1** Vertical Flue Terminal Assembly
**2** Adaptor Ø 60/100 mm
**A** Extension
**B** 45° bend

## 4.3 STRAIGHT FLUE WITH TWO 90°-BENDS

| Appliances | $L_{max}$ |
|---|---|
| **GREENSTAR 24i/28i JUNIOR**<br>**GREENSTAR 25Si/30Si**<br>**GREENSTAR 12i/15i/18i/24i SYSTEM**<br>**GREENSTAR 12 Ri/15 Ri/18 Ri/24 Ri** | 2.4 m |
| **GREENSTAR 27CDi** | 8.5 m |
| **GREENSTAR 30CDi**<br>**GREENSTAR 37CDi** | 5.0 m |
| **GREENSTAR 40CDi REGULAR**<br>**GREENSTAR 42CDi** | 4.5 m |
| **GREENSTAR 30CDi SYSTEM/REGULAR** | 6.4 m |

*Tab. 4*

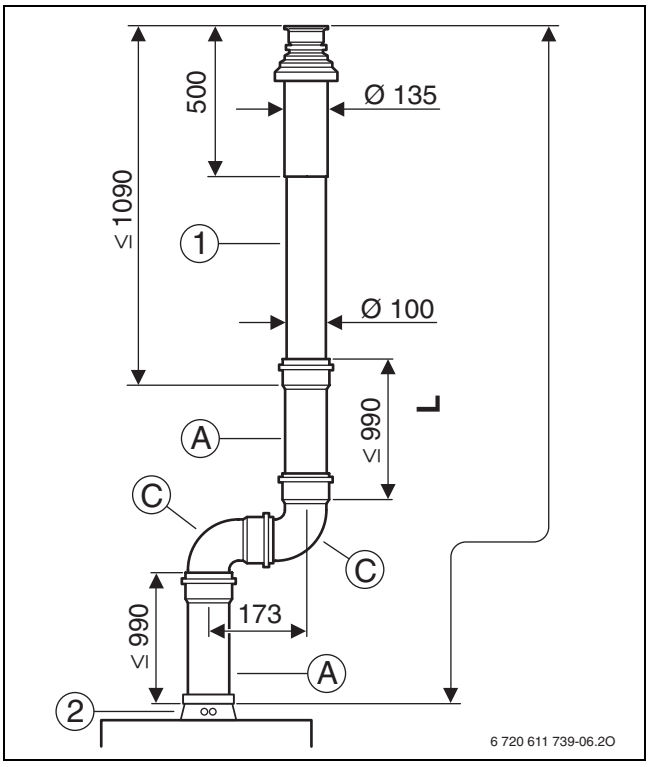



*Fig. 4*

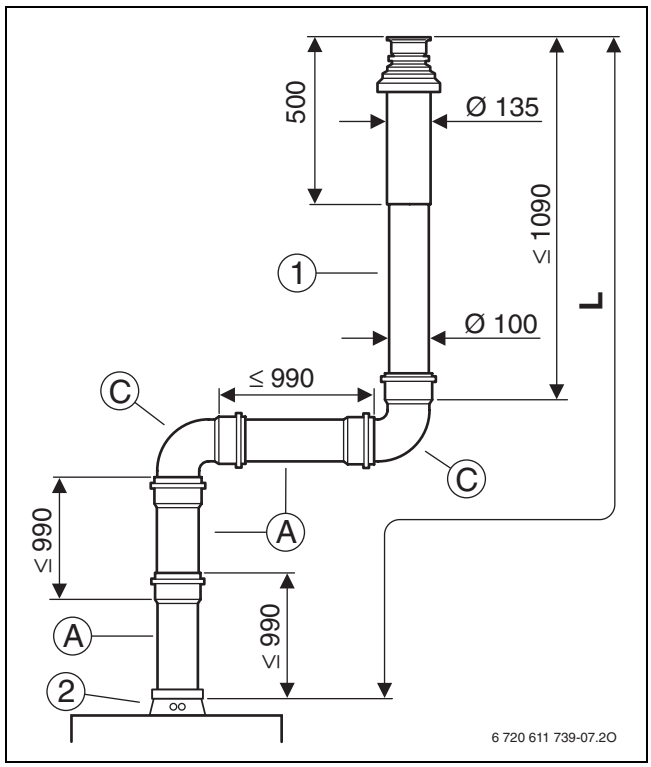



*Fig. 5*

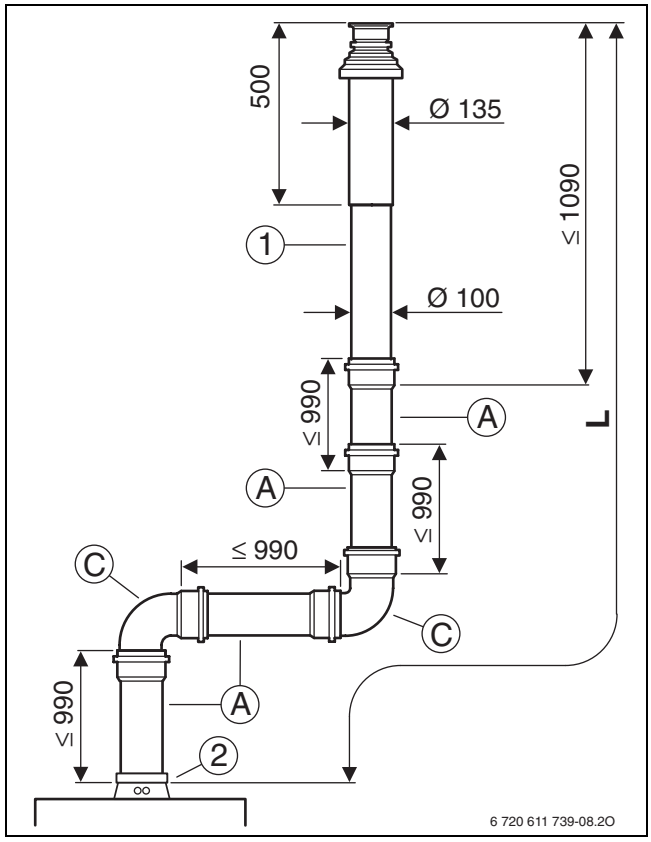



*Fig. 6*

**Key to Fig. 4, 5 and 6:**

**1** Vertical Flue Terminal Assembly
**2** Adaptor Ø 60/100 mm
**A** Extension
**C** 90° bend

# 5 MOUNTING

## 5.1 NOTES ON FITTING

- The vertical flue (7 719 002 430) can be extended at any point between the adaptor [2] and the flue terminal assembly [1] using the flue kits “bend 45°”, “bend 90°” or “extension”.
- For flue pipe maximum and equivalent lengths with the usage of bends refer to the installation instructions with the appliance.
- Horizontal flue sections should be fitted with an incline of 3° (= 5,2 %, 5,2 cm per meter) in the direction of flow of the flue gases.

## 5.2 ROOF-EXIT CLEARANCES

### 5.2.1 FLAT ROOF

| | Combustible building material | Non-combustible building material |
|---|---|---|
| **X** | ≥ 1500 mm | ≥ 500 mm |

*Tab. 5*

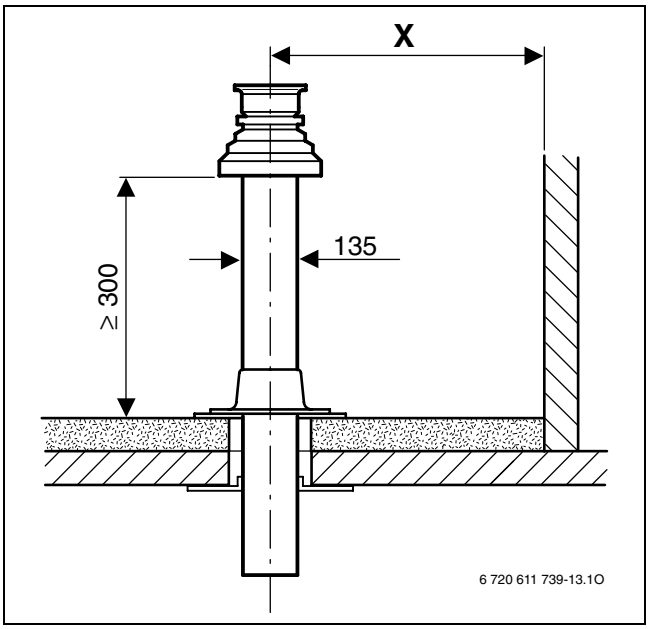



*Fig. 7*

### 5.2.2 INCLINED ROOF

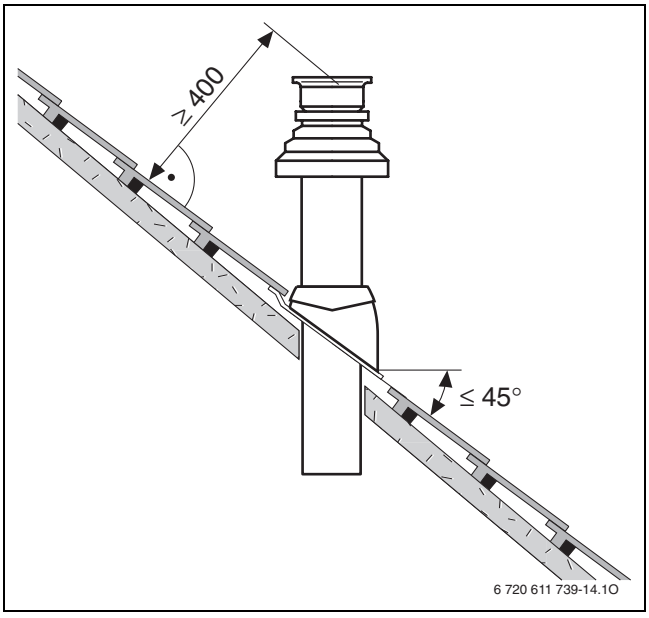



*Fig. 8*

## 5.3 FITTING THE FLUE

### 5.3.1 ADAPTOR

- Grease the flue-pipe seal of the adaptor with solvent-free grease (e.g. Vaseline).
- Unscrew the screws around the flue connection on the air box.

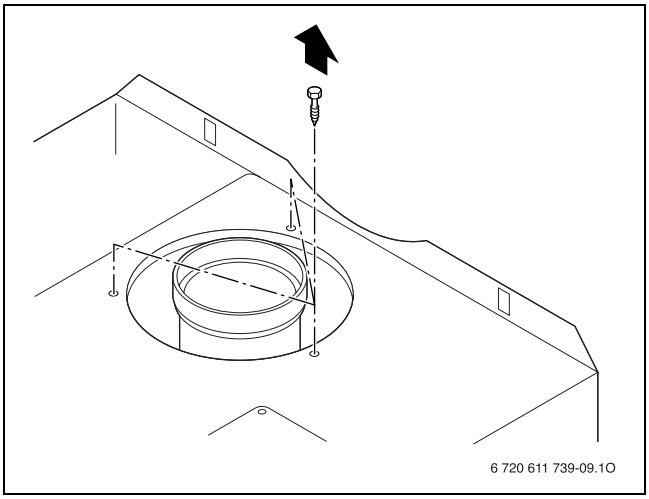



*Fig. 9*

- Align adaptor so that the flue testing points are facing forwards.
- Fix adaptor [2] in place using screws [3] of 7 719 002 430.

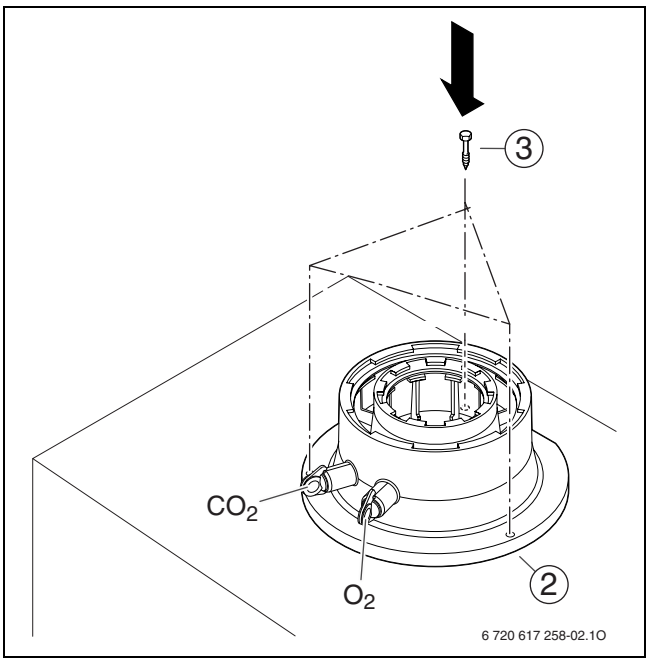



*Fig. 10*

**2** Adaptor
**3** Screw

- Connect rest of flue (7 719 002 430, “bend 45°”, “bend 90°”, “extension”) to adaptor [2] and secure with screw [4].

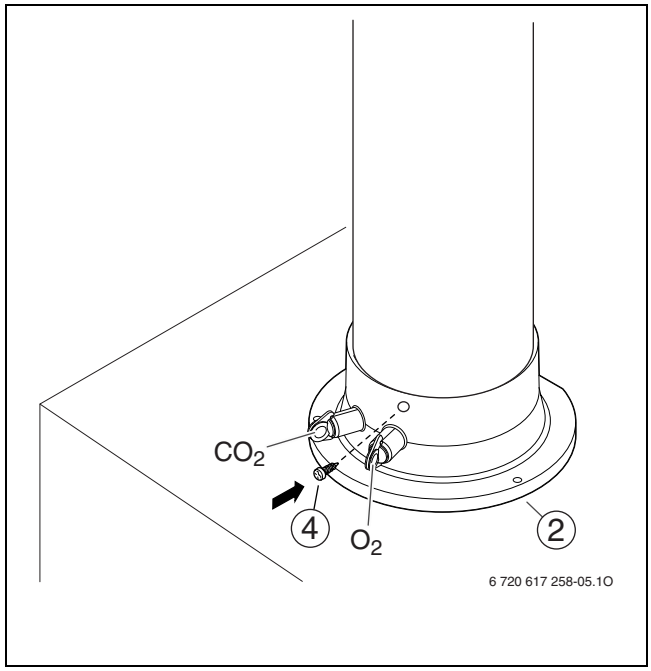



*Fig. 11*

**2** Adaptor
**4** Securing screw

### 5.3.2 VERTICAL FLUE TERMINAL ASSEMBLY

- Determine the length $L_V$ of the air pipe.

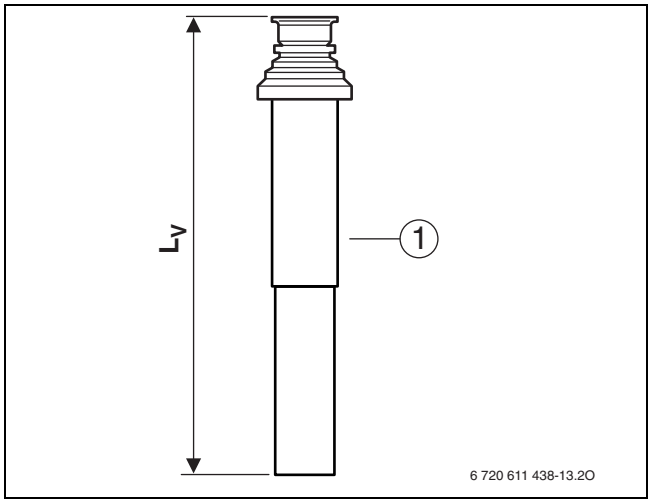



*Fig. 12*

**1** Vertical Flue Terminal Assembly

- Cut off the **air pipe** at a right angle, deburr the cut edges and clean.
- Determinate the length $L_A = L_V + 50$ mm of the flue pipe.

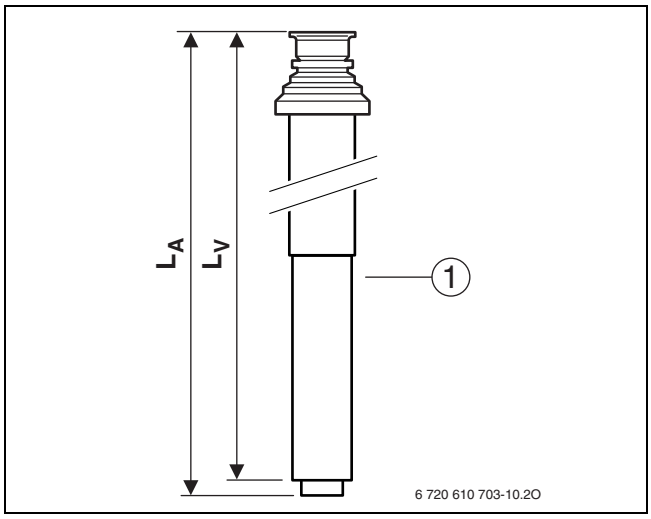



*Fig. 13*

**1** Vertical Flue Terminal Assembly

- Cut off the **flue pipe** at a right angle, deburr the cut edges and clean.
- Lightly grease the seals on the sleeves with a solvent-free grease (e.g. Vaseline).
- Fit pipes together by twisting and pushing home as far as possible secure with screw.

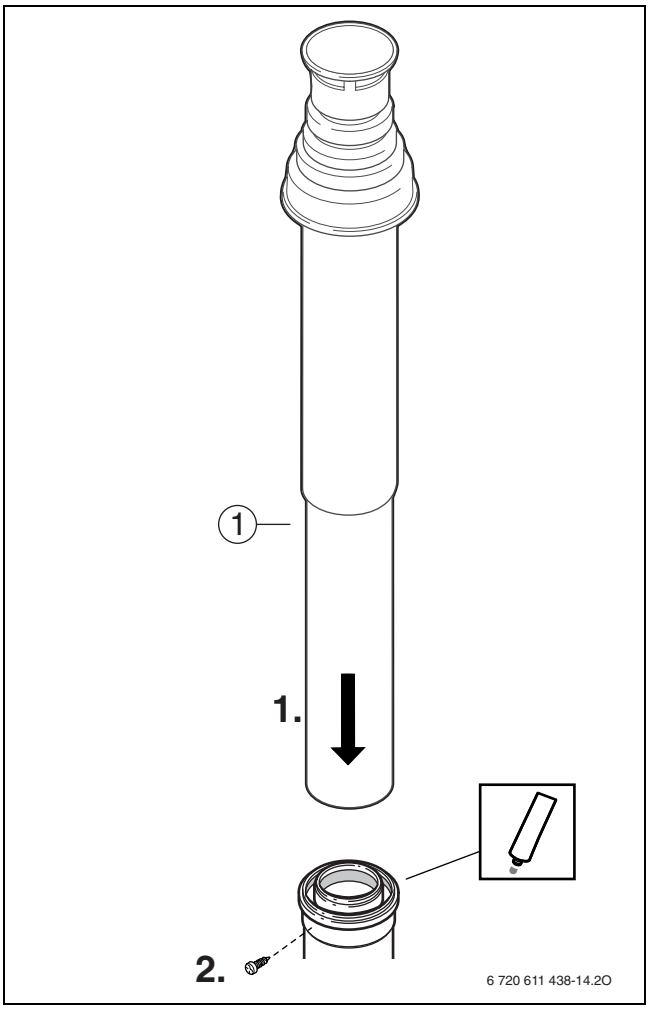



*Fig. 14*

**1** Vertical Flue Terminal Assembly

### 5.3.3 CLAMP

If necessary

- Fix the vertical flue terminal assembly with the clamp.

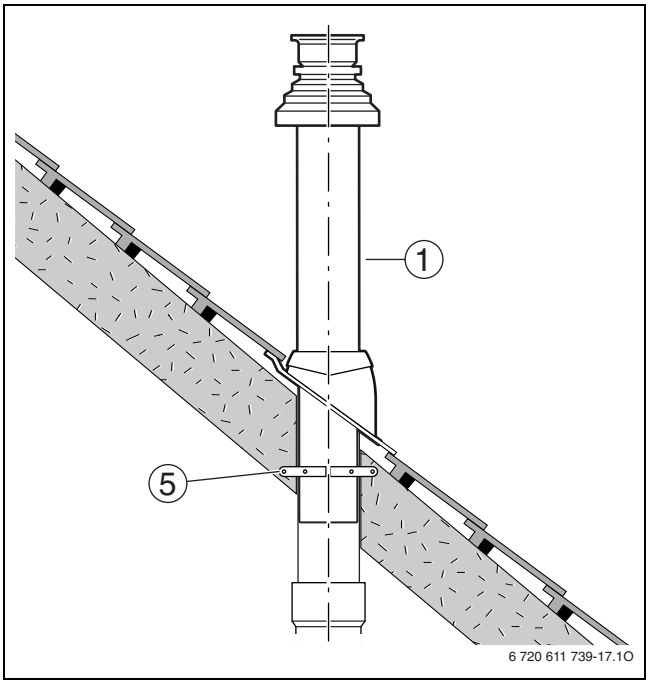



*Fig. 15*

**1** Vertical Flue Terminal Assembly
**5** Clamp

### 5.3.4 FIRE STOP PLATE

If necessary

- Mount the fire stop plate.

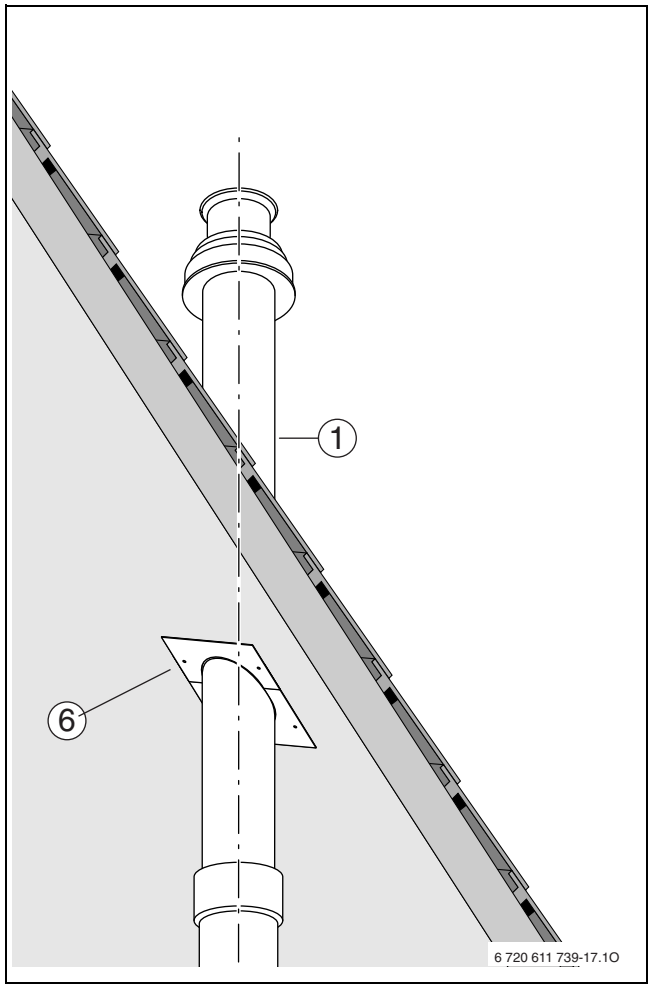



*Fig. 16*

**1** Vertical Flue Terminal Assembly
**6** Fire stop plate

## CONTACT INFORMATION

**WORCESTER, BOSCH GROUP:**

| | |
|---|---|
| TECHNICAL: | 08705 266241 |
| SERVICE: | 08457 256206 |
| SPARES: | 01905 752571 |
| LITERATURE: | 01905 752556 |
| TRAINING: | 01905 752526 |
| SALES: | 01905 752640 |
| **WEBSITE:** | **worcester-bosch.co.uk** |

Worcester, Bosch Group
Cotswold Way, Warndon, Worcester WR4 9SW.
Tel. 01905 754624 Fax. 01905 754619
Worcester, Bosch Group is a brand name of Bosch Thermotechnology Ltd.
**worcester-bosch.co.uk**

6 720 611 739

WORCESTER
Bosch Group

East Lothian Council

John Muir House Haddington EH41 3HA Tel: 01620 827 216 Email: planning@eastlothian.gov.uk

Applications cannot be validated until all the necessary documentation has been submitted and the required fee has been paid.

Thank you for completing this application form:

ONLINE REFERENCE 100094440-001

The online reference is the unique reference for your online form only. The Planning Authority will allocate an Application Number when your form is validated. Please quote this reference if you need to contact the planning Authority about this application.

## Type of Application

What is this application for? Please select one of the following: *

☒ Application for planning permission (including changes of use and surface mineral working).

☐ Application for planning permission in principle.

☐ Further application, (including renewal of planning permission, modification, variation or removal of a planning condition etc)

☐ Application for Approval of Matters specified in conditions.

## Description of Proposal

Please describe the proposal including any change of use: * (Max 500 characters)

Residential Development of 9 Dwellings by Conversion, Alterations & New Build Construction, Demolition and Formation of Access, Parking & Associated Infrastructure.

Is this a temporary permission? * ☐ Yes ☒ No

If a change of use is to be included in the proposal has it already taken place? (Answer 'No' if there is no change of use.) * ☐ Yes ☒ No

Has the work already been started and/or completed? *

☒ No ☐ Yes – Started ☐ Yes - Completed

## Applicant or Agent Details

Are you an applicant or an agent? * (An agent is an architect, consultant or someone else acting on behalf of the applicant in connection with this application) ☐ Applicant ☒ Agent

# Agent Details

Please enter Agent details

| | | | |
|---|---|---|---|
| Company/Organisation: | Ferguson Planning | | |
| Ref. Number: | | You must enter a Building Name or Number, or both: * | |
| First Name: * | Ferguson | Building Name: | Shiel House |
| Last Name: * | Planning | Building Number: | 54 |
| Telephone Number: * | [redacted] | Address 1 (Street): * | Island Street |
| Extension Number: | | Address 2: | |
| Mobile Number: | | Town/City: * | Galashiels |
| Fax Number: | | Country: * | Scotland |
| | | Postcode: * | TD1 1NU |
| Email Address: * | [redacted] | | |

Is the applicant an individual or an organisation/corporate entity? *

☒ Individual ☐ Organisation/Corporate entity

# Applicant Details

Please enter Applicant details

| | | | |
|---|---|---|---|
| Title: | Other | You must enter a Building Name or Number, or both: * | |
| Other Title: | Mr & Mrs | Building Name: | Shiel House |
| First Name: * | Bill | Building Number: | 54 |
| Last Name: * | Whiteford | Address 1 (Street): * | Island Street |
| Company/Organisation | per Ferguson Planning | Address 2: | |
| Telephone Number: * | | Town/City: * | Galashiels |
| Extension Number: | | Country: * | Scotland |
| Mobile Number: | | Postcode: * | TD1 1NU |
| Fax Number: | | | |
| Email Address: * | [redacted] | | |

## Site Address Details

Planning Authority: East Lothian Council

Full postal address of the site (including postcode where available):

Address 1:

Address 2:

Address 3:

Address 4:

Address 5:

Town/City/Settlement:

Post Code:

Please identify/describe the location of the site or sites

Northing 664775 Easting 351547

## Pre-Application Discussion

Have you discussed your proposal with the planning authority? * ☒ Yes ☐ No

## Pre-Application Discussion Details Cont.

In what format was the feedback given? *

☐ Meeting ☐ Telephone ☒ Letter ☐ Email

Please provide a description of the feedback you were given and the name of the officer who provided this feedback. If a processing agreement [note 1] is currently in place or if you are currently discussing a processing agreement with the planning authority, please provide details of this. (This will help the authority to deal with this application more efficiently.) * (max 500 characters)

Pre-application advice was received from Planning Officer Linda Ritchie on 3rd July 2017 in response to Ferguson Planning's enquiry letter and plan dated 20th June 2017.The Officer summarised the Council's Housing in the Countryside policy.

Title: Ms Other title:

First Name: Linda Last Name: Ritchie

Correspondence Reference Number: Dev61065 Date (dd/mm/yyyy): 03/07/2017

Note 1. A Processing agreement involves setting out the key stages involved in determining a planning application, identifying what information is required and from whom and setting timescales for the delivery of various stages of the process.

## Site Area

Please state the site area: 0.79

Please state the measurement type used: ☒ Hectares (ha) ☐ Square Metres (sq.m)

## Existing Use

Please describe the current or most recent use: * (Max 500 characters)

Disused (for over 10 years) former agricultural steading.

## Access and Parking

Are you proposing a new altered vehicle access to or from a public road? * ☒ Yes ☐ No

If Yes please describe and show on your drawings the position of any existing. Altered or new access points, highlighting the changes you propose to make. You should also show existing footpaths and note if there will be any impact on these.

Are you proposing any change to public paths, public rights of way or affecting any public right of access? * ☐ Yes ☒ No

If Yes please show on your drawings the position of any affected areas highlighting the changes you propose to make, including arrangements for continuing or alternative public access.

How many vehicle parking spaces (garaging and open parking) currently exist on the application Site? 0

How many vehicle parking spaces (garaging and open parking) do you propose on the site (i.e. the Total of existing and any new spaces or a reduced number of spaces)? * 20

Please show on your drawings the position of existing and proposed parking spaces and identify if these are for the use of particular types of vehicles (e.g. parking for disabled people, coaches, HGV vehicles, cycles spaces).

## Water Supply and Drainage Arrangements

Will your proposal require new or altered water supply or drainage arrangements? * ☒ Yes ☐ No

Are you proposing to connect to the public drainage network (eg. to an existing sewer)? *

☐ Yes – connecting to public drainage network

☒ No – proposing to make private drainage arrangements

☐ Not Applicable – only arrangements for water supply required

As you have indicated that you are proposing to make private drainage arrangements, please provide further details.

What private arrangements are you proposing? *

☒ New/Altered septic tank.

☐ Treatment/Additional treatment (relates to package sewage treatment plants, or passive sewage treatment such as a reed bed).

☐ Other private drainage arrangement (such as chemical toilets or composting toilets).

What private arrangements are you proposing for the New/Altered septic tank? *

☒ Discharge to land via soakaway.

☐ Discharge to watercourse(s) (including partial soakaway).

☐ Discharge to coastal waters.

Please explain your private drainage arrangements briefly here and show more details on your plans and supporting information: *

The Applicant owns surrounding land. The Engineer states in his report (p.8) that surface water should be collected and discharged to the current system of field drains. Foul effluent could be discharged to a header drain, connected across a suitable number of field tiles, discharged to a closed soakaway system, or discharged to a rumble drain providing secondary treatment before discharging into the existing drain running to the Kidlaw Burn. SEPA approval of drainage design will be obtained.

Do your proposals make provision for sustainable drainage of surface water?? * ☒ Yes ☐ No
(e.g. SUDS arrangements) *

Note:-

Please include details of SUDS arrangements on your plans

Selecting 'No' to the above question means that you could be in breach of Environmental legislation.

Are you proposing to connect to the public water supply network? *

☒ Yes
☐ No, using a private water supply
☐ No connection required

If No, using a private water supply, please show on plans the supply and all works needed to provide it (on or off site).

## Assessment of Flood Risk

Is the site within an area of known risk of flooding? * ☐ Yes ☒ No ☐ Don't Know

If the site is within an area of known risk of flooding you may need to submit a Flood Risk Assessment before your application can be determined. You may wish to contact your Planning Authority or SEPA for advice on what information may be required.

Do you think your proposal may increase the flood risk elsewhere? * ☐ Yes ☒ No ☐ Don't Know

## Trees

Are there any trees on or adjacent to the application site? * ☒ Yes ☐ No

If Yes, please mark on your drawings any trees, known protected trees and their canopy spread close to the proposal site and indicate if any are to be cut back or felled.

## Waste Storage and Collection

Do the plans incorporate areas to store and aid the collection of waste (including recycling)? * ☒ Yes ☐ No

If Yes or No, please provide further details: * (Max 500 characters)

The development design includes for bin stores within the buildings themselves to avoid the need for secondary stores.

## Residential Units Including Conversion

Does your proposal include new or additional houses and/or flats? * ☒ Yes ☐ No

How many units do you propose in total? * 9

Please provide full details of the number and types of units on the plans. Additional information may be provided in a supporting statement.

## All Types of Non Housing Development – Proposed New Floorspace

Does your proposal alter or create non-residential floorspace? * ☐ Yes ☒ No

## Schedule 3 Development

Does the proposal involve a form of development listed in Schedule 3 of the Town and Country Planning (Development Management Procedure (Scotland) Regulations 2013 * ☐ Yes ☒ No ☐ Don't Know

If yes, your proposal will additionally have to be advertised in a newspaper circulating in the area of the development. Your planning authority will do this on your behalf but will charge you a fee. Please check the planning authority's website for advice on the additional fee and add this to your planning fee.

If you are unsure whether your proposal involves a form of development listed in Schedule 3, please check the Help Text and Guidance notes before contacting your planning authority.

## Planning Service Employee/Elected Member Interest

Is the applicant, or the applicant's spouse/partner, either a member of staff within the planning service or an elected member of the planning authority? * ☐ Yes ☒ No

## Certificates and Notices

CERTIFICATE AND NOTICE UNDER REGULATION 15 – TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND) REGULATION 2013

One Certificate must be completed and submitted along with the application form. This is most usually Certificate A, Form 1, Certificate B, Certificate C or Certificate E.

Are you/the applicant the sole owner of ALL the land? * ☒ Yes ☐ No

Is any of the land part of an agricultural holding? * ☐ Yes ☒ No

## Certificate Required

The following Land Ownership Certificate is required to complete this section of the proposal:

Certificate A

# Land Ownership Certificate

Certificate and Notice under Regulation 15 of the Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Certificate A

I hereby certify that –

(1) - No person other than myself/the applicant was an owner (Any person who, in respect of any part of the land, is the owner or is the lessee under a lease thereof of which not less than 7 years remain unexpired.) of any part of the land to which the application relates at the beginning of the period of 21 days ending with the date of the accompanying application.

(2) - None of the land to which the application relates constitutes or forms part of an agricultural holding

Signed: Ferguson Planning

On behalf of: Mr & Mrs Bill Whiteford

Date: 27/04/2018

☒ Please tick here to certify this Certificate. *

## Checklist – Application for Planning Permission

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

Please take a few moments to complete the following checklist in order to ensure that you have provided all the necessary information in support of your application. Failure to submit sufficient information with your application may result in your application being deemed invalid. The planning authority will not start processing your application until it is valid.

a) If this is a further application where there is a variation of conditions attached to a previous consent, have you provided a statement to that effect? *

☐ Yes ☐ No ☒ Not applicable to this application

b) If this is an application for planning permission or planning permission in principal where there is a crown interest in the land, have you provided a statement to that effect? *

☐ Yes ☐ No ☒ Not applicable to this application

c) If this is an application for planning permission, planning permission in principle or a further application and the application is for development belonging to the categories of national or major development (other than one under Section 42 of the planning Act), have you provided a Pre-Application Consultation Report? *

☐ Yes ☐ No ☒ Not applicable to this application

Town and Country Planning (Scotland) Act 1997

The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013

d) If this is an application for planning permission and the application relates to development belonging to the categories of national or major developments and you do not benefit from exemption under Regulation 13 of The Town and Country Planning (Development Management Procedure) (Scotland) Regulations 2013, have you provided a Design and Access Statement? *

☐ Yes ☐ No ☒ Not applicable to this application

e) If this is an application for planning permission and relates to development belonging to the category of local developments (subject to regulation 13. (2) and (3) of the Development Management Procedure (Scotland) Regulations 2013) have you provided a Design Statement? *

☐ Yes ☐ No ☒ Not applicable to this application

f) If your application relates to installation of an antenna to be employed in an electronic communication network, have you provided an ICNIRP Declaration? *

☐ Yes ☐ No ☒ Not applicable to this application

g) If this is an application for planning permission, planning permission in principle, an application for approval of matters specified in conditions or an application for mineral development, have you provided any other plans or drawings as necessary:

- [x] Site Layout Plan or Block plan.
- [x] Elevations.
- [x] Floor plans.
- [x] Cross sections.
- [ ] Roof plan.
- [x] Master Plan/Framework Plan.
- [ ] Landscape plan.
- [x] Photographs and/or photomontages.
- [ ] Other.

If Other, please specify: * (Max 500 characters)

Provide copies of the following documents if applicable:

| | | |
|---|---|---|
| A copy of an Environmental Statement. * | ☐ Yes | ☒ N/A |
| A Design Statement or Design and Access Statement. * | ☒ Yes | ☐ N/A |
| A Flood Risk Assessment. * | ☐ Yes | ☒ N/A |
| A Drainage Impact Assessment (including proposals for Sustainable Drainage Systems). * | ☐ Yes | ☒ N/A |
| Drainage/SUDS layout. * | ☐ Yes | ☒ N/A |
| A Transport Assessment or Travel Plan | ☐ Yes | ☒ N/A |
| Contaminated Land Assessment. * | ☐ Yes | ☒ N/A |
| Habitat Survey. * | ☒ Yes | ☐ N/A |
| A Processing Agreement. * | ☐ Yes | ☒ N/A |

Other Statements (please specify). (Max 500 characters)

Planning Statement Structural Engineer's Report Site Investigation Report - to be provided by CD due to file size over 5MB The Heritage Design Statement is being submitted on CD due to file size over 5MB

## Declare – For Application to Planning Authority

I, the applicant/agent certify that this is an application to the planning authority as described in this form. The accompanying Plans/drawings and additional information are provided as a part of this application.

Declaration Name: . Ferguson Planning

Declaration Date: 27/04/2018

## Payment Details

Pay Direct

Created: 27/04/2018 16:54

# OFFICER RECOMMENDATION PREVIEW
# 10/12/08

App No. **07/00288/FUL**

Application registered on **30th March 2007**

Target Date **29th May 2007**

Proposal **Conversion of agricultural buildings to form 14 houses, erection of car ports and associated works**

Location **Longnewton Farm**
**Longnewton**
**Haddington**
**EH41 4JW**

APPLICANT: **Bill & Margaret Whiteford**

Is this application to be approved as a departure from structure/local plan? Y/N

**c/o Ian Springford Architects**
**2A Kings Stables Road**
**Edinburgh**
**EH1 2JY**

RECOMMENDATION: **Consent Granted**

Planning Assessment

This application relates to Longnewton Steading, which is in a countryside location at Longnewton, south of Gifford. The steading buildings are situated alongside Longnewton Farmhouse on the north side of the classified C92 public road. They are otherwise bounded by agricultural land and farm access tracks. There are several other houses nearby. The steading buildings are not listed as being of special architectural or historic interest and are not within a conservation area.

Planning permission is sought for the conversion of the whole group of original steading buildings to a total of 14 houses, for the erection of a car port building, which would contain within it 26 car parking spaces, for the formation of another 9 car parking spaces, and for the erection of new boundary enclosures and bin stores and the formation of hard standing areas, all within the application site. The proposal is to access the proposed 14 houses from the two existing private vehicular accesses that serve the existing steading buildings and which take access from the existing classified public road to the south. The easternmost of the two accesses also serves Longnewton Farmhouse. It is proposed to carry out improvements and upgrading works to both of the vehicular accesses. To facilitate the use of the buildings as houses a number of physical alterations, including some extensions and some demolition works, are to be made to them.

The application drawings also detail an intention to demolish a large utilitarian agricultural shed that is situated in the southwest corner of the application site. Such demolition does not require planning permission.

Section 25 of the Town and Country Planning (Scotland) Act 1997 requires that the application be determined in accordance with the development plan, unless material considerations indicate otherwise.

The development plan is the approved Edinburgh and the Lothians Structure Plan 2015 and the adopted East Lothian Local Plan 2008.

Relevant to the determination of the application is Policy ENV3 (Development in the Countryside) of the approved Edinburgh and the Lothians Structure Plan 2015 and Policies DC1 (Development in the Countryside and Undeveloped Coast), ENV7 (Scheduled Monuments and Archaeological Sites), INF3 (Infrastructure and Facilities Provision), H4 (Affordable Housing), DP2 (Design), DP6 (Extensions and Alterations to Existing Buildings), DP14 (Trees on or Adjacent to Development Sites), DP22 (Private Parking) and T2 (General Transport Impact) of the adopted East Lothian Local Plan 2008.

Material to the determination of the application is Government policy and guidance given in Scottish Planning Policy 3: Planning for Homes, Scottish Planning Policy 23: Planning and the Historic Environment and Planning Advice Note 42: Archaeology.

In paragraph 99 of Scottish Planning Policy 3 it is stated that non-residential buildings in the countryside which are no longer required for their original purpose can offer opportunities for conversion to dwellings. Residential and business conversions are a way of retaining buildings which contribute to local character, and can result in distinctive assets to the local environment. Proposals for the sensitive re-use, conversion or rehabilitation of buildings which can be accessed safely and serviced readily should be viewed sympathetically.

It is stated in Scottish Planning Policy 23: Planning and the Historic Environment that Government policy is to protect and preserve non-designated archaeological sites in situ wherever feasible and that this is a material consideration in the planning process. Where this proves impossible, planning authorities should ensure that procedures are in place in order that appropriate excavation, recording, analysis, publication and archiving is undertaken before and/or during development. In Planning Advice Note 42: Archaeology it is stated that there will be occasions, particularly where remains of lesser importance are involved, when planning authorities may decide that the significance of the archaeological remains is not sufficient when weighed against all other material considerations, including the benefits of development, to justify their physical preservation in situ and that the proposed development should proceed. Planning authorities will need, in such cases, to satisfy themselves that the developer has made appropriate and satisfactory arrangements for the excavation, recording and analysis of the archaeological remains. In this regard the advice given in PAN42 is that planning authorities should use a suspensive condition on a grant of planning permission preventing a commencement of development until after an archaeological investigation of the site has been undertaken.

A total of 13 written representations have been received in respect of this application, most of which raise objection to the proposed development. None of the representations express support for the proposed development. The concerns and objections can be summarised as follows:

* Concerns over ability of existing road infrastructure to cope with the traffic that would be generated from this proposed development;
* Concerns over road safety;
* Alternative means of accessing the site should be considered;
* The proposed development is an over intensification of the site and will set a precedent for other high density developments nearby;
* The existing private water supply is inadequate to serve the proposed development;
* The proposed development would cause noise and light pollution which would be harmful to neighbouring residential properties;
* The proposed development could cause water pollution to the Kidlaw Burn;
* The proposed development would put pressure on local council services especially school provision;
* The scale of the proposed development will erode the existing rural character;

* There should be provision for affordable housing;
* A notice of the proposed development has not been displayed on the site;

For this type of development and in this location there is no requirement for the Council to display a notice of the proposed development on the site.

Although some parts of the group of existing steading buildings have continued to be used for agricultural purposes they are, by their historic architectural form no longer reasonably capable of modern agricultural use. They are therefore in need of a new lease of life to preserve them. The proposed conversion to residential use would involve the whole steading. In view of this and, subject to the existing utilitarian agricultural shed in the southwest corner of the site being removed, there would be no scope for conflict of use between agriculture and housing.

The steading buildings are all well contained within their landscape setting and are part of the historic form and character of this part of the East Lothian countryside. They have some architectural merit and make a positive contribution to the rural landscape and built heritage of the area. Although they are substantially intact, some of the steading buildings are suffering from disrepair, giving an appearance that is somewhat detracting from the amenity of the area. If left unused, or only put to limited use, they would be likely to fall into a further state of disrepair with a greater harmful affect on the appearance and amenity of the area.

The applicant has submitted a structural engineers report on the existing buildings on the site. The report advises that the buildings can be converted without substantial demolition and rebuilding of them. The Council's structural engineer has carried out his own inspection and assessment of the structural condition of the buildings. He advises that the walls are substantially intact and that the buildings should be capable of conversion without significant demolition and rebuilding. On this basis the buildings are suitable for restoration and conversion.

The stone steading buildings lend themselves to a sensitive residential conversion. It is proposed that modern, utilitarian additions to the buildings would be removed and, in some instances, replaced by extensions. The limited amount of new build proposed would appear as logical extensions to the group of steading buildings, providing a completeness to the steading's overall composition in keeping with its scale, form and character. Where possible original openings would be used. New openings, including roof lights, by virtue of the number to be created and their positioning, would not harm the architectural character of the buildings, subject to the proposed roof lights being installed as near flush as possible with the upper surface of the roof into which they would be installed. The proposed new or replacement windows and doors by virtue of their form, style, materials and finishing would not be inappropriate to the character of the buildings. The stone walls of the buildings would be repaired and the roofs would be clad in slates or clay pantiles, to respect the historic use of those roof claddings on the steading buildings.

Removal of the utilitarian agricultural shed in the southwest corner of the site would serve to enhance the character and setting of the traditional stone built steading buildings that are to be retained. The stone steading buildings lend themselves to a sensitive residential conversion in the manner proposed. The proposed conversion of the steading is sympathetic to its existing architectural character. The residential accommodation to be formed in the buildings would be of a satisfactory size and layout, with sufficient garden space and privacy. The land around the steading allocated for the proposed car parking/vehicular turning spaces is also large enough for such purposes. The proposed development would not be an over development of the site. None of what is proposed would involve a significant or unacceptable loss of agricultural land.

None of the other works proposed, including the change of use of agricultural land to garden ground, the proposed car port building, hardstanding areas and new boundary treatments would appear intrusive, incongruous or exposed in their landscape setting. They would not significantly alter the

contribution the steading makes to the character of this part of the East Lothian countryside and would not be harmful to the character and appearance of the area.

None of the proposed works would result in significant harm to the privacy and amenity of the occupants of Longnewton Farmhouse or to the occupants of any other residential properties nearby. The proposed residential accommodation would be of satisfactory size and layout with sufficient garden space and privacy for the residents of the proposed 14 houses.

If the proposed development were to be granted planning permission the houses to be formed from the conversion of the steading buildings, once occupied, would benefit from permitted development rights for certain alterations and extensions to them. In addition, if the proposed development were to be granted planning permission, the land that would be changed from agricultural use to domestic garden ground for the new houses, would benefit from permitted development rights for the erection of certain structures such as garden sheds and garages and other development on it. Those alterations, extensions and structures and other curtilage development could harm the character, integrity and appearance of the buildings and/or lead to an over development of the site, create a density of built form harmful to the character and amenity of the area or cause harmful impacts on the privacy and amenity of neighbouring residential properties. It would therefore be prudent for the Council, as Planning Authority, to impose a condition on a grant of planning permission for the proposed development removing permitted development rights for any alterations and extensions to the houses and for any building of detached structures and the carrying out of other development on the land to be changed to domestic garden ground.

If the proposed development were to be granted planning permission and if the detached, utilitarian agricultural shed positioned in the southwest corner of the site was to remain in place and not be demolished as shown on the application drawings, there would be conflict between the agricultural use and the residential use, which would be harmful to the occupants of the houses to be created. Therefore, it should be made a condition of a grant of planning permission for the proposed steading conversion that prior to occupation of any of the proposed 14 houses the detached agricultural shed be removed.

On all of these foregoing considerations the proposed development is consistent with the presumption in favour of the conversion of agricultural buildings in the countryside to houses contained in Policy ENV3 of the approved Edinburgh and the Lothians Structure Plan 2015 and Policy DC1 (Part 2) of the adopted East Lothian Local Plan 2008 and with national planning policy on housing development in the countryside given in SPP3. As the proposed conversion would not harm the character and appearance of the existing buildings or the landscape of the area, or harm the amenity of neighbouring residential properties it is consistent, as applicable, with Policies DC1, DP2 and DP6 of the adopted East Lothian Local Plan 2008.

The proposal is to access the proposed 14 houses from the two existing private vehicular accesses that serve the steading buildings from the classified C92 public road. It is proposed to carry out improvements and upgrading works to both these accesses including the proposed widening of the easternmost access to 5.5 metres in width. The Council's Head of Transportation advises that the proposed 14 houses can be safely and satisfactorily accessed using the existing private accesses provided the proposed improvements to them are carried out and he advises that the visibility splay at each access would be sufficient to allow safe movement of vehicles on to the public road from each access. He advises that the private access roads within the site should have pothole and water free surfaces. These matters can be controlled through a conditional grant of planning permission. The proposed amount of car parking spaces and the turning areas to be provided within the site and the positioning and layout of them would be to a satisfactory standard. The Council's Head of Transportation is therefore satisfied that the proposed development can be safely and satisfactorily accessed and that the safety of other road users will not be impinged upon by traffic movements generated by the proposed development. He raises no objection to the proposed development. Subject to the Head of Transportation's recommended planning controls being made conditions of a

grant of planning permission the proposals comply with Policies DP22 and T2 of the adopted East Lothian Local Plan 2008.

The Council's Senior Environmental and Consumer Services Manager recommends that due to the historic agricultural use of the site, a detailed site investigation be carried out in relation to land contamination and a report on this be submitted to the Council for approval prior to the commencement of site works. This recommended control could be secured through a condition imposed on a grant of planning permission for the proposed development.

The Council's Heritage Officer informs that Longnewton Steading is a historic steading dating back to the 18th century. Because of the age and importance of the buildings some level of recording of them prior to their conversion is important. Therefore, the Heritage Officer considers it essential that a programme of archaeological works (historic building survey) should be carried out at the site by a professional archaeologist. This can be secured through a condition attached to a grant of planning permission for the proposed development. This approach is consistent with Government guidance given in Scottish Planning Policy 23: Planning and the Historic Environment, Planning Advice Note 42: Archaeology and with Policy ENV7 of the adopted East Lothian Local Plan 2008.

The Council's Director of Education and Children's Services informs that the planning application site is located within the primary school catchment area of Yester Primary School and the secondary school catchment area of Knox Academy, Haddington. He confirms that there would be sufficient capacity at Yester Primary School to accommodate children that could arise from the proposed development but not at Knox Academy. Thus the Director of Education and Children's Services objects to the application. However, he confirms that he will withdraw this objection if the applicant is required to make a financial contribution to the Council of £22,330 (£1,595 per house) towards the provision of additional secondary school accommodation at Knox Academy. This can be secured through an Agreement under Section 75 of the Town and Country Planning (Scotland) Act 1997. The basis of this is consistent with the test of reasonableness of a planning agreement set in SODD Circular 12/1996. Subject to the Council securing the appropriate developer contribution the proposal is consistent with Policy INF3 of the adopted East Lothian Local Plan, which stipulates that new housing will only be permitted where the developer makes appropriate provision for infrastructure required as a consequence of their development.

The Council's Housing Strategy and Development Services Section advise that the requirement for the provision of affordable housing arising from this proposed housing development is determined by the Council's Affordable Housing Policy approved by the Council in January 2006. Accordingly, 25% of the 14 houses proposed should be affordable housing. In this instance, Housing Strategy and Development Services inform that it would not be feasible to produce social rented or low cost home ownership units on this site and, alternatively are willing to accept from the applicant a commuted sum payment of a value equivalent to the cost of providing the percentage affordable housing requirement, in lieu of an on or off-site affordable housing provision. Such a commuted sum payment can be secured by a Section 75 Agreement.

The Council's Policy and Projects Manager raises no objections to the proposed development on landscaping grounds. He advises that mature trees located on the northeast corner of the site and a hedge located along the northern boundary of the site should be protected by a temporary fence during the course of construction. This matter can be controlled through a condition on a grant of planning permission. Accordingly the proposals are consistent with Policy DP14 of the adopted East Lothian Local Plan 2008.

The Council's Biodiversity Officer informs that swallows may nest in the steading buildings. He advises that these birds are protected by the Wildlife and Countryside Act and that the applicant will be responsible for ensuring that development does not progress on the buildings while any swallows are nesting in the buildings. He also informs that it is highly likely that bats would roost in the steading buildings. All species of bats are protected by UK and European legislation. Bat roosts are

protected whether bats are present or not, since bats may return to the same roost in successive years. Development of steading buildings typically removes access to bat roosts and therefore is a major cause of bat decline in the UK. To compensate for the possible loss of existing bat roosts as a consequence of the proposed conversion of the steading buildings he recommends that a bat survey be carried out by a suitably experienced ecologist prior to any works progressing. Additionally he recommends that bat boxes should be provided within the site. Subject to these requirements the Council's Biodiversity officer raises no objection to the proposed development.

The Scottish Environment Protection Agency (SEPA) have been consulted on the application. In their first consultation response to the application they raised an objection on the basis of lack of information relating to foul drainage. They have since confirmed that they have received additional information directly from the applicant relating to foul drainage and as a result now raise no objection to the proposed development.

Scottish Water raises no objection to the proposals. They advise that Roseberry Water Treatment Works currently has sufficient capacity to service the proposed development and that there are no known issues at present with Scottish Water's Water network that would serve the proposed development.

Copies of the SEPA and Scottish Water consultation responses have been forwarded to the applicant's agent for their attention. The matters of water supply, sewage treatment and surface water drainage can be controlled through legislation other than planning legislation.

RECOMMENDATION

That planning permission be granted subject to:

1. The undernoted conditions.

2. The satisfactory conclusion of a Section 75 Agreement designed to:

(i) Secure from the applicant a financial contribution to the Council of £22,330 towards the provision of additional secondary school accommodation at Knox Academy, Haddington,

(ii) Secure from the applicant an affordable housing commuted sum payment of a value equivalent to the cost of providing a percentage affordable housing requirement for the development of 25% of 14 houses in lieu of an on or off-site affordable housing provision.

1 The development shall begin before the expiration of 5 years from the date of this permission.

Reason:
Pursuant to Section 58 of the Town and Country Planning (Scotland) Act 1997.

2 Development shall not begin until a scheme to deal with contamination on the site has been submitted to and approved in writing by the Planning Authority. The scheme shall contain details of the proposals to deal with contamination to include:

1 the nature, extent and type(s) of contamination on the site,
2 measures to treat/remove contamination to ensure the site is fit for the use proposed,
3 measures to deal with contamination during construction works,
4 condition of the site on completion of decontamination measures.

Before any house is occupied the measures to decontaminate the site shall be fully implemented as approved by the Planning Authority.

Reason:
To ensure that the site is clear of contamination prior to the occupation of the buildings.

3 No development shall take place until the applicant has, through the employ of an archaeologist or archaeological organisation, secured the implementation of a programme of archaeological work (historic building survey) on the site of the proposed development in accordance with a written scheme of investigation which the applicant will submit to and have approved in advance by the Planning Authority.

Reason:
To facilitate an acceptable archaeological investigation of the site.

4 No development shall take place until there has been submitted to and approved in writing by the Planning Authority a scheme of landscaping. The scheme shall include full details of: the height and slopes of any mounding on or recontouring of the site, tree and shrub sizes, species, habitat, siting, planting distances and a programme of planting. The scheme shall include indications of all existing trees and hedgerows on the site, details of any to be retained, and measures for their protection in the course of development.

All planting, seeding or turfing comprised in the approved details of landscaping shall be carried out in the first planting and seeding season following the occupation of the new houses or the completion of the development, whichever is the sooner, and any trees or plants which within a period of five years from the completion of the development die, are removed or become seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species, unless the Planning Authority gives written consent to any variation.

Reason:
In order to ensure the implementation of a landscaping scheme to enhance the appearance of the development in the interests of the amenity of the area.

5 The landscaping details to be submitted in accordance with Condition 4 above shall include details of all surfacing treatment for the perimeter of the site and for the courtyards and gardens of the new houses, including footpaths, and shall also include details of any new means of enclosure or delineation of boundaries.

Reason:
To safeguard the residential amenity of the houses herby approved and the character and visual amenity of the area.

6 No development shall take place on site until all existing trees, bushes and hedges to be retained on the site have been protected by a fence, to be approved in writing by the Planning

Authority, erected around each tree or group of vegetation at a distance from each tree trunk commensurate with the tree crownspread or such distances as may be agreed in writing by the Planning Authority. Within the areas so fenced off the existing ground level shall neither be raised or lowered and no materials, temporary buildings, plant, machinery or surface soil shall be placed or stored and no fires shall be lit thereon without the prior written approval of the Planning Authority. Details of any trenches or services required in the fenced off areas shall be submitted to and approved by the Planning Authority prior to any such works being carried out and such trenches or services shall be excavated and backfilled by hand and any tree roots encountered with a diameter of 25mm or more shall be left unsevered.

Reason:
To ensure the retention and maintenance of trees and vegetation which are an important feature of the area.

7 Prior to the commencement of development the applicant, through the employ of a suitably experienced ecologist shall undertake a bat survey of the application site in accordance with a survey plan to be submitted to and approved in advance by the Planning Authority. A copy of the survey report shall be submitted to the Planning Authority within a period of one month following the date of completion of the survey.

Reason:
In the interests of nature conservation.

8 Prior to the occupation of any of the houses hereby approved bat boxes shall be provided within the site of the steading buildings of a number and type and in positions that is in accordance with details to be submitted to and approved in advance by the Planning Authority.

Reason:
To compensate for the removal of access to potential bat roosting space that could result from the conversion of the steading buildings to houses.

9 None of the fourteen houses hereby approved shall be occupied unless the existing detached agricultural shed positioned in the south west corner of the site has been demolished and the materials of it completely removed from the site.

Reason:
To ensure that the occupants of the houses benefit from an acceptable amount of residential amenity and in the interests of the character and appearance of the buildings and the character and visual amenity of the area.

10 Prior to the occupation of any of the houses hereby approved the bin storage facilities hereby approved shall have been formed and made available for use. Thereafter, the bin storage facilities shall be retained in use solely as bin storage areas.

Reason:
To ensure the provision of adequate bin storage facilities in the interest of the residential amenity of the future occupants of the houses hereby approved and the visual amenity of the locality.

11 Prior to the commencement of development to convert the steading buildings the junctions of the two site access roads with the public road shall be upgraded in the manner shown in "Proposed Ground Floor Plan" (PL) 008 Rev B docketed to this planning permission.

Reason:
In the interest of road safety.

12 Prior to the occupation of any of the houses hereby approved the private access roads within the site from their junctions with the public road shall be upgraded to a pothole and water free condition, to the approval of the Planning Authority and thereafter the private access roads shall be maintained in a pothole and water free condition.

Reason:
To ensure a satisfactory standard of road access to the approved houses, in the interest of road safety.

13 Prior to the occupation of any of the houses hereby approved the private access roads within the site, the 26 car parking spaces (including the 15 to be contained within the proposed car port building, vehicular manoeuvring areas, and all footpaths all as delineated on "Proposed Ground Floor Plan" (PL) 008 Rev B docketed to this planning permission, shall have been formed and made available for use and thereafter shall remain available for use unless otherwise approved in writing by the Planning Authority. As shown on the docketed drawings the car port building shall be open fronted and shall not be enclosed in any manner.

Prior to their construction, full details of the surfacing treatments for the vehicular accesses, footpaths and car parking spaces to be formed within the site, and of all other hardstanding areas within the site shall be submitted to and approved in writing by the Planning Authority.

Reason:
In the interests of highway safety and the residential and visual amenity of the development.

14 All new and replacement stone to be used on the walls of the buildings shall be natural stone to match as closely as possible the existing stonework of the buildings, in accordance with a sample to be submitted to and approved by the Planning Authority prior to its use in the development and the stone used shall accord with the sample so approved.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

15 A sample of the stone to be used for the lintels, cills and reveals of window and door openings shall be provided for the prior inspection and approval of the Planning Authority and the stone used shall accord with the sample so approved.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

16 Samples of the new and replacement natural slates, the new and replacement natural pantiles and the metal roofing to be used in the development shall be provided for the prior inspection and approval of the Planning Authority and the new and replacement slates, pantiles and metal roofing used shall accord with the samples so approved. Where possible, existing slates and pantiles shall be reinstated following any roof repairs or alterations.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

17 The following shall be finished in a colour to be approved in advance by the Planning Authority and the colour of the finish applied shall accord with the details so approved:

1. the external face of all new and replacement exterior timber boarded doors, walls and timber boarded infill panels;
2. the external face of the frames of all new and replacement glazed doors, screens and infill panels;
3. the external face of the frames of all new and replacement windows.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

18 All new and replacement roof windows shall be installed as near to a flush fitting as possible with the roof surface and with minimum required flashing. Where possible, existing roof windows shall be retained and repaired.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

19 Prior to their installation on the buildings, details of any flue and vent outlets shall be submitted to and approved by the Planning Authority. Details shall include scale 1:5 or 1:10 section drawings and brochures showing the size, design and numbers of the proposed flue and vent outlets. The details shall show the flue and vent outlets concealed as much as possible and for visible parts to match as closely as possible the colour and materials of the part of the buildings to which they would adjoin.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

20 All new and replacement sections of cast iron rainwater goods shall be painted a colour to be approved in advance by the Planning Authority and the colour of the paint applied to them shall accord with the detail so approved.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

21 No fascia boards shall be installed behind the gutters on the buildings. All new and replacement sections of guttering shall only be attached to the steading buildings using sarking straps.

Reason:
To safeguard the character and appearance of the buildings and the character and visual amenity of the area.

22 A schedule of the external finishes for the car port be erected within the application site shall be submitted to and approved in advance by the Planning Authority and the external finishes of that building shall accord with the schedule so approved.

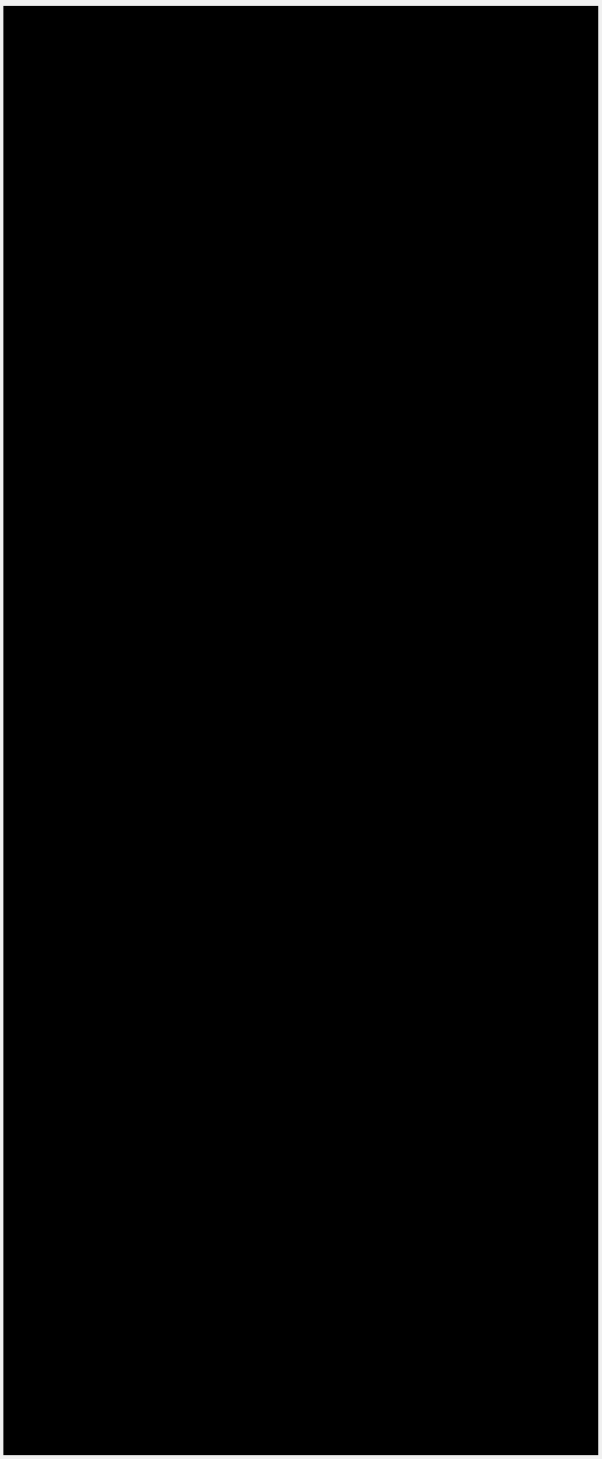
Reason:
To safeguard the character and visual amenity of the area.

23 Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) (Scotland) Order 1992, as amended, no development of the types specified in Part 1 and Part 2 of Schedule 1 of the Order or in any statutory instrument revoking and/or re-enacting those Parts of the Order shall be undertaken on the houses to be formed from the conversion of the steading buildings hereby approved, or on any part of the application site, other than the development shown on the drawings docketed to this planning permission, unless with the prior approval of the Planning Authority.

Reason:
In the interests of safeguarding the character, integrity and appearance of the buildings and the visual amenity of the area.

LETTERS FROM

[redacted]



10/12/08

10/12/08

**App No. 18/00421/P**

**EAST LOTHIAN COUNCIL**
**DECISION NOTICE**

**TOWN AND COUNTRY PLANNING (SCOTLAND) ACT 1997**
**TOWN AND COUNTRY PLANNING**
**(DEVELOPMENT MANAGEMENT PROCEDURE) (SCOTLAND) REGULATIONS 2008**

**Mr & Mrs Bill Whiteford**
**c/o Ferguson Planning**
**Shiel House**
**54 Island Street**
**Galashiels**
**TD1 1NU**

**APPLICANT: Mr & Mrs Bill Whiteford**

With reference to your application registered on 5th June 2018 for planning permission under the above mentioned Acts and Regulations for the following development, viz:-

**Conversion of agricultural buildings to form 3 houses and carport, erection of 6 houses and associated works**
**at**
**Longnewton Farm**
**Longnewton**
**Haddington**
**EH41 4JW**

East Lothian Council as the Planning Authority in exercise of their powers under the above-mentioned Acts and Regulations hereby **REFUSE PLANNING PERMISSION** for the said development.

The reasons for the Council's refusal of planning permission are:-

1 The three detached and two semi-detached new build houses proposed would be sporadic new build housing development in the countryside of East Lothian for which a need to meet the operational requirements of an agricultural, horticultural, forestry or other employment use has not been demonstrated. The three detached and two semi-detached new building houses proposed are therefore contrary to Policies DC1 and DC4 of the adopted East Lothian Local Development Plan 2018, and Scottish Government policy guidance regarding

the control of new housing development in the countryside given in Scottish Planning Policy: June 2014.

2 If approved the proposed development would set an undesirable precedent for the development of new houses elsewhere in the East Lothian countryside. the cumulative effect of which would result in a detrimental impact on the rural character and amenity of the countryside of East Lothian.

3 It is not demonstrated that the new build housing proposed is the only means of preventing the loss of historic buildings making a positive contribution to the rural landscape and built heritage of the area and, on the contrary, the detached and semi-detached housing proposed in this application would, by its proposed siting, result in the loss of historic buildings which would lend themselves to a positive conversion to housing. The erection of the proposed three detached and two semi-detached houses are contrary to Policy DC5 of the adopted East Lothian Local Development Plan 2018.

4 The proposed detached and semi-detached houses would not, by virtue of their form, architectural detailing, fenestration or materials be well integrated into their surroundings and would not be in keeping with the original buildings on the site. They would significantly alter the contribution the steading makes to the character of this part of the East Lothian countryside and would be harmful to the character and appearance of the area including the special character of the Special Landscape Area all contrary to Policies DC9, DP1 and DP2 of the adopted East Lothian Local Development Plan 2018, to the Council's Supplementary Planning Guidance on Special Landscape Areas and on Farm Steading Design Guidance and with Government advice on the design of new housing development in the countryside given in Planning Advice Note 72. .

The report on this application is attached to this Decision Notice and its terms shall be deemed to be incorporated in full in this Decision Notice.

Details of the following are given in the application report:

- the terms on which the Planning Authority based this decision;

- details of any variations made to the application in terms of Section 32A of the Town and Country Planning (Scotland) Act 1997.

The plans to which this decision relate are as follows:

| Drawing No. | Revision No. | Date Received |
|---|---|---|
| MANU LITERTURE 1 | - | 15.05.2018 |
| MANU LITERTURE 2 | - | 16.05.2018 |
| MANU LITERTURE 3 | - | 16.05.2018 |
| MANU LITERTURE 4 | - | 16.05.2018 |

| | | |
|---|---|---|
| P528-PL-008 | A | 16.05.2018 |
| P528-PL-011 | - | 16.05.2018 |
| P528-PL-EX1 | A | 16.05.2018 |
| P528-PL-EX2 | A | 16.05.2018 |
| P528-PL-LOC | A | 16.06.2018 |
| PHOTO 1 | - | 30.05.2018 |
| MANU LITERTURE 5 | - | 30.05.2018 |
| MANU LITERTURE 6 | - | 30.05.2018 |
| MANU LITERTURE 7 | - | 30.05.2018 |
| P528-PL-002 | B | 30.05.2018 |
| P528-PL-003 | B | 30.05.2018 |
| P528-PL-004 | B | 30.05.2018 |
| P528-PL-005 | B | 30.05.2018 |
| P528-PL-006 | B | 30.05.2018 |
| P528-PL-007 | B | 30.05.2018 |
| P528-PL-009 | B | 30.05.2018 |
| P528-PL-001 | D | 05.06.2018 |
| P528-PL-010 | B | 05.06.2018 |

**11th October 2019**

[redacted]

Keith Dingwall
Service Manager - Planning

**NOTES**

If the applicant is aggrieved by the decision to refuse permission for the proposed development, the applicant may require the planning authority to review the case under section 43A of the Town and Country Planning (Scotland) Act 1997 within three months from the date of this notice. The notice of review should be addressed to the Clerk to the Local Review Body, Committee Team, Communications and Democratic Services, John Muir House, Haddington, East Lothian EH41 3HA.

If permission to develop land is refused or granted subject to conditions and the owner of the land claims that the land has become incapable of reasonably beneficial use in its existing state and cannot be rendered capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted, the owner of the land may serve on the Planning Authority a purchase notice requiring the purchase of the owner of the land's interest in the land in accordance with Part 5 of the Town and Country Planning (Scotland) Act 1997.

FERGUSON
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# APPEAL STATEMENT

## SITE ADDRESS: LONGNEWTON, NEAR GIFFORD, HADDINGTON EH41 4JW

## RESIDENTIAL DEVELOPMENT OF 9 DWELLINGS BY CONVERSION, ALTERATIONS & NEW BUILD CONSTRUCTION, DEMOLITION AND FORMATION OF ACCESS, PARKING & ASSOCIATED INFRASTRUCTURE.

## APPLICANT: BILL & MARGARET WHITEFORD

## DECEMBER 2019

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
**E** [redacted]
**W** www.fergusonplanning.co.uk

RTPI Chartered Town Planner

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## CONTENTS



**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

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61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
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## 1.0 INTRODUCTION

1.1 This Appeal Statement, prepared by Ferguson Planning, is submitted to East Lothian Council Local Review Body on behalf of our client, Bill & Margaret Whiteford for a development proposal for nine dwellings together with demolition, access, parking and associated infrastructure within a disused former farm steading at Longnewton, near Haddington. The proposal comprises the following:

- 3 units by conversion;
- 5 units by new build.
- 1 unit by re-building an 'infill' area within a traditional steading.

1.2 The application relates to the redundant Longnewton steading where the buildings are falling into disrepair due to being no longer in use. It is situated close to Longnewton Farmhouse on the north side of the classified C92 public road. The Farmhouse and Steading are no longer in operational use. The application site is bounded by agricultural land, the public road and an access track.

1.4 In 2007, Planning Committee **approved** planning application **07/00288/FUL** for the development of **fourteen houses** within the same application site, together with a 26-space car port building and further parking and hardstanding areas.

1.5 Despite significant marketing efforts by Messrs Lindsays and by Savills, **no significant interest was intimated in the site, based upon that high-density steading scheme, and the site remains unsold**. This is principally due to the costs involved in a conversion-only project and lack of demand for the type and layout of properties which gained planning approval. The rural property market seeks larger dwellings with ample private garden area. Comment on market demand is made within the Planning Statement.

1.6 **The proposal aims to secure a long-term viable future use for key buildings which retain the most historic and architectural value, and which are located towards the front of the site. This ensures that the proposed scheme retains its 'steading feel' as experienced from the key receptor (the public road).**

1.7 This proposal involves a reduced level of development from the **14 units** permitted by the Council on the same site in 2008 down to **9 units**.

1.8 The proposal seeks to respect and maintain the character and setting of the traditional steading buildings which are worthy of retention (and the steading setting generally). It recognises the reduced level of development, the layout, and built form which are sought by those wishing to live in a rural setting.

1.9 The farm steading currently comprises a mixture of traditional stone and slate/ pantile roofed steading buildings as well as more modern utilitarian infill and standalone agricultural units. Large parts of the steading are in a dilapidated state and are falling down.

1.10 A Structural Survey has been prepared by CRA Engineers and is submitted as supporting information. It identified those buildings which are most suitable for retention and conversion to residential use.

1.11 Whilst the buildings are **not listed**, the structure to the front of the site (beside the public road) is attractive and the proposal seeks to convert this building to residential use and thereby safeguard its future. Likewise, parts of the traditional complex towards the east and centre of the site are in a state of repair which allows for conversion and these structures will thus see the creation of a further two residential units by conversion.

1.12 The new build elements of the proposal importantly seek to retain the "steading ambiance" of the site, being respectful in form, layout, scale, massing and use of materials. Full explanation and justification for the proposals is set out later in this report and within SDA's Heritage Design Statement.

1.13 The remainder of the Planning Statement is structured as follows:

- **Section 2:** Site Context
- **Section 3:** The Proposal
- **Section 4:** Planning History & Pre-Application Enquiry
- **Section 5:** Planning Policy Context
- **Section 6:** **Grounds of Appeal**
- **Section 7:** Conclusions

1.14 The Appeal is accompanied by Core Documents and as listed with **Appendix 1**.

## 2.0 SITE CONTEXT

2.1 The appeal site is located within Longnewton Farm which is situated approximately 6 miles south of Haddington, 2 ½ miles south west of Gifford and 3 miles south east of east Saltoun. The proposal is wholly within the confines of the existing steading, as was the previous planning permission.

2.2 The site comprises a wide range of traditional and more modern agricultural steading buildings. None are listed. A former sileage clamp is also present. The steading has been redundant for agricultural purposes for over 10 years and the majority of the buildings, other than those proposed for conversion, are significantly dilapidated and are lacking in structural integrity. A limited number of buildings are used for equestrian accommodation and some house agricultural machinery.

**Fig 1**: Aerial Image of Longnewton Steading

**Fig 2**: Overview of Longnewton Steading

2.3 The current access to the former steading is from the public road at a point to the south east of the site.

2.4 The land is bounded to the south by the public road, whilst adjacent to the eastern boundary lies the (former) Longnewton Farmhouse (now a private dwelling unrelated, in operational terms, to the farm steading). The site is otherwise surrounded by agricultural land which has been retained by the owner of the steading (applicant). Deciduous woodland is located within the garden of the adjacent dwelling, providing visual separation from the application site. An access track exists adjacent to the eastern boundary of the site which provides access to the rear of Longnewton Farmhouse and to the adjacent agricultural fields.

2.5 Images of (a) those traditional steading buildings to be retained and (b) those which are not suitable for retention are provided overleaf:

**BUILDINGS TO BE RETAINED & SECURED FROM FURTHER DETERIORATION**

**Fig 3**: Attractive traditional building adjacent to the public road – to be retained (unit 1)

**Fig 4**: Unit 1 (eastern elevation) – to be retained

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

**Fig 5**: Traditional building (unit 7, northern elevation) – to be retained

**Fig 6**: Traditional building (unit 7, eastern elevation) – to be retained

**Fig 7**: Attractive traditional Building - to be retained (unit 9, western elevation)

**EXAMPLES OF BUILDINGS UNSUITABLE FOR RETENTION**

**Fig 8**: Building not structurally suitable for retention ('infill' new build, unit 8)

**Main Office:**
Shiel House | 54 Island Street | Galashiels | TD1 1NU

**NI Office:**
61 Moyle Road | Ballycastle | Co. Antrim | BT54 6LG

**T** 01896 668 744
**M** [redacted]
[redacted]
**W** www.fergusonplanning.co.uk

**Fig 9**: Buildings not structurally suitable for retention (location of detached new build)

**Fig 10**: Building not structurally suitable for retention (location of detached new build)

**Fig 11**: Utilitarian modern agricultural buildings – site of units 2 & 3 (traditional structure to right of image to be retained)

2.6 In terms of services and accessibility, East Saltoun offers a primary school, general store, church and village hall. Gifford has a Co-op supermarket, together with two hotels/restaurants, a post office, newsagents, café and play park. Nearby Haddington offers additional shopping facilities including a Tesco supermarket. Edinburgh's city centre is approximately 40 minutes away and the city bypass and Edinburgh Airport are also easily accessible.

**Site Deliverability and Marketability**

2.7 Following the approval for 14 houses in December 2008, the site was placed on the market for sale. The market in East Lothian for traditional steadings with planning permission to be converted into multiple residential units disappeared following the financial crash of 2007/8, as the traditional buyers (smaller developers) of this type of property were unable to gain funding or, in some cases, went out of business. Consequently, a number of steadings with planning permission, including Longnewton Steading, and sites such as Tyninghame Links, have remained unsold for a number of

years, during which time their condition has deteriorated.

2.8 One of the reasons for the loss of the market for projects which comprise only *conversion* of traditional steadings is the high cost of converting such buildings into dwellings. Further, the layout is often compromised by the footprint of the original building. This scenario has been illustrated throughout the unsuccessful marketing of Longnewton Steading (with planning permission for the creation of 14 residential units through conversion) by Messrs Lindsays and Savills. It is understood that the thorough marketing exercises carried out by both parties resulted in no serious interest from buyers looking to implement the planning consent, despite there being a general demand for houses in the area.

2.9 Despite the constrains of working with the footprint of the traditional buildings (relating to the current proposals for units 1,7,8 and 9), Stuart Davidson Architecture has designed an attractive development which is highly respectful of the existing steading form and its rural location. Further, whilst units 2 and 3 are new build, they are of a steading form, scale and massing and are carefully positioned within the overall steading curtilage to replicate a traditional steading layout.

2.10 The proposal for 9 units comprises a mixture of larger detached and semi-detached family homes. These properties will present a more viable option for developers as compared to the 2008 planning permission, as there is a blend of properties that is sought-after in the market.

2.11 It is essential, for viability purposes, that a developer has the ability to raise funds from the sale of the profitable part of the development, prior to investing further substantial sums (beyond making the buildings wind and water tight) in the traditional buildings to be retained.

## 3.0 PLANNING HISTORY & PRE-APPLICATION ENQUIRY

**Application 07/00288/FUL -14 dwellings**

3.1 The principle of residential development at Longnewton steading has already been established through the approval of application 07/00288/FUL in December 2008 at Planning Committee. This consent allowed the creation of **14 dwellings** through conversion and new works together with demolition and extensive car park and new outbuildings.

3.2 In respect of that previous proposal, the Officer's Report to Committee highlights that public representations included the expression of concern that the 14-house development was too intensive, and its scale would impact detrimentally upon the rural character of the immediate area. This application fully addresses this concern with a reduced number of units and a sensitively designed development.

**Pre-Application Enquiry 2017**

3.3 A pre-application enquiry was submitted to East Lothian Council in June 2017 relating to a proposed development of 6 houses (1 conversion and 5 new build properties). A response was received on 3rd July 2017 (reference Dev61065) outlining policy DC1 – Development in the Countryside and Undeveloped Coast and stating that new development in the countryside should only be permitted in the defined circumstances outlined in this policy.

3.4 The Officer cited the opportunity for conversion where buildings are substantially intact and where no significant demolition is required. It was also noted that new build would only be permitted where there was an operational requirement for rural business reasons.

3.5 This response did not appear to consider, or address:

- The material consideration at Longnewton whereby the principle of development at the steading has been established through the approval of a proposal for the development of 14 houses within the site. The current proposal is significantly less intensive, with a reduction in 5 units;
- The redundant nature of the former steading buildings and the very real risk of

losing attractive traditional agricultural buildings, which are understood to date from the 18th Century, if further deterioration takes place due to a viable and marketable development solution not being found;

- The brownfield nature of the site, together with its grouping with neighbouring residential properties.

**Application 18/00421/P - 9 dwellings**

3.6 The application to which this Appeal relates is for a reduced number of units. The determination of the application took over 12 months to come to determination and was presented for refusal.

3.7 There were four reasons for refusal and which are set out within Decision Notice and Officer's Report. A summary of the reasoning for refusal is outlined below:

1. The three detached and two semi detached houses would be sporadic new build housing in the countryside and not look to rural operations.

2. Set precedent for development of new houses elsewhere in East Lothian Counctryside with possible detrimental impact on rural character and amenity of countryside.

3. Not demonstrating that the new build housing on only means of preventing loss of historic buildings and which make positive contrition to the rural landscape

4. The detached and semi-detached houses would not be well integrated into their surroundings and not be in keeping with the original buildings on the site and alter the contribution the steading makes to the character of this part of East Lothian.

3.8 The Grounds of Appeal and the reasoning to why we consider the proposal should be supported is contained within Chapter 6.

## 4.0 THE PROPOSAL

4.1 The proposal seeks the development of a total of nine dwellings, contained within the same steading area where planning approval was recommended in 2008 for fourteen dwellings. Three dwellings will be created, primarily through conversion, and six as new build, using a carefully considered design and layout which wholly respects the rural farm steading setting.

4.2 Two of the units will replace and sit lower in the landscape than the large agricultural metal warehouse that currently exists and which has no heritable value. The stable block is in poor condition and while part of it could be possible convert it has been found unviable financially and that particular area is needed to introduce limited new build that will then cross fund and enable the conversion of the more heritable steading buildings. Without the steading it will continue to fall into disrepair and a strong possibility that the entire steading will require to be demolished due to continued health and safety fears.

4.3 The Structural Engineer's report sets out the condition of the existing buildings and their suitability for conversion, or otherwise, from a structural perspective. The report identifies three parts of the steading to be worthy of retention and capable of conversion without substantial demolition.

4.4 The remaining buildings, due to their dilapidated state and lack of structural integrity, are deemed to be unsuitable for conversion. Further, these latter buildings and structures detract from the visual amenity of the area and, due to their lack of structural integrity, are unsafe. Suitable stone from any unsafe buildings which require to be demolished will be re-used within the proposed development.

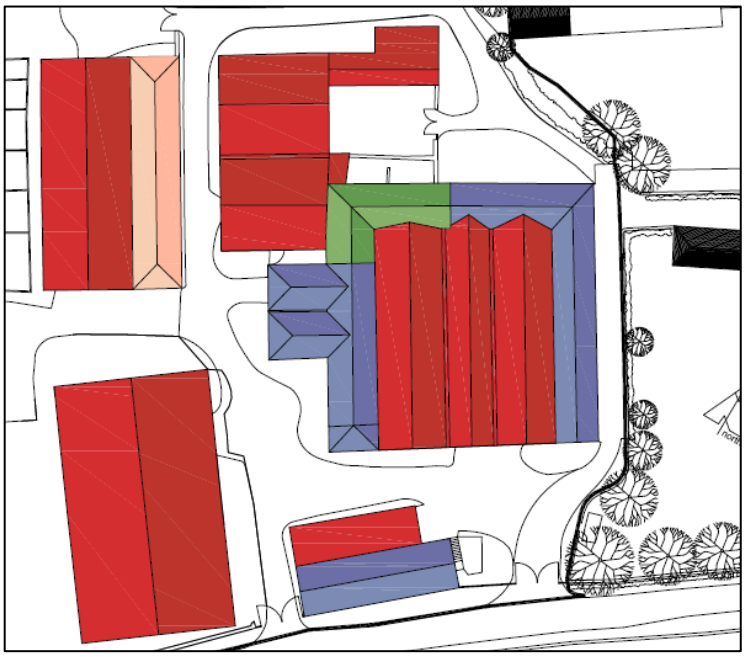
4.5 The buildings shaded **red** on Fig 11 (overleaf) are to be demolished as they have been confirmed as being unsuitable for conversion by the Structural Engineer, either by virtue of their construction or condition.

4.6 Whilst the Engineer deems the building shaded **pink** to be physically capable of conversion, it would likely be affected by the removal of the attached elements to the west. Furthermore, crucially, in order to establish a viable development, and prevent

loss (through further deterioration) of the attractive traditional buildings with heritage value, (shaded **blue)**, it is essential to integrate three sensitively-designed new build dwellings into the proposal, located within the area where the 'pink-shaded' building lies.

4.7 It should be noted that the **green**-shaded building will be replaced with a structure of the same massing and height as the original which is in too poor a condition for conversion.

**Fig 11**: Demolition/ Retention Plan



**KEY**: (**Blue** = Retained; **Red/ Pink** = Demolish; **Green** = Replace)

4.8 As noted, three of the proposed dwellings would be created by conversion of existing traditional buildings which have been assessed as being capable of conversion by the Engineer without requiring significant demolition and rebuilding. On the submitted Site Plan, the dwellings to be created by conversion are units 1, 7 and the majority of unit 9.

4.9 The remaining six dwellings would be of new build construction. Units 2 and 3 have been

carefully designed to offer a traditional steading/ courtyard format to complement the form, setting and location. Again, the built form would sit lower and better than the current large metal agricultural warehouse that current sits in this position.

4.10 Unit 8 requires to be reformed (with the same height and massing as the original) as this part of the group has been assessed as being in too poor a structural condition for conversion.

4.11 Three new build detached dwellings (units 4-6) would be located towards the 'rear' of the steading site in order that they are not immediately visible from the public road and do not break up the steading form at the front of the site. These detached units are, however, laid out around a courtyard format, in order to respect the wider setting.

4.12 The public road is the key receptor from which the proposed development will be viewed. The view from the road would contain the sympathetically-converted unit 1, with the converted U-shaped steading grouping beyond, and the new build (with steading form and massing) lying adjacent to the west.

4.13 In addition to the layout and form of the development, proposed landscaping and boundary treatments are clearly shown on the Site Plan. Certain aspects of the proposal are drawn to the attention of the Planning Authority:

4.14 The character of the traditional steading, its architectural form and heritage value has been given careful consideration in the design of the proposed development, which comprises three closely integrated elements: (1) the conversion of the building to the front and the development of 2 adjacent units in steading-style layout; (2) the conversion of the group of steading buildings towards the centre and east of the site and (3) the development of 3 detached houses to 'round off' the steading development to the rear.

4.15 A new entrance would be formed from the public road, towards the centre of the site, the initial section being 8 metres deep and 5.5 metres wide. It is noted that the 2008 permission confirmed adequate visibility could be achieved from the junction with the public road. A coloured tarmac access road would be formed to help preserve the rural setting, with transition strips used to break up the road, visually, between the three key

elements of the proposal. The existing access to the steading, and onwards to Longnewton Farmhouse, would remain in place to serve the back of Longnewton Farmhouse and the fields to the north east only.

4.16 A new stone coped wall, with dressed stone gate pillars, would be formed at the entrance (adjacent to the eastern gable of unit 2) in order to maintain a traditional steading entrance and preserve the setting. A new dry-stone wall would be built between the converted unit at the front of the site and the eastern boundary. A further section of dry-stone wall would be formed from the south-west boundary, along the frontage, before turning in to meet unit 2. These traditional walls would enhance the setting of the development, providing an appropriate means of enclosure for a traditional steading.

4.17 Parking areas and pedestrian access to houses would be formed in contrasting tegula paving and a covered parking area would be created under a pitched slate covered roof to the south of unit 9. Adequate parking would be provided as shown on the Site Plan comprising communal parking (10 spaces), including accessible spaces and the area of covered parking. Two private spaces are provided for units 2 and 3, and the three detached units have ample room for at least 2 cars each.

4.18 A courtyard to serve the detached units 4, 5 and 6 would be created, surrounded with a dry-stone wall in order to preserve the steading form and layout and balance the overall development with low-density coverage within the north western section.

4.19 Natural stone walling would be used to divide land within the 'courtyard' of units 7-9 to ensure the provision of private garden space to those units. A natural stone wall with grass cope would be formed enclosing the central parking area.

4.20 All new roofs would be formed to traditional pitches with a mixture of natural slate to all main areas.

4.21 Provision has specifically been made for bin stores and general storage areas to be accommodated within the proposed development with the aim of removing the need for individual home owners to position an array of sheds/ stores within garden ground which could, potentially, detract from the steading feel.

4.22 Proposed external materials are summarised overleaf:

**Fig 12**: Units 1, 2 & 3: Materials

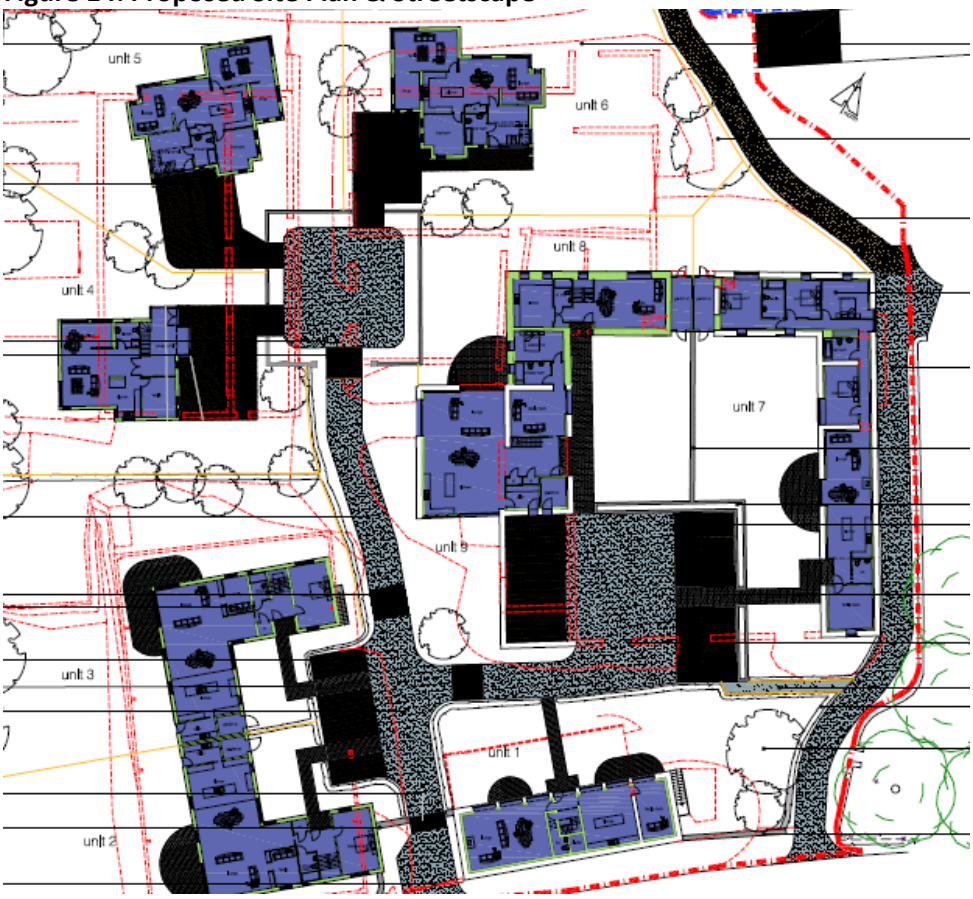
| Component | Unit 1 | Units 2 & 3 |
|---|---|---|
| **Roof** | Natural slate. Existing skew stones to be retained and re-set. | Natural slate (with zinc where indicated) and lead-clad skews. |
| **Walls** | Existing walls re-pointed with lime mortar. | Reclaimed facing-stone from demolished structures to be re-used with the pattern and mortar bedding to match unit 1. Horizontal larch cladding and off-white render used as shown. |
| **Doors** | Timber door at upper level. (Upper level doorway opening retained). Timber framed doors elsewhere. | Timber framed doors. |
| **Windows** | Painted timber framed units formed in existing archways. Conservation style rooflights. | Painted timber framed units. Conservation style rooflights. Zinc-clad extruded dormers. |
| **Screens** | Fixed louvre screens to archways. | Fixed louvre screens. |
| **External Stairs** | Existing handrail replaced with traditional steel balustrade | Unit 3 – new hayloft style stairs with steel handrail |

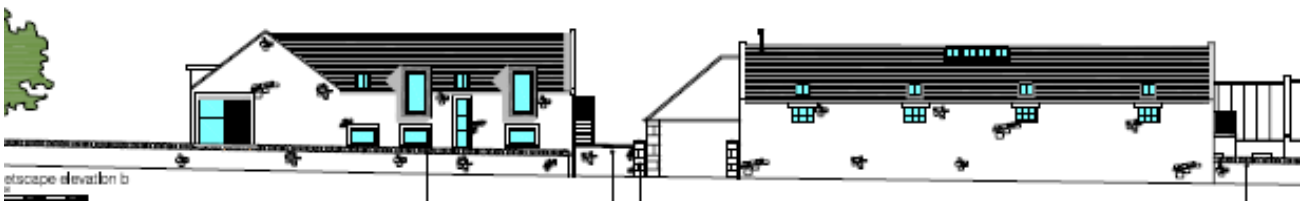
**Fig 13**: Units 4 - 9: Materials

| Component | Units 4-6 | Units 7- 9 |
|---|---|---|
| **Roof** | Natural slate | Natural slate (part zinc) |
| **Walls** | Off white render, vertical larch boarding and random natural stone. | Reclaimed facing-stone from demolished structures re-used with pattern and mortar bedding to match existing. Vertical larch cladding. Lime mortar pointing. |
| **Doors** | Timber framed double glazed units | Timber framed double glazed units |
| **Windows** | Timber framed double glazed units | Timber framed double glazed units. Zinc-clad feature dormer windows. Conservation style rooflights. |
| **Screens** | | Hardwood fixed louvres |

4.23 A full appreciation of the proposal can be seen in the lodged drawings pack. A snapshot of the proposed Site Plan and one of the Streetscape angle is shown below in Figure 14 below.

**Figure 14: Proposed Site Plan & Streetscape**



## 5.0 PLANNING POLICY CONTEXT

5.1 This section provides an overview of key planning polices relevant to the proposed development. Scottish Planning Policy (SPP) sets out national planning polices and is a key material consideration in the determination of this application. The Development Plan is made up of the Strategic Development Plan for South East Scotland (SESPlan) and the East Lothian Local Plan (2018).

### SCOTTISH PLANNING POLICY (SPP) 2014

5.2 A key focus for SPP is the creation of well-designed, sustainable places and supporting sustainable economic growth and regeneration. Paragraph 75 sets out the policy principles to be applied in promoting rural development. These include (a) promotion of a pattern of development that is **appropriate to the character of the particular rural area** and (b) encouragement of development that **supports prosperous and sustainable communities** and businesses while protecting and enhancing environmental quality. The proposal meets with both these criteria.

5.3 SPP creates a presumption in favour of development that contributes to sustainable development. Policies and decisions will be guided by key principles, including:

- *giving due weight to net economic benefit;*
- *responding to economic issues, challenges and opportunities;*
- *supporting good design and the six qualities of successful places;*
- *making efficient use of existing capacities of land, buildings and infrastructure;*
- *supporting delivery of accessible housing, business, retailing and leisure development;*
- *supporting the delivery of infrastructure;*
- *supporting climate change mitigation and adaption;*
- *improving health and well-being by offering opportunities for social interaction and physical activity, including sport and recreation;*
- *having regard to the principles of sustainable land use;*
- *protecting, enhancing and promoting access to cultural and natural heritage;*
- *reducing waste, facilitating its management and promoting resource recovery;*

*and*

- *avoiding over-development, protecting the amenity of new and existing development and considering the implications of development for water, air and soil quality*

**SESPLAN – STRATEGIC DEVELOPMENT PLAN (JUNE 2013)**

5.4 Key policies in relation to this proposal include:

- Policy 1A/ 1B Spatial Strategy; Development Locations/ Principles
- Policy 5: Housing Land
- Policy 6: Housing Land Flexibility
- Policy 7: Maintaining a 5-year land supply
- Policy 8: Transportation
- Policy 9: Infrastructure

**EAST LOTHIAN LOCAL PLAN 2018**

5.5 The following policies of the adopted 2018 Local Plan should be taken into consideration. Furthermore, in circumstances where the adopted plan is out of date or where there is a shortfall in the five-year supply of effective housing land, Scottish Planning Policy is clear that adopted plan policies on the supply of housing land will not be considered to be up to date.

5.6 Key policies in relation to this appeal and which will be addressed within the Grounds of Appeal include:

- Policy DC2: Conversion of Rural Buildings to Housing
- Policy DC4: New Build Housing in the Countryside
- Policy DC5: Housing as Enabling Development
- Policy DP1: Landscape Character
- Policy DP2: Design
- Policy DP5: Extensions and Alterations to Existing Buildings
- Policy HOU2: Maintaining an Adequate 5-Year Effective Housing Land Supply

**Policy DC2 Conversion of Rural Buildings to Housing**

5.19 This Policy provides support for the conversion of appropriate buildings in the countryside to residential use where:

*i. The existing building is worthy of retention by virtue of its architectural or historic character;*

*ii. The building is physically suitable for the proposed use and any extensions or alterations are compatible with, and do not harm, any significant architectural or historic features of the building, and are in keeping with its size, form, scale, proportion, massing and architectural character; and*

*iii. The building stands substantially intact (normally to at least wallhead height) and requires no significant demolition. Credible evidence of the building's structural stability will be required.*

5.20 The policy confirms that in the case of a change of use of agricultural buildings to housing, the change of use must involve the whole building group.

5.21 In the case of a farm steading conversion, a limited amount of new build may be acceptable where:

*a) it reinstates a part of the original steading group demolished or altered by later development alien to its character and appearance, where there is clear physical and/or historic evidence of the original form; or*

*b) it is a logical extension to an existing part of the steading that would provide a completeness to the steading's overall composition that is in keeping with its scale, form and character.*

In all cases, the external finishes used must be sympathetic to those of the existing buildings proposed for conversion.

**Policy DC4 New Build Housing in the Countryside**

5.22 This policy provides that new build housing in the countryside will only be supported in connection with operational requirement of a rural business or it is a proposal for affordable housing which is a logical addition to an existing settlement.

**Policy DC5 Housing as Enabling Development**

5.23 This policy provides that housing as enabling development in the countryside may exceptionally be supported for a number of reasons, including where it will fund the restoration of building(s) with recognised heritage value, the retention of which is desirable. Proposals must protect or enhance the setting of such features. Any enabling development must be on the same site as, and part of, the main proposal. The benefits of the proposed development must outweigh the normal presumption against new build housing development in the countryside.

**Policy DP1 – Landscape Character**

5.25 This policy provides that all new development, with the exception of changes of use and alterations and extensions to existing buildings, must:

- *Be well integrated into its surroundings by responding to and respecting landform, and by retaining, and where appropriate enhancing, existing natural and physical features at the site which make a significant contribution to the character and appearance of the area, and incorporate these into the development design in a positive way;*
- *Include appropriate landscaping and multifunctional green infrastructure and open spaces that enhance, provides structure to and unifies the development and assists its integration with the surroundings and extends the wider green network where appropriate.*

**Policy DP2 – Design**

5.26 This policy requires the design of all new development to:

1. *Be appropriate to its location in terms of its positioning, size, form, massing, proportion and scale and use of a limited palate of materials and colours that complement its surroundings;*

2. *By its siting, density and design, create a coherent structure of streets, public spaces and buildings that respect and complement the site's context, and create a sense of identity within the development;*

3. *Position and orientate buildings to articulate, overlook, properly enclose and provide active frontages to public spaces or, where this is not possible, have appropriate high quality architectural or landscape treatment to create a sense of welcome, safety and security;*

4. *Provide a well-connected network of paths and roads within the site that are direct and will connect with existing networks, including green networks, in the wider area ensuring access for all in the community, favouring, where appropriate, active travel and public transport then cars as forms of movement;*

5. *Clearly distinguish public space from private space using appropriate boundary treatments;*

6. *Ensure privacy and amenity, with particular regard to levels of sunlight, daylight and overlooking, including for the occupants of neighbouring properties;*

7. *Retain physical or natural features that are important to the amenity of the area or provide adequate replacements where appropriate;*

8. *Be able to be suitably serviced and accessed with no significant traffic or other environmental impacts.*

**Policy DP5 – Extensions and Alterations to Existing Buildings**

5.27 This policy requires that alterations and extensions must be well integrated into their surroundings and must be in keeping with the original building or complementary to its character and appearance. Development must:

- Not result in a loss of amenity with neighbouring uses, or be harmful to existing residential amenity through loss of privacy from overlooking or from loss of sunlight or daylight;
- Be of a size, form, proportion and scale appropriate to its surroundings and,

where the existing building has architectural merit be in keeping with, or complement, that building.

**Policy HOU2: Maintaining an Adequate 5-Year Effective Housing Land Supply**

5.28 This policy outlines that if an adequate five year effective housing land supply is not being maintained in East Lothian, the Council may accept the principle of housing development on land not identified by the LDP as suitable in principle for that purpose.

## 6.0 GROUNDS OF APPEAL (GOA)

6.1 This section seeks to respond to the reasons for refusal and cross referencing planning policy or material considerations that provide significant weight and support for the proposal.

### Reason for Refusal 1

6.2 The three detached and two semi-detached new build houses proposed would be sporadic new build housing development in the countryside of East Lothian for which a need to meet the operational requirements of an agricultural, forestry or other employment use has not been demonstrated. The three detached and two semi detached new building houses proposed are therefore contrary to Policies DC1 and DC4 of the adopted East Lothian Local Development Plan 2018, and Scottish Government policy guidance regarding the control of new housing development in the countryside given in Scottish Planning Policy: June 2014.

### Grounds of Appeal 1

6.3 Before specifically responding to refusal reason one we believe the background or context of the subject site and its history has not been afforded the appropriate weight. It has largely ignored the evidence provided which outlined that the previous permission for the steading conversion via two leading property/estate agents had gained no offers. Those that did enquiry soon walked away due to the full conversion option being financially unviable.

6.4 Put simple the converted scheme to which the Planning Department seeks to bring the appellant back to does not work and is not an option. The Planning Department was fully informed of this position but has failed to be appropriately acknowledge it.

6.5 The reason for refusal outlines that this proposal would be sporadic development in the countryside. It is difficult to see how this could be the case given the council approved 14 houses on the exact same site and given it seeks to redevelop within the existing confines of the steading which itself is brownfield in nature and has significant built form on it at present.

6.6 This proposal seeks to provide a sensitive, realistic and deliverable development. The site is entirely brownfield, does not break into any adjoining fields and seeks to retain and convert those parts of the Steading that have most value.

6.7 Again, it seeks to sensitively infill in parts (unit 8) replicating existing form and which was largely seen as acceptable in the previous approved scheme. Again regarding the new build aspect at Unit 2 and 3 it seeks to replace a large metal agricultural shed with sensitive steading style new build units that sit lower and relate much stronger to the steading. The new homes again are within the confines of the steading, replacing built form and critically will help enable the conversion element of those parts being retained.

6.8 The mix of new and old works within the parameters of the existing built form and boundary of the current steading area. It is the last opportunity for the key steading buildings to be saved. Their continual decline over the last ten years worsens month on month and will require to be demolished in the near future should the proposal before the LRB not be supported. That is the simple reality of what faces the appellant and the increasing health and safety burden currently placed upon them. **The proposal adheres to the ethos set out within LDP Policy DC 5.**

**Principle of Development**

6.9 A key consideration in the determination of this application should be that the principle of development on this brownfield site has already been established through the recommended approval of application 07/00288/FUL at Planning Committee in December 2008 which involved the creation of **14 dwellings** through conversion. Albeit there was also an element of new build within this proposal and significant new car parking.

6.10 The proposal seeks permission for the development of a modest number of houses. A total of three through conversion of buildings we consider to have the most heritable value, one largely like for like replacement infill between Units 7 and 9, two new build in steading style to the road frontage (replacing warehouse) and three through new build replacing an old stable block but using material commonality and reclaimed stone obtained from the steading.

6.11 The proposal presents a sensitive and most of all deliverable opportunity, with the site having been designed in consultation with a leading Estate Agent, in terms of the type of homes being demanded by the market.

6.12 In respect of the previous proposal for 14 houses, the Officer's Report to Committee highlights that public representations included concern that the 14-house development was too intensive. This application fully addresses this concern with a reduced number of units.

6.13 The conversion elements are compliant with Local Plan policy DC1 (Development in the Countryside) and LDP policy DC2 (Conversion of Rural Buildings to Housing). The Engineer's report confirms that those buildings to be converted are substantially intact and are suitable for conversion without significant demolition.

6.14 They are the ones that have the most heritable value and despite being more costly to redevelop have nonetheless been retained. The also relate the most to the frontage of the steading and perhaps the most sensitive from the core public receptor point (road) looking into the site.

6.15 Where extensions are proposed they are subservient to, and compatible (in form, scale, massing and materials use), with the buildings to be retained, in compliance with Local Plan policies DC2.

6.16 In terms of the rebuild 'infill' proposal (unit 8), where part of an existing traditional building is not suitable for conversion due to its poor structural condition, Local Plan policy DC2 allows new build where it reinstates part of the original steading and where there is physical evidence of original form. These circumstances clearly exist in this instance.

6.17 Again, it also allows new build to reinstate the original steading or by later development seen to be alien to its character and appearance. This is again to be the case with regard to the large metal warehouse which sits much higher in the landscape and bears no relationship to the original steading. Units 2 and 3, while new build, do propose to replace the large agricultural shed with a steading style replacement and which sits at a

lower level and relate better to the steading characteristics. Thus, in line with the guidance in Policy DC 2 (a).

6.18 Finally, Policy DC 2 (b) again allows for an element of new build that forms a logical extension to an existing part of a steading that would provide completeness to the steading's overall composition and that is in keeping with form, scale and character.

6.19 Units 4, 5 and 6 have been explained as being necessary as it is those plots that enable and cross fund the conversion of retained buildings. They will replace built form that already exists part of which isn't viable for redevelopment part of which is a stable block of no significant value to the rear of the steading.

6.20 So again, while new build replaces existing built form, it is still contained with the steading confines and which are sought to reuse stone from the steading together with other high quality build materials such as wood and natural slate roofing. Should the Local Review Body seek to have any design comment or changes that can be applied by a suitable worded condition.

6.21 In accordance with Local Plan policy DC1, the proposal will be wholly contained within the existing steading brownfield site and will not involve the loss of any agricultural land. The proposal is contained within the same area as the previous planning permission and which was deemed to be acceptable.

**Case Example**

6.22 There are a number of examples in East Lothian were a conversion/new build development has achieved planning permission. Figure 15 provides images of one such case (06/00415/FUL) at Under Bolton Farm Steading.

6.23 This proposal sought conversion for 12 houses and construction of 19 new build homes. This represents a much large development than that proposed but one that required a mix of conversion and new build to be viable. It was approved at East Lothian's Planning Committee.

**Figure 15: Under Bolton Farm Steading**

## Reason for Refusal 2

6.24 The second reason for refusal outlines that it considered the proposal would set an undesirable precedent for development of new houses elsewhere in the East Lothian countryside the cumulative effect being a detrimental impact on the rural character and amenity of countryside.

## Grounds of Appeal 2

6.25 We would begin by outlining the second reasoning appears not to cross reference any related planning policy and overlaps with reasons to which we have already responded to within GOA 1.

6.26 It is not accepted that this proposal would create undiserable precedence the first reason being that there is no such thing in terms of planning legislation or policy. Each application will determined on its individual merits and thus no one case will be the same. There again are cases like that shown in Figure 15 that show similar and larger proposals that have already been accepted by the Planning Committee.

6.27 Other nearby local authorities allow new build in the countryside where there is groupings of buildings as they enable addressing rural population decline and support local services.

6.28 This proposal adheres to those principals of addressing rural population decline and is contained within the confines of an existing brownfield site and which converts and/or replaces existing built form.

6.29 To assert it would detrimentally impact the rural character of the countryside when it works within an existing built form context is unfounded and unsupported with any evidence. The proposal will sit well within the landscape as a significant proportion will remain as is with others replacing or in some cases bettering the scale and massing of what already exists. The visual impact from core receptors will largely be the same and in no way will there be significant or detrimental impact on the rural character of the area.

## Reason for Refusal 3

6.30 The third reason for refusal was advanced on the basis that it was considered that it was not demonstrated that the new build housing is the only means of preventing the loss of historic buildings making a positive contribution to the rural landscape and again seeks to advance purely a conversion development. It again reinstating the new build being contrary to Policy DC 5.

## Grounds of Appeal 3

6.31 As stated previously the reasoning to refuse this application has sought to ignore or simply failed to take account of the position and evidence presented that clearly outlines why a pure conversion route is not viable and why should that continue all the buildings will need to demolished. It again appears to have not highlighted the support provided within Policy DC 5.

6.32 The proposal offers up a sensitive compromise and one which will ensure the retention and conversion of the buildings that have the greatest heritable value. The new build some of which is infill and others a net betterment to the large metal warehouse that sits on site. The new build homes and the Masterplan as a whole has been advanced on advice from a leading and local estate agent in terms of what the market demands and that which will sell to enable the cross funding needed for the conversion aspect.

6.33 The previous purely conversion route has been marketed twice by leading Estate Agents with no firm offers made. The proposition was not viable for a developer to take on and has failed to be properly acknowledged in this decision nor the financial viability appraisal lodged in support of this position.

**Development Economics – Project Viability**

6.34 Local Plan Policy DC1 and LDP Policy DC5 (Housing as Enabling Development) provide support for housing as enabling development in the countryside where it will fund the restoration of building(s) with **recognised heritage value**, the retention of which is desirable and where the 'enabling housing' is on the same site as the main part of the proposal. Proposals must protect or enhance the setting of such features. The set of circumstances which exists at Longnewton match those set out within this 'enabling development' policy and the new build elements of the proposal are considered to comply with this policy.

6.35 An indicative viability assessment was prepared and provided to the Council. It was clear that the development, without the new build units, is not a viable proposition. If the viability of the overall development cannot be secured through the inclusion of proposed 'enabling' housing units then the steading site will remain vacant and disused. The buildings will then further deteriorate over the coming years, as has been the case since the unmarketable planning permission of 2008. Effectively, this proposal presents the last opportunity to secure planning permission for a viable development proposal and secure the heritage value of the buildings which are capable of retention.

6.36 Although significant deterioration has occurred since 2008, certain attractive buildings with heritage value do remain in a physical condition whereby they are suitable for conversion to residential use, as confirmed by the Structural Engineer. There is genuine risk that these traditional steading buildings will be lost forever if planning permission for a viable development proposal cannot be secured in the near future.

**Structural Engineer's Report – Building Condition**

6.37 In compliance with Local Plan policy DC1 and LDP policy DC2, the Applicant has procured a Structural Survey of all the buildings at Longnewton from CRA (Edinburgh) Consulting Structural and Civil Engineers. The report divides the buildings at Longnewton into 5 areas "A" to "E" as can be viewed on the buildings plan which forms part of their report.

**Fig 16**: Buildings Plan (CRA Edinburgh) Consulting Civil & Structural Engineers


6.38 **Block A**: The proposal includes the retention of traditional building 'A'. The attached more modern lean-to structure would be removed to restore the building's original form. The report confirms the traditional buildings to be structurally sound and suitable for conversion.

6.39 **Block B**: The development proposal includes the demolition of Building B, a modern steel-clad portal frame structure.

6.40 **Block C:** This comprises two elements: Part (X) with stone walls and slated roof is used for equestrian stabling at present. It is acknowledged that, from a structural perspective, the engineer considers this element to be suitable for conversion. Part (Y) with stone walls, steel trusses and cement fibre roofing is not considered to be suitable for retention due to the very poor condition of all elements of the fabric.

6.41 Notwithstanding the engineer's findings that part 'X' is suitable for retention it is likely that upon removal of adjoining part 'Y', the integrity of the building may be compromised. Furthermore, in order to establish a viable development, and prevent loss (through further deterioration) of the attractive traditional buildings with heritage value, it is essential to integrate sensitively-designed new build dwellings into the proposal as part of the 'enabling development', including three houses which must be located within the area where this traditional building lies.

6.42 **Block D**: The Engineer has divided Block D into eight constituent parts (A) to (G) and (M).

6.43 Building (A), is of 1 ½ storey height with stone walls, slated roof and dormer to west elevation. It is considered to be suitable for retention. This is retained within the development proposal.

6.44 Areas (B) to (D) of the building are effectively more modern infill between the traditional surrounding structures. The Engineer considers these parts to be unsuitable for retention and the development proposal includes for their removal.

6.45 Building (E) is single storey with stone walls and pitched hi- ended slated roof. It is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.46 Building (F) is of single storey height with slated roof and hipped return with building E. It is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.47 Building (G) is of 1 ½ storey height with pantile roof covering. The building is considered to be in very poor condition by the Engineer and is not suitable for retention. The proposal involves its removal and replacement with an 'infill' building of similar massing and design.

6.48 Building (M) is a 1 ½ storey height double pitched extension which is considered to be suitable for conversion by the Engineer. This is retained within the development proposal.

6.49 **Block E**: The Engineer has divided Block E into four constituent parts (K), (J), (K) and (L) and advises that none of these parts is suitable for retention due to their very poor structural condition and clear evidence of structural movement. The development proposal involves the removal of this part of the steading.

6.50 In summary, the development proposal concurs with the conclusions of the Engineer in terms of suitability for retention, or requirement for removal, for all aspects which have been surveyed, aside from section (X) or Block C, which is to be removed as part of the development proposal.

6.51 In this regard, it is important that the Planning Authority does not ignore the economics of development, as set out within the appraisal, nor the demands of the property market in terms of the advice provided to the Applicant by the leading Estate Agent who would act as marketing agent for the site. The clear position and evidence has been provided and again why we consider reason for refusal 3 again to be lacking in foundation and not taking due regard of all the evidence provided.

## Reason for Refusal 4

6.52 The fourth reason for refusal was that it was considered that the houses would not be well integrated into their surroundings and in keeping with the original buildings on site. It was considered that it would have a harmful impact on the character of the countryside and contrary to Policies DC9, DP1 and DP2.

## Grounds of Appeal 4

**Design and Layout**

6.53 The proposals are considered to comply with Local Plan and LDP policies DP2 (Design). The development design has been carefully formed by the Applicant's Architect with the input of the proposed Estate Agent and with the knowledge of the previous (unmarketable) permission which was secured over the site in 2008.

6.54 The proposal is appropriate for the location in terms of scale, form and massing. It consolidates and preserves the sense of place of the steading (which will otherwise be lost, in time) and complements the local rural character. The buildings are oriented to

ensure privacy whilst providing an attractive outlook from key elevations. The view of the development from the key receptor (the public road) will be attractive. Boundary treatments use traditional materials, namely a variety of stone walls and the re-use of stone from elements of demolition.

6.55 Local Plan policy DP1 and LDP policy DP2 also require that external materials are sympathetic to those present on the buildings to be converted. The materials which would be used have been summarised and are explained more fully within the Architect's Heritage Design Statement. They have specifically been selected to be appropriate for the rural steading setting and, in many cases, match existing materials. Significant re-use of stone and slate from those buildings which require to be demolished will be implemented.

**Heritage Considerations**

6.56 The Officer's Report relating to the previous application for 14 units noted that "*The steading buildings are well contained within their landscape setting and are part of the historic form and character of this part of the East Lothian countryside. They have some* ***architectural merit and make a positive contribution to the rural landscape and built heritage of the area.***" The Council's Heritage Officer previously noted that the steading is "***an historic steading dating back to the 18th Century***". It is clearly acknowledged by the Planning Authority that some buildings have heritage value and are worthy of preservation.

6.57 In 2007, the Planning Officer also noted, within their report, that ***"some of the steading buildings are suffering from disrepair, giving an appearance somewhat detracting from the amenity of the area. If left unused…they would be likely to fall into a further state of disrepair with a greater harmful effect on the appearance and amenity of the area."***

6.58 Unfortunately, due to the lack of demand for the development site in 2008/09 after planning permission was approved, exactly this situation has occurred, although, as noted, fortunately certain buildings with considerable heritage value do remain in a structural condition rendering them suitable for conversion, but at a higher cost than new build.

6.59 Whilst the buildings are not listed, those towards the front of the site (with public road frontage) are in fair condition and securing their long-term future through conversion to residential use would provide a clear and lasting link to the historic agricultural steading use of the site through a number of measures including:

- The use of appropriate external materials throughout;
- The conversion of the attractive building at the front of the site;
- The conversion of a key grouping of buildings to the east/ centre of the site;
- The use of appropriate and traditional boundary treatments;
- The implementation of appropriate new build forms, set out in a pattern which respects and reflects the 'steading layout'.

**Landscape and Visual Impact and Residential Amenity**

6.60 The proposed development will not affect any areas subject to landscape designations and it will not appear intrusive or incongruous within the landscape setting in accordance with Local Plan policies DC1 and DP1 and LPD policy DP1 (Landscape Character). On the contrary, it will secure a viable long-term future for several attractive buildings with heritage value, of which unit 1 (the detached traditional building at the site frontage) will be most apparent from the public road. Views into the site will be obtained beyond traditional boundary dry stone walls, and the southern elevation of unit two will be viewed from the public road also. This new build unit is designed in 'steading form' and will complement the retained buildings to the east and north.

6.61 Again, in accordance with the above-noted policies, the proposed development would be well integrated into the landscape, reflect its character and quality of place and be wholly compatible with its surroundings. The site is already well integrated into its immediate setting and wider landscape setting as an 'established steading site' with existing boundary treatments which will be renewed/ reinforced.

6.62 The proposal is considered to comply with LDP policy DP1 in terms of making a significant positive contribution to the appearance of the area, particularly as the site currently contains a large number of dilapidated buildings, some of which are unsightly, and would become more so as further deterioration occurs through time.

6.63 Landscaping is proposed as illustrated on the Site Plan and, together with existing mature trees to the east, and the established hedge to the north west, this will help to integrate the development into its surroundings, although the site is already well contained within the landscape setting (as previously acknowledged by the Planning Officer in 2008). The proposal is thus considered to be compliant with Local Plan policy DP1 (Landscape and Streetscape Quality) and LDP policy DP1 (Landscape Character).

6.64 It has been established that the steading is, overall, now suffering from significant disrepair and as a result it is detracting from the appearance and amenity of the area. Further, many of the buildings are in a dangerous condition. It must be appreciated that significant investment to improve or maintain the buildings is not a reasonable expectation whilst no viable future has been secured for the site.

6.65 In terms of residential amenity of existing houses, it is noted that there are two houses in close proximity to the site (the eastern-most being occupied by the Applicant) but the presence of mature trees along the proposal's eastern side limits inter-visibility. Overall, it is considered that there would be no impact upon the residential amenity of neighbouring houses in accordance with Local Plan policy DC1 and LDP policy DP2. Longnewton Farmhouse will have use of the track which runs to the east of the site as this track is not to be used to serve the development.

6.66 The proposed development has been designed to ensure that each property has a high level of residential amenity, particularly as the Applicant has been advised that the market demands such, including reasonable levels of private garden ground. The layout has thus been carefully drawn up to ensure that there is private garden ground attributed to each property and that each house will have a good level of privacy. Large areas of communal ground are not attractive to buyers in this type of development.

## Grounds of Appeal 5

6.67 While not specifically related to a reasoning for refusal one does consider an additional grounds of appeal is with regard to ensuring an effective 5 year housing land supply and that one should encourage sustainable rural housing to address rapid decline in rural population and services.

6.68 This is acknowledged in SPP and in general Development Plan policies. We consider that a proportion of housing supply should be based in rural areas in order to support rural communities. We consider that there continues to be shortfall in housing supply in East Lothian and across Scotland in general. Appropriate, affordable and sustainable rural housing should be encouraged at every opportunity. The proposal seeks to meet and deliverable upon those principles.

## 7.0 CONCLUSION

7.1 Ferguson Planning has been appointed by Bill & Margaret Whiteford (the appellant) to submit an appeal against refusal for the development of 9 dwellings within a brownfield, former farm steading site at Longnewton Farm, near to Haddington. The principle of development at the steading was established in 2008 with approval given to the creation of 14 dwellings.

7.2 The proposal involves the retention of the majority of traditional buildings within the steading which have heritage value, and which are capable of conversion, as confirmed by the Structural Engineer's Report. This proposal will effectively 'save' traditional buildings which are at risk of being lost if a viable future is not found through an appropriate development proposal.

7.3 The application site is located in a rural location on the site of a dilapidated farm steading which has become unsightly and unsafe in an otherwise attractive rural landscape setting in close proximity to two other residential properties.

7.4 Significant marketing efforts were implemented by two separate Agents following the achieving of the 14-unit planning permission in 2008. However, due to the compact layout of the development, the small scale of the proposed units and the lack of private garden ground, the site did not attract any serious interest from developers and remains unsold. In the intervening period the buildings have deteriorated further, but it is positive that some do remain in a condition suitable for conversion and are thus able to be secured from further deterioration.

7.5 The proposal has been carefully designed to respond to the steading character of the site and the rural setting, generally. The new build dwellings and the conversion subjects are well integrated, with a clear 'steading theme' running throughout the design proposals. Traditional materials are used throughout the site and much of the stone/ slate from necessary demolition will be re-used within buildings and boundary treatments.

7.6 The new build dwellings are an essential part of the development as these elements render the proposal viable from an economic perspective. The new build proposals will thus enable the long-term future of the traditional buildings, some of which are understood to date from the 18th Century, to be secured.

7.7 In terms of visual impact, the proposal is considered to be appropriate for the rural location and will offer a significant improvement from the current position. The key receptor is the public road (C92) and from here an attractive view will be obtained into the site beyond traditional boundary walls. Unit 1 is a detached traditional steading building, of pleasing form, which lies adjacent to the public road.

7.8 The Local Review Body is respectfully requested to approve this Appeal which will provide good quality rural housing for East Lothian and assist in the delivery of a 5-year housing supply. The visual amenity of the area will be significantly enhanced and traditional buildings with heritage value will be saved. The proposal is compliant with Local Development Plan Policy, including that relating to: Development in the Countryside, Enabling Development, Design, Landscape Quality/ Character and policy on Extensions, Alterations and Conversions.

# APPENDIX 1: CORE DOCUMENT LIST

1. Location Plan
2. Site Plan
3. Floor Plan Units 1,2 & 3
4. Elevation Plan Units 1,2 & 3
5. Floor Plan and Elevation Units 4&5
6. Floor Plan and Elevation Unit 6
7. Floor Plan Units 7,8 and 9
8. Elevation Plan Units 7, 8 and 9
9. Building Use Plan
10. Streetscape Elevations
11. Existing Site Plan
12. Existing Elevations
13. Landscape Plan
14. Roof Plan
15. Planning Statement
16. a. Structural Engineers Report
    b. Email Response 23.05.19
    c. Engineer Response 05.02.19
17. Ecological Survey Apr 18
18. Heritage Design Statement
19. a Site Investigation report
    b Site Investigation Report section 1
    c Site Investigation Report section 2
20. Balustrade Brochure
21. Rooflight Brochure
22. Slate vent Brochure
23. Soil Vent Pipe Brochure
24. Wall Grill Information
25. Flue Information
26. Example Flue image
27. Application Form
28. Officers Report 10th December, 2008
29. Officers Report 3rd October, 2019
30. Decision Notice
31. Indicative Outline Viability Appraisal (Private & Confidential)