

HATTON VILLAGE MIXED USE SITE
ENVIRONMENTAL ASSESSMENT REPORT
VOLUME 1: NON-TECHNICAL SUMMARY



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TABLE OF CONTENTS

Section 1: Introduction	1
Section 2: The Need for the Project	2
Section 3: The Development Proposal	3
Section 4: Consideration of Alternatives	6
Section 5: Environmental Assessment	6
Section 6: Planning Policy	7
Section 7: Socio Economics and Human Health	8
Section 8: Cultural Heritage	9
Section 9: Biodiversity and Ecology	11
Section 10: Soils and Geology	15
Section 11: Hydrology and Flooding	17
Section 12: Air Quality	17
Section 13: Noise	17
Section 14: Traffic and Transport	18
Section 15: Landscape and Visual Impacts	18
Section 16: Residual Effects	19
Section 17: Summary and Schedule of Commitments	20
Figure 1: Site Location	22
Figure 2: Site Boundary (Map)	23
Figure 3: Site Boundary (Satellite)	24
Figure 4: Masterplan Layout	25
Figure 5: Cultural Heritage	26
Figure 6: Phase 1 Habitats	27
Figure 7: Solid and Drift Geology	28
Figure 8: SEPA Flood Map	29
Figure 9: Noise Mitigation Zones	30
Figure 10: Landscape Character	31
Figure 11: Historical Receptors	32
Figure 12: Viewpoints	33

Section 1: Introduction

1.1 Background

McAleese & Associates (UK) Ltd has been instructed by Inverdunning (Hatton Mains) Ltd (hereafter referred to as “Inverdunning”) to prepare an Environmental Assessment Report (EAR) in support of a representation to the Edinburgh Development Plan 2 (EDP2) Main Issues Report (MIR) for a residential led, mixed use development (hereafter referred to as “The Development”) on land at Hatton Mains, City of Edinburgh, NGR NT 145 695 (hereafter referred to as “The Site”). The location of the site is shown in Figure 1.

Specialist input to the EAR has been provided as follows:

Specialism	Name of Specialist
EIA Project Management	McAleese & Associates (UK) Ltd
Planning	Pegasus Consultancy Ltd
Socio Economics and Human Health	McAleese & Associates (UK) Ltd
Archaeology and Cultural Heritage	AOC Archaeology Group
Biodiversity	Nigel Rudd Ecology – Phase 1 and Protected Species Survey Alan Motion Tree Consulting Ltd – Arboricultural survey Kleerkut – Invasive weeds survey Kinross Ecology – Pink Footed Goose survey
Soils and Geology	GM Civil and Structural Consulting Engineers Ltd
Flooding and Drainage	GM Civil and Structural Consulting Engineers Ltd Millard Consulting Ltd
Air Quality	The Airshed Ltd
Noise	The Airshed Ltd
Transport and Access	AECOM Ltd
Landscape and Visual Impacts	McAleese & Associates (UK) Ltd

Table 1: Specialist Input to EAR by Technical Discipline

1.2 The Assessment Report

The EAR is comprised of a number of volumes:

- Volume 1 is the Non-Technical Summary (NTS);
- Volume 2 is the Main Report; and
- Volume 3 is the Technical Appendices;

The NTS is presented in non-technical language as far as possible to allow non-specialists and the community the opportunity to review the development proposal as well as the anticipated effects and to examine how these are proposed to be mitigated.

The Technical Appendices contain a number of reports which has informed the findings of the EIA. These specialist reports are:

- Human Health Rapid Assessment Tool output;
- A Phase 1 ecological survey;
- A tree conditions report;
- An invasive weeds survey report;
- Pink Footed Goose survey;

- Listed building and heritage survey;
- A Flood Risk Assessment (FRA);
- Sustainable Urban Drainage (SUDs) design statement;
- A contaminated land condition report;
- A Transport Assessment; and
- A Landscape and Visual Impact Assessment;

Section 2: The Need for the Project

2.1 Masterplan Framework

The Masterplan Framework has been prepared by Max Davidson Architecture on behalf of Hatton Mains (Inverdunning) Ltd to support the representation to the MIR. It establishes the key development and design parameters applicable to the site demonstrated through an indicative, conceptual layout. This has been informed through a thorough contextual site analysis, flood risk assessment, landscape and visual impact assessment and other environmental and technical studies, for example, looking at potential transport, noise and air quality impacts. The Framework has also been influenced through consultation with local community, stakeholders, City of Edinburgh Council, utilities service providers and other statutory bodies.

2.2 National Planning Policy

National planning policy provides the framework within which planning authorities are to assess development proposals and are key material considerations, as detailed within:

These key policy documents set the context for regional and local planning in Scotland and are key material considerations in the determination of any planning application. Both documents are currently under review following approval of the Planning (Scotland) Act 2019 and a new National Planning Framework 4 (which will combine both documents) is expected to be published in draft later in 2020.

SPP outlines the Government approach to the creation of new settlements:

Overall, in terms of SPP, the proposal for a new stand-alone settlement at Hatton Village could be promoted in line with existing policy and can be justified with a suitable infrastructure and design approach.

2.3 Development Plan

SESplan is now technically out of date, being more than five years old in line with SPP, but still provides the broad spatial context for assessing development proposals at this time. The Proposed SESplan was adopted in 2016 but was rejected by Scottish Ministers in May 2019. At a local level, the Edinburgh Local Development Plan was adopted in 2016.

In terms of housing needs, based on the emerging Local Development Plan 2 and if utilising the 2015 Housing Need and Demand Assessment, there is a need to identify land for between 17,600 and 27,900 new homes (net of existing land supply) depending on which option is preferred. Clearly, there is a need for a significant level of housing land which will require to include greenfield sites if the housing demand and growth aspirations are to be met.

The Hatton Village site is not allocated for development. Therefore, this would form a new settlement which, as set out within supporting documents including an Environmental Impact Assessment, could be implemented without any significant adverse impacts upon either the Edinburgh Green Belt or infrastructure, subject to suitable funding contributions.

2.4 Economic Benefits

As a residential development with elements of supporting uses, including mixed use development, the Hatton Mains proposal will seek to contribute to the local and regional economy in the following ways:

Construction Phase

- Direct employment within the construction industry and supporting sectors during phased construction period; and
- Indirect employment generation through supply of goods and services to the proposed development.

Operational Phase

- Creation of a high-quality new settlement, supporting and contributing to the delivery of development targets and objectives set out in regional and local planning policy, including the Strategic Development Plan for Edinburgh and South East Scotland (SESplan approved 2013) and the Edinburgh Local Development Plan (LDP, adopted in 2016);
- Upgraded site access and improved public transport serving the local area;
- Providing homes for the local workforce which services business and enterprise in Edinburgh and wider West Lothian area; and
- Offering scope for local employment within the various new mixed uses on site.

Section 3: The Development Proposal

3.1 Site Location

The Site is within the administrative area of the City of Edinburgh Council (CEC) and is located approximately 11km southwest of Edinburgh City Centre (Figure 1). The site extends to approximately 62 ha.

The site is bordered on the south by the A71 and to the east by a belt of mature woodlands. The rest of the site is bounded by agricultural fields. The site is also bisected by Dalmahoy Road, a minor road running between the A71 and the village of Ratho (Figure 2).

3.2 Site Description

The site consists of undeveloped, agricultural land and is situated within the greenbelt.

The site is bordered by the A71, to the south, and by agricultural fields to the north, northwest and mature woodlands to the east (Figure 3). To the southwest, lies Easter Hatton Mains and along the southern border lies Ratho Park Carvery which incorporates St Mary's church hall and refectory cottage (a listed building). This building lies outwith the existing development site and, hence, will be retained. The site is bisected by the Dalmahoy Road, a dual lane minor road, and is served by the X28 bus service, which goes direct to Edinburgh Town Centre, and service 28, which gives access to Haymarket Station.

The Dalmahoy Country Club and golf course lies on the opposite side of the A71, to the south.

As far as is presently known, the site has not been subject to previous industrial activities. It is not in an area affected by historical mining, although it does lie above a coal-field. Whilst the site is not situated within a conservation area, it does lie in close proximity to a number of listed buildings and also in close proximity to a Garden and Designed Landscape Area, in the form of Hatton House, a degraded, but important, landscape character.

The site is not in an area at risk of fluvial flooding, but some surface water flooding is a possibility at the northern boundary and south-eastern quarter of the site. The site does not lie in close proximity to an area protected for its ecological value. The site does not lie within an air quality management area.

3.3 Proposed Development

Representation to the MIR is for the residential led development comprising the following:

- Approximately 1,200 residential units;
- Village centre comprising of local retail, leisure, healthcare / community centre, transport hub and flatted residential properties;
- Site provision for a single stream primary school / nursery;
- Open space and landscaping comprising of a neighborhood park, linear parks, local parks, amenity space plus new and retained woodland;
- Surface water drainage infrastructure comprising wetland, retention ponds and bioswales;
- Roads infrastructure including upgraded A71/Dalmahoy Road junction, new junction to the east onto A71, upgraded / amended Dalmahoy Road including new village square and new residential street network; and
- Footpaths / cycle paths including set back route adjacent to A71 on southern site frontage;

The development site will be enhanced by new woodland planting, along the west and northern boundaries of the site, with and upgrade and enhancement of the existing Dalmahoy Road.

The Masterplan layout of the scheme is shown in Figure 4. It is comprised of three distinct sections, with a residential led mixed-use development to accommodate 1,200 homes plus a community hub with the ability to provide various local retail/leisure/community uses. The layout includes a linear parkland corridor that would contain surface water treatment features, active travel routes and an extensive landscape framework (containing active and passive recreational uses).

3.4 Housing

The homes are divided into a series of blocks and will be two to three stories high. It is envisaged that they will be of traditional brick build with render finish, combined with tiled roofs. Homes will be a mixture of flats, semi-detached/terraced and detached homes as shown in Table 2.

Housing Type	Proportion	Number
1 bed	2%	24
2 bed	25%	300
3 bed	40%	480
4 bed	25%	300
5 bed	8%	96
Total	100%	1,200

Table 2: Housing type mix

It is anticipated that a minimum of 25% of housing would be affordable housing and managed by a housing association.

3.5 Commercial and Employment

Localised commercial provision will be supplied within the central hub. This could provide up to 680m² of local retail, leisure and / or commercial / healthcare space.

3.6 Open Green Space

The open greenspace aspect of the development is sizable, occupying a significant part of the development site. It has been closely integrated with the surface water drainage infrastructure to increase overall water retention and infiltration potential of the entire development. All greenspaces will be planted using indigenous species.

The open greenspace facilities provided within the development are summarised in the supporting Design and Access Statement.

3.7 Sustainable Drainage

A surface water drainage strategy has been prepared. The proposed surface water drainage network servicing the proposed development will comprise of a gravity closed pipe network, draining surface water runoff from roofs and other impermeable areas (such as roads, car parking and hardstanding) to the linear wetland/swale features running through the site. These will route the surface water flows through a detention basin and pond prior to discharge to the burn on the northern edge of the site. The wetland / swale, along with the detention basin and pond will be integral part of the landscape treatment and open space proposals for the site and active travel routes will also be associated with these linear features.

3.8 Access

3.8.1 Public Transport

There is existing bus route provision, with a regular/high frequency service along the A71 (30 minutes to City Centre) with existing bus stops on the site boundary. Hermiston Park and Ride is located approximately 2.5 miles east of the site providing another option to access wider services. There is scope and appetite to link to existing services to the north and east of the site. This is assessed within the supporting Transport Assessment (Appendix I).

In terms of rail, Currie Station is within approximately 2.5 miles of the site with scope for park and ride or access by cycle.

3.8.2 Vehicular

The proposed site adjoins the A71, a main arterial route with the minor Dalmahoy-Ratho Road bisecting the site. This provides the opportunity to link directly to both local and strategic roads without significant new physical infrastructure. The A71 connects with the A720 Edinburgh City Bypass, approximately 3 miles to the east, with onward links to Edinburgh City Centre, the motorway network (M8/M9) and east central Scotland.

3.8.3 Cycling & Walking

The Core Path network is accessible within 1,600m of the site with CEC15 (Union Canal) accessed at Ratho (or east of Ratho Park Golf Course) providing an east-west link which is also a national cycle route (NCR754) providing direct access to Edinburgh City Centre.

3.8.4 Servicing

It is anticipated that service vehicles accessing the site would be limited to the collection of refuse and incidental deliveries to residential properties. This is likely to occur on street in proximity to the frontage of properties so as to minimise disruption to other road users. Sewerage and water supply, along with utilities, would likely be connected into within the eastern end of the B7015.

Section 4: Consideration of Alternatives

Strategic alternatives to the proposed development were reviewed and include:

- Development of new community elsewhere – e.g. alternative site;
- No development on site – no development of additional residential units and associated community and greenspace uses; and
- Residential-led mixed use development - the 'preferred use';

Detailed alternatives for mixed use development were then considered. This process has involved consideration of the influencing factors posed by existing site features, including topography, ground conditions, drainage features and environmental considerations.

The development layout has also been influenced by consultation responses in parallel with understanding the existing sensitivities and constraints.

Iterations of the preferred development included analysis of the most optimal locations for the built and landscaped elements, so as to avoid impacts on key landscape features, such as key views towards Edinburgh and The Pentland Hills.

Detailed alternatives examined alternative street layouts, building massing and height.

The assessment of alternative options concludes that the rural setting of the proposed Hatton Village site offers a significant opportunity to establish a new sustainable, neighbourhood within close proximity to the City of Edinburgh.

Section 5: Environmental Assessment

This Environmental Impact Assessment (EIA) has been undertaken in accordance with The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

The EIA of the proposed development has been undertaken as an integral part of the development's appraisal and design process. The objectives of the EIA process are to identify the likely consequences for the natural and human environment arising from the development and to consider these issues within the development planning and design process.

The process of EIA has therefore been used as a means of informing the decision-making process throughout the design to avoid potentially significant impacts where practicable and by embedding mitigation measures to reduce or offset any predicted, adverse environmental impacts.

This Environmental Assessment Report (EAR) documents the EIA process and records the predicted environmental impacts. The purpose of the document is to ensure that decision makers, statutory parties, technical specialists, non-statutory bodies with interests in the environment and local communities are fully informed of the proposals.

5.1 Consultations

The development proposal for the site has undergone an iterative process involving the project team and key stakeholders. Further detail on the consultation process is provided in the Planning Application Consultation (PAC) Report submitted as part of the Planning Application.

5.2 Community Consultation

In addition to statutory EIA scoping, the Applicant has undertaken pre-application consultation.

Hatton Mains Non-Technical Summary

Submission of a Proposal of Application Notice was made in June 2016, informing local Community Councils (Ratho, Balerno, Currie, Barnton & Cramond), local councillors, the Pentland Neighbourhood Partnership and the local community of the new village proposal.

Initial pre-application community consultation was held on behalf of the landowner in September 2016 with events advertised and held at both Ratho Community Centre and Heriot-Watt University's Riccarton campus. A separate meeting with Ratho Community Council was also held.

An overview of the planning and design context for the proposed development was provided along with initial indicative proposals setting out the concept of a new village.

The events were well attended with a range of discussion enabled on the merits of a new village proposal to accommodate part of Edinburgh's housing need. Much of the discussion focussed on infrastructure delivery and scope to accommodate growth on the A71 arterial route. Early improvements and mitigation of traffic impact was viewed as a key requirement along with ensuring local facilities were provided in early phases. The inter-relationship of the new village with Ratho was also debated with a need to ensure that there were benefits to off-set potential impacts.

Inverdunning (Hatton Mains) Ltd became the delivery partner/promoter for the Hatton Mains site in 2018 and an update was circulated to all community councils, local councillors and interested parties in October 2018. This set out the intention to undertake technical studies and prepare a masterplan to allow for promotion of the site via the emerging Local Development Plan in 2019 with potential public consultation in late 2018.

A further update was circulated in December 2018 noting that due to the close proximity of the planned Local Development Plan Main Issues Report consultation, it was considered that further public consultation would be delayed until after that formal process had been undertaken.

A draft masterplan was circulated to enable interested parties to see the design progress to date and a further meeting was held with Ratho Community Council to provide an update and discuss the emerging design. As outlined within the project updates, it is the intention to hold further public consultation into proposals from Summer 2020 onwards to allow for full consideration of the proposals as they are progressed through the Local Development Plan process.

Section 6: Planning Policy

6.1 Planning & Spatial Policy

Scottish Planning Policy does support the creation of new settlements in the right circumstances and the political and administrative 'push' for development growth provides the platform at the national level to instigate such a proposal.

At the strategic level, existing policy supports growth areas based on public transport corridors and West Edinburgh will continue to remain one of the key areas for growth, as outlined in the emerging West Edinburgh Study, which identifies the A71 corridor specifically.

At the local level, the Choices for City Plan 2030 consultation has identified a need for a significant level of new housing. A combined approach to delivering this housing is required, utilising appropriate urban and greenfield sites. The majority of greenfield sites being promoted within Edinburgh and extensions of existing communities with the associated political resistance due to strain on infrastructure and 'piecemeal erosion' of Green Belt.

Hatton Village provides the opportunity for a distinct new settlement option for City of Edinburgh Council to consider as a means to contribute to growth requirements.

The full suite of supporting documents including Environmental Impact Assessment, Transport Assessment and design proposals outline how Hatton Village can be delivered in terms of infrastructure requirements. As illustrated above, the site is well connected to West Edinburgh's key transport and employment hubs and there is potential to feasibly link to these existing features without excessive infrastructure costs within the LDP timeframe.

The proposal can also provide a high-quality sustainable design and landscape approach to mitigate perceived impact upon adjoining designations.

Section 7: Socio Economics and Human Health

7.1 Socio Economic Appraisal

The baseline review of the sites contextual area shows a site within a location characterised by:

- Population anticipated to grow by a greater rate than the national average;
- The current area has a higher than national average number of children and people of working age;
- Edinburgh has a high number of private rents compared to social rents;
- Mean house prices in Edinburgh are significantly higher than Scotland's average;
- There has been a strong growth in accommodation, professional services and food services sectors;
- There is a lower unemployment rate in Edinburgh than for Scotland as a whole;
- There are significantly more educated and skilled workforce members in Edinburgh than in Scotland on average;
- The development is expected to contribute £1.7m annually to local authority income;
- The development is expected to add 1,710 FTE jobs to the area; and
- There is a need for additional services in medical, educational and dental to meet the needs of 2,500 new residents.

7.2 Health Impact Appraisal

The aim of this rapid Health Impact Assessment was to identify the potential health and wellbeing impacts of the proposed Hatton Mains development and make recommendations as to how project delivery could be modified and enhanced in order to remove or minimise negative or harmful health and wellbeing impacts and maximise positive or beneficial effects upon health and wellbeing.

Many potential positive impacts and opportunities to improve the development and the services within it were identified during the HIA process. Some negative or unintended impacts were also raised.

Potentially problematic issues were noted and addressed with recommendations and mitigation discussed. Overall, it was concluded that the Hatton Mains development has the potential to be beneficial for the area and its local people and to support large numbers of society. It will positively deliver some services and accommodation, which can be maximised and built on.

It has also highlighted some issues that could potentially be detrimental and practical recommendations for actions to minimise these will be formulated. It is felt, that at this stage of the development (Planning Permission in Principle), that the HIA has identified all major issues.

However, at the detailed design stage, it is recommended at a further study of the potential impacts, that the built form may have on the health of future residents and the local community, be explored via a more formal HIA exercise.

Section 8: Cultural Heritage

The main objective of this chapter is to identify the archaeological and cultural heritage value of the Site at Hatton Mains and to identify the potential for direct and indirect effects which may result as a consequence of the proposed development.

8.1 Data Sources

The following data sources were consulted during preparation of this desk-based assessment:

Historic Environment Scotland:

For National Record of the Historic Environment data;

Historic Environment Scotland:

For National Collection of Aerial Photography, National Record of the Historic Environment Search Room and designated asset data sets; and

National Map Library (National Library of Scotland, Causewayside, Edinburgh):

For old Ordnance Survey maps (1st & 2nd Edition, small and large scale) and pre-Ordnance Survey historical maps.

8.2 Scope

All known heritage assets located within a 1km radius of the edge of the Site have been identified by this assessment (Figure 8.1). The aim of this is to help predict whether any similar hitherto unknown archaeological remains are likely to be impacted by the Proposed Development. Designated assets within 500m of the site boundary have been identified (Figure 8.2) with an aim of assessing the potential for impacts upon their settings.

All recorded and mapped assets are shown in Figure 5.

8.3 Prehistoric and Roman (8000 BC AD 410)

There are three recorded assets within the Site dating to the prehistoric period. These features are recorded within the northern half of the Site. Sites 87 and 88 mark the location of potential prehistoric enclosures identified on aerial photographs from 1975 and 1991. These two sites potentially mark the location of prehistoric settlements.

Site 89, situated 45m east of the probable prehistoric enclosure at Site 88 marks the location of a very dispersed scatter of prehistoric flint and chert artefacts including a rare Late Neolithic chisel arrowhead.

The nature and location of these prehistoric remains in the north of the Site and in immediately adjacent fields indicates that there is a High potential for artefacts or remains, particularly of a settlement and flint/chert working nature to be present within the Site and particularly within the northern half.

8.4 Early Historic and Medieval (AD 410 - 1600)

No remains or artefacts from the Early Historic or medieval period have previously been identified on the Site or within the 500m Study Area, although this may simply represent a lack of opportunities for investigation.

8.5 Post-medieval (AD 1600 - 1900)

No remains dating to the post-medieval period are present within the Site, the estates of Hatton, Dalmahoy and Addistoun are outwith the Site boundary and there is no evidence that the estates associated directly with the houses encroached on the Site.

A tower house was present on the Hatton estate (centred at Site 86, Hatton House, Inventory Garden and Designed Landscape No. GDL00209, 1.1km to the west of the Site) in the 15th century and this was subsequently developed into the Hatton House mansion between 1664 and 1692.

Due to the lack of artefacts or remains dating to the post-medieval period within the Site, the nature of the estates of Hatton, Dalmahoy, Addistoun and the farm and buildings of Hatton Mains out with the Site there is a considered to be a Low potential for archaeological remains of this period to be present on the Site. Any remains of this date that do survive would likely be related to agricultural use of the land.

8.6 Modern (AD post 1900)

Ordnance Survey Mapping in the modern period shows no changes to the land use on the Site. Hatton House (centred at Site 86, Hatton House, Inventory Garden and Designed Landscape No. GDL00209, 1.1km to the west of the Site) was gutted by fire in 1952 and demolished in 1955. A bungalow was built on the site of Hatton House and the remnants of the terrace gardens and structures survive within the immediate vicinity of the modern bungalow.

8.7 Geophysical Survey

Due to the findings of the desk-based assessment, and in consultation with CEC, it was decided that a geophysical survey was required to further inform the findings of the desk-based assessment.

The results of the survey have been dominated by what would appear to be a combination of geological outcropping and night soiling / green waste. Following from the landowner's comments regarding night soiling during the 1900's, it is likely that this is what has caused the disruption to the visibility of the dataset and that the material in question is particularly magnetic in its makeup.

8.8 Effects

The effects on the key sensitive receptors are shown below.

Hatton Mains Non-Technical Summary

Site No	Name	Impact
Site 19	Tormain Hill	Minor Impact
Site 7	Cross Slab	No Impact
Site 86	Hatton House	Negligible Impact
Site 67	St Marys Expiscopal Rectory	Negligible Impact
Site 55	Gate Piers	Negligible Impact
Site 11	Gate Lodge	Negligible Impact
Site 56	St Marys Episcopal Church	No Impact
Site 63	Dalmahoy Bridge	No Impact
Site 78	Farm House mad Steadings	No Impact
Site 6	Dalmahoy House	Negligible Impact
Site 93	Ransfield Farm House	Negligible Impact
Site 26	Ratho Mains Farm House	Negligible Impact
Sites 29 to 33, 35 to 39, 42 to 43, 57 to 61, 70 to 72 and 75 to 77	Ratho	Negligible Impact

Table 3: Cultural Heritage Effects

Any undiscovered archaeology can be protected by intrusive survey prior to a detailed planning application being submitted. This would focus on the northern part of the site. Also, an archaeological watching brief will be done during construction.

Section 9: Biodiversity and Ecology

Data was collected through desktop study, consultation and field surveys. Field surveys were undertaken in August and November 2018 only.

The types of potential impacts that may arise from the proposed use of the site and lead to significant effects on ecological interests include:

- Habitat loss due to the construction of buildings and roads;
- Habitat modification/degradation due to changes in habitat cover, land management or hydrology;
- Displacement of sensitive species due to the presence of construction activities and the ongoing presence of residential, commercial and retail units.

9.1 Desk Study

A desk study was undertaken to determine the presence of any nature conservation sites within 2.5km.

The desk study involved the use of a number of data sources including web-based data from relevant sources. The following were consulted:

- SNH SiteLink webpages;
- Consultation of historical maps of the land and its surroundings;
- National Biodiversity Network Atlas; and
- Acquisition of data from The Wildlife Information Centre (TWIC).

9.2 Field surveys

Protected species surveys and a habitat assessment were undertaken by Nigel Rudd Ecology August 2018 (Figure 6) The tree survey was undertaken by Alan Motion Tree Consultants Ltd in October 2018. The invasive weeds survey was conducted by Kleerkut Ltd in October 2018. The pink footed goose survey was undertaken by Kinross Ecology in February 2019. These reports are presented in presented in Appendix D1, D2d3 and D4 respectively. A summary of survey methodology is given in Table 4.

Hatton Mains Non-Technical Summary

Survey	Methodology
Phase 1 habitat survey	The area within the application site was mapped to Phase 1 Habitat standard (JNCC, 2010). The survey was undertaken in August 2018. The Phase 1 Habitat survey method provides a standardised system for classifying and mapping the wider countryside (including urban areas) and ensures that surveys are carried out to a consistent level of detail and accuracy.
Badger	A search for badger <i>Meles meles</i> evidence was undertaken within all suitable habitat within the application site. Evidence of badger may include setts (and their status), bedding, scratch marks, paths, prints, guard hairs, latrines, dung and signs of foraging.
Otter	No suitable habitat for otter was found so no specific survey undertaken.
Amphibians	No suitable habitat for amphibians was found so no specific survey undertaken.
Bats (all species)	A preliminary assessment was made of the suitability of accessible buildings and habitats within the application site to support roosting or foraging bat species. Reference was made to Bat Conservation Trust guidelines when categorising the suitability structures for bats (BCT 2016).
Other protected species	Surveyors searched for evidence of the presence of other protected species, e.g. red squirrel <i>Sciurus vulgaris</i> , pine marten <i>Martes martes</i> and water vole <i>Arvicola amphibius</i> .
Trees	Tree species were identified and classed according to the classifications within “BS 5837:2012: Trees in relation to design, demolition and construction”.
Invasive Weeds	Survey conducted for presence / absence of Japanese Hogweed, Giant Hogweed and Himalayan Balsam. Presence / absence survey conducted in the species growing season.
Birds	<p>One visit of a breeding bird survey (BBS) was undertaken within the site boundary in November 2018.</p> <p>Survey Methodology for the surveys was based on a scaled down version of the Common Bird Census (CBC) approach including the use of standard British Trust for Ornithology (BTO) species and behaviour codes. All accessible areas of the site were walked and regular stops were made to scan and listen for birds.</p>

Table 4: Ecology survey effort

9.3 Field Survey Results

A number of surveys were undertaken on the site to check for evidence and use by specific species.

9.3.1 Habitat

The field survey was undertaken in by Nigel Rudd Ecology in August 2018.

The land proposed for development is entirely arable farmland and divided into five fields. There is very narrow marginal habitat along the field boundaries. There are stone walls on the east and south boundaries of the north-west field.

There are intact hedges on the west of the site and defunct hedges on the east. Dalmahoy Road is bounded on both sides by intact hedges.

The arable fields were either recently harvested for cereals or recently ploughed. Each field has some shallow headland which supported neutral grass and scattered herbaceous plants. The habitat had a simple structure, was species poor and intensively farmed.

Neutral grass forms a narrow fringe around the fields. The plant community is species poor, simple in structure and affected by biocide and fertilizer treatment. The habitat as value as low-grade linear habitat.

The dominant hedge species is hawthorn. Most of the hedges are single species but in places sycamore, beech and alder occur. The hedges had been cut before the survey was undertaken. The habitat has similar value to neutral grass as a low-grade linear habitat.

The ditch on the north-west boundary of the site is culverted to the east. There is no surface connection with downstream water courses. The ditch comprises a 1.5m trench with a very shallow and narrow water channel. The bank supports neutral grasses and tall, ruderal species.

The sites habitat diversity is low.

9.3.2 Ground Water Dependent Terrestrial Ecosystems (GWDTE)

No evidence was found of GWDTE within the site boundary.

9.3.3 Protected Terrestrial Mammals

The site was inspected for evidence of use by badger (*Meles meles*).

The field survey confirmed that there was no significant habitat potential for great crested newts (*Triturus cristatus*), otter (*Lutra lutra*) or water vole (*Arvicola terrestris*).

9.3.4 Bats

An initial assessment was made as to the suitability of any habitats to support bat (*Chiroptera*) populations.

There was no signs of bat (*Chiroptera*) use identified during the survey.

9.3.5 Trees

The tree survey was undertaken by Alan Motion Tree Consulting Ltd in October 2018.

Trees are confined to field boundaries. The eastern shelterbelt contains mature specimens of beech and ash with occasional Scots pine and oak. There are two good specimens of oak on the western boundary within a hawthorn hedgerow. To the west of Dalmahoy Road along the northern boundary there are a few specimens of ash and elm of poorer quality within the unmaintained hedgerow along the line of the watercourse. Further poor stems of ash are present along the western Dalmahoy Road verge.

Field boundaries are marked by maintained hawthorn hedgerows. Some young tree planting is present within hedgerows along the western edge of Dalmahoy Road and along the central east-west hedgerow in the west of the site.

Mature trees are present within the grounds of the Ratho Park Hotel and along the eastern edge of St Marys Hall.

9.3.6 Invasive Species

The site was surveyed by Kleerkut Ltd in October 2018. The survey was a visual presence / absence survey for

- Japanese Hogweed (*Reynoutria japonica*);
- Giant Hogweed (*Heracleum mantegazzianum*); and
- Himalayan Balsam (*Impatiens glandulifera*).

No evidence was found of these invasive species.

9.3.7 Birds

Bird species were noted during the Phase 1 survey. However, no specific bird survey was undertaken in terms of breeding bird survey or wintering bird survey.

As the site lies in proximity to the Firth of Forth Special Protection Area (SPA). Consequently, a Habitat Regulations Appraisal was required. This consisted of undertaking survey for pink footed geese (*Anser brachyrhynchus*) on three mornings in early February 2019.

No birds were observed foraging on the site.

9.4 Vulnerable Ecological Receptors (VERs)

The VERs found within or adjacent to the site are listed in Table below.

Feature	Sensitivity	Conservation Status
Broadleaved woodlands	High	Ancient woodland
Buildings / trees suitable for roosting bats	High	European Protected Species and Scottish Biodiversity List Priority Species
Pink footed geese	Medium	Qualifying interest of the Firth of Forth SPA
Trees of A & B status		Important for wildlife assemblages

Table 5: Ecological receptors

9.5 Construction Mitigation

Mitigation during construction will be managed via planning conditions. Typically, this will include provision of the following:

- Construction Environment Management Plan (CEMP);
- Ecological Management Plan (EMP);
- Pre-construction ecological survey; and
- Provision of an Ecological Clerk of Works to oversee the construction phase;

9.6 Operational Mitigation

Once the site is built, there will be a fundamental change to the nature and character of the site. The Masterplan embraces the most up-to-date best practice in ecological enhancement and design which will ensure the ecological integrity of the site is enhanced. The addition of high-quality greenspace with an emphasis on protecting vulnerable species will result in a new improvement to the site.

9.7 Residual Impacts

The EIA process has shown that there will be some negligible impact on habitats and species. However, these are **not significant** and **not adverse**.

Section 10: Soils and Geology

10.1 General

Phase 1 desk study researches have indicated that there is a low risk that the site is potentially impacted by contamination relating to historical activities both on-site and in the surrounding area. The geological and shown in Figure 7.

Foundation options for any new development will be influenced by the thickness and condition of the superficial deposits.

10.2 Chemical Contamination

In order to address the any potential risk to the various receptors, a programme of intrusive site investigations will be instigated as part of the work for a planning application. This will examine potential contamination impacts and the pathways by which receptors may be at significant risk.

Given that no significant contamination sources are anticipated, the investigations will be initially nontargeted, consisting trial pits and soil boreholes to recover samples of the soils and groundwater (were available). Also, samples of the nearby surface water body along the northern site boundary will be retrieved.

10.3 Gas Emissions

The historical researches suggest the potential for localised made ground to exist (i.e associated with the farm stading development).

There is not considered to be a risk from radon gas.

10.4 Foundations

The natural soils appear suited to sustaining medium loaded structures but may also be capable of tolerating significantly greater loadings. Based on existing site layouts, we would expect standard spread foundations (for standard two storey developments) to be appropriate. However, in the future, due to potential significant earthworks, foundation solutions may differ.

10.5 Mining and Quarrying

Based on detailed research, the site is not considered to be at any potential risk from mineral instability as a result of past shallow mine workings or quarrying activities.

Section 11: Hydrology and Flooding

11.1 Methodology of Assessment

Assessment of the water environment which comprises the qualitative and/or quantitative analysis of the impact of the Proposed Development with respect to the key aspects of the water environment was undertaken using the following methodology:

- Desk-based review of available information, including previous studies (if available in the public domain), geological maps, identification of local water receptors, surface water drainage, hydrogeological data, wetlands including GWDTEs and previous land use, where applicable;
- Consultation with Scottish Environment Protection Agency (SEPA), City of Edinburgh Council (CEC) and Scottish Water to obtain information that they hold in relation to the water environment in the area, including records of flooding, drainage plans, water supplies, and determine any Site constraints;
- Undertake a walkover survey of the Site;
- Analysis of Site hydrology, including surface water catchment mapping, hydrological regime and water body status;

- FRA of the Site; and
- Identification of relevant issues and potential impacts from the Proposed Development with regards to the water environment.

11.2 Study Area

The study area for the Flood Risk Assessment (FRA) and the development of the Sustainable Drainage Systems (SuDS) has modelled relevant rivers and watercourses of the catchment and considered runoff into and on the Site and immediate environs, as well as upstream and downstream structures which might impact flood risk.

There are two watercourses in the vicinity of the site.

On the northern periphery of the site there is a small unnamed watercourse which from west to east, passing under Dalmahoy Road via a concrete box culvert. This watercourse flows along a well-defined valley along the northern boundary of the site. At the north eastern corner of the site, the watercourse enters a length of culvert which takes it under a field in neighbouring land, before re-emerging in an open channel some 230m downstream.

To the south, separated from the site by a significant distance (and the A71 trunk road), and within a deep and wide valley, lies the Gogar Burn.

11.3 Flood Risk

The SEPA Flood Map for the site is presented in Figure 8. This shows the site is not within any area at risk from fluvial flooding. However, the unnamed burn on the northern periphery of the site does present a flood risk. This is not shown on the SEPA map as the burn catchment is too small at just over 1km².

The SEPA Online Flood Risk Management map indicates that the Site is not within an area at risk of groundwater flooding and there are no records of groundwater flooding at the Site. No areas of waterlogged ground, which may indicate groundwater rising and issuing at the surface, were identified during the Site walkover survey.

The Gogar Burn is not considered within the FRA due to its location relative to the site.

11.4 Design Mitigation

The initial assessment of potential effects informed the design layout, which was subsequently updated to mitigate these effects as far as possible. Mitigation relevant to the water environment which has been incorporated into the design includes:

Most of the Proposed Development will be setback with sufficient buffer from the 0.5% AEP FFP extent. The surface water drainage scheme for the Proposed Development has been designed in accordance with SuDS principles and will attenuate runoff from the Site with the SuDS being an integral part of the built development;

- SuDS incorporated into the Proposed Development will also address pollution of the surface water from sediment, as they will be designed to improve water quality; and
- The SuDS system is designed to enable adoption for future maintenance by Scottish Water or other suitable organisation, in perpetuity.

Section 12: Air Quality

The proposed development will increase road traffic on the A71, mainly on road links to the east, towards the A720 and the city centre where the greatest increase will be on Dalmahoy Road (an additional 3,447 vehicles per day) and on the A71 east of Dalmahoy Road (an additional 2,822 vehicles per day).

Air pollution from road traffic can affect human health through inhalation of toxic gases and particles. The main pollutants of concern in the study area are considered to be long-term exposure to NO₂ and airborne particles e.g. PM₁₀ and PM_{2.5}.

Three traffic Scenarios were used to assess local air quality impacts:

- Baseline 2015 and 2016, to enable model verification;
- Baseline traffic for 2030, including committed development; and
- Baseline and Scheme traffic 2030.

A computer-based dispersion model was used to predict road traffic emissions. The two main traffic Scenarios for 2030 (Scenarios 2 and 3) assume 2016 vehicle fleet composition and 2016 background air quality.

The results from CEC's diffusion tube monitoring in the study area have been used to compare the measured and predicted levels of NO₂. This indicates that the predicted levels are robust.

Impacts have been assessed in accordance with the non-statutory guidance published by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK). The predictions in this assessment are very pessimistic as they assume no reduction in background air pollution and no reduction in vehicle exhaust emissions between 2016 and 2030.

Baseline 2030 levels of NO₂ are predicted to comply with the EC annual mean Limit Value of 40 ug/m₃ at all sensitive receptors considered within the study area.

The predicted increase in the annual mean exposure to all pollutants (NO₂, PM₁₀ and PM_{2.5}) as a consequence of the scheme is of negligible significance at all sensitive receptors considered within the study area, with the exception of a single receptor at Wester Row where the impacts are predicted to be of slight adverse significance.

Section 13: Noise

The predicted change in noise from road traffic is of minor adverse significance or less at all sensitive receptors considered within the study area with the exception of the dwellings at Ransfield Cottages on Dalmahoy Road. The impacts at Ransfield Cottages is predicted to be of Moderate Adverse Significance.

The impacts have been assessed in accordance with WHO environmental noise criteria. Noise levels along the A71 are relatively high and substantial mitigation measures are likely to be required to protect health and residential amenity.

The proposed stand-off buffer zones and zoning of land uses within the Masterplan should ensure that noise from the agricultural buildings and the hotel are unlikely to adversely affect noise sensitive receptors. Impacts from road traffic are limited to areas adjacent to roads.

The predicted noise levels at the school comply with the WHO criterion for outdoor learning.

This assessment identifies zones where mitigation measures are required to protect health and amenity (Figure 9). These mitigation measures may include avoiding noise sensitive development in noisy areas, use of layout and design to reduce noise in private gardens and, where appropriate, use of double glazing to ensure that noise inside dwellings will comply with WHO criteria. A further noise assessment will be conducted at detailed planning stage to ensure that the impacts on future residents are minimised.

Section 14: Traffic and Transport

The traffic impact of the proposed development has been assessed.

The IEA Guidelines have been followed during the assessment process. The Study Network included the A71 east and west of the proposed development and several other roads in the surrounding area. Baseline traffic flows were obtained by deploying ATC surveys to record traffic volumes over a seven-day period. The ADF of the proposed development was then added to the baseline in relation to the anticipated traffic distribution in order to assess the traffic impact.

The predicted increase in traffic flows show a negligible impact to the Study Network with a maximum increase of 19.8% on Harvest Road north of the village of Ratho. A maximum increase of 15.5% is anticipated on the A71.

An assessment of the effect of cumulative developments was also carried out and it was found that the Study Area would have sufficient capacity to accommodate both the proposed development and the developments included in the assessment.

Section 15: Landscape and Visual Impacts

The LVIA focused on impacts on the landscape character (Figure 10) and visual receptors (Figure 11). To assist in the assessment, key viewpoints (Figure 12) were visited, photographed and then assessed.

Significant effects are limited to the site area and the southern boundary. These include:

- Significant landscape effects on the fabric of the receiving landscape;
- Significant landscape effects on the character of receiving landscape;
- Significant visual effects on Dalmahoy Road as it passes through the site area;
- Significant visual effect on the public footpath where it is within the site area, and
- Significant visual effects on the sections of the A71 where it passes immediately by the proposed development.

Notably, there are no significant effects on receptors outside the site area.

In terms of design and planning policy, it is important to note the that:

- The Cup and Ring markings SM on Tormain Hill has been carefully considered and effects on the setting are not significant;
- The landscape infrastructure as illustrated in the Landscape Masterplan ensures that the riparian environment associated with the unnamed water course at the northern boundary would be enhanced and utilised to build on creating a sense of place, as would the existing stone wall and associated mature trees by the public footpath;
- The purpose of the green belt designation would not be compromised in terms of landscape and visual matters, and

- The setting of listed buildings around the site, including Dalmahoy Gates, has been carefully considered and the setting of these buildings would be not significantly impacted by the proposed development.

Section 16: Residual Effects

The residual impacts identified in each chapter of the EAR is identified in Table 6 below.

Topic	Residual Impacts	Significance
Planning Policy	Compliance with the majority of the policies and the most recently published draft Government planning policy documents outweighs any negligible adverse impacts.	Negligible
Socio-Economic	The proposed development will have a beneficial impact upon local employment opportunities, both during the construction period and operational phase.	Minor Beneficial
Cultural Heritage	The proposed programme of archaeological investigations and reporting will offset the predicted direct impacts and any loss of archaeological resource, resulting in minor adverse residual impacts.	Minor Adverse
Biodiversity	Careful design of the drainage system and management of the construction phase will ensure no significant impact. Some habitat loss will occur but this habitat is of site value only.	Minor adverse
Soils and Geology	Given appropriate remediation of potentially contaminated soils and/or groundwater, the residual impact on ground conditions will be local, moderate, long term and beneficial, Loss of prime quality agricultural land does represent a moderate adverse impact, despite it being offset by other beneficial impacts, on the soil and geological resources in this area.	Minor Beneficial Major adverse
Water Resources	Tight control of activities through an environmental construction management plan will remove all risks.	Negligible
Air Quality	The residual impact associated with emissions from road and on-site construction vehicles and plant is expected to be negligible, with the exception of construction dust, which is predicted to lead to a minor temporary impact within close vicinity of the site boundary.	Negligible
Noise	Construction traffic will have a negligible impact and building service plant will be designed and installed to have a rating level 10dB(A) below the background noise level. For all assessed roads, the impact from traffic noise will either be negligible or have no effect.	Negligible

Topic	Residual Impacts	Significance
Transport	Construction traffic will be routed directly to the trunk road network via the new routes, thereby avoiding local residential routes, and additional mitigation measures will ensure that this traffic has a minimal impact on the surrounding road network.	Minor Adverse
Landscape & Visual	Landscape effects will be constrained to onsite scale impacts	On site major Significant Adverse Offsite Negligible

Table 6: Residual effects

Section 17: Summary and Schedule of Commitments

The schedule of commitments identified in each chapter of the EAR is identified in Table 7 below.

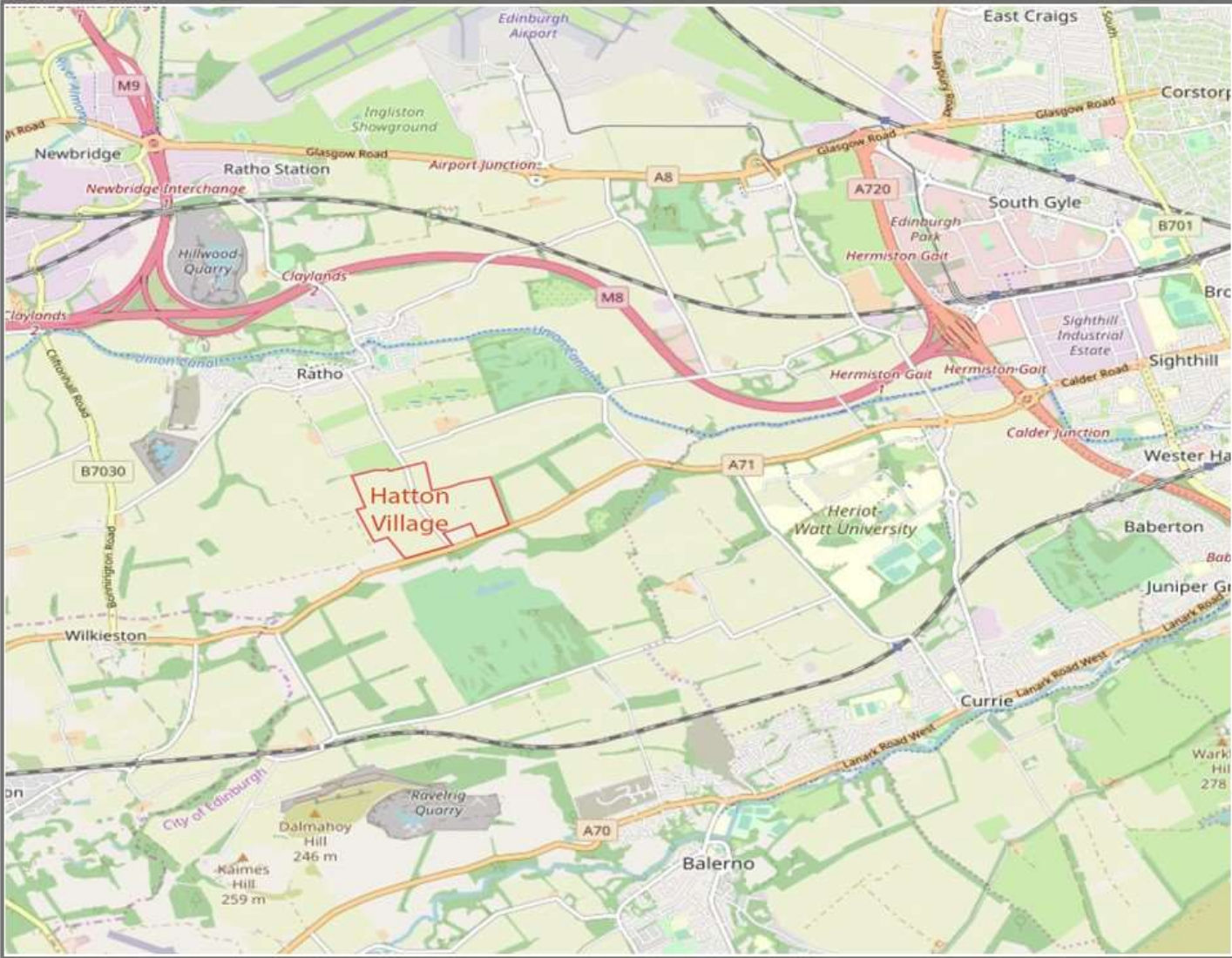
Receptor	Impact	Commitment	Implimentation
Local population	Inability of local health facilities to manage the increase in demand from a new population.	Area within Hatton Village allocated for new health service provision.	Embedded by design.
School population	Schools in the area reaching maximum capacity.	Area within Hatton Village allocated for a single stream Primary School.	Embedded by design.
Undiscovered archaeology in northern fields	Damage to unrecorded archaeological assts	Intrusive site investigation as part of the detailed planning application. Watching brief over the rest of the site during construction.	Planning condition and provision within CEMP.
Habitats	Removal of habitat and impact on wildlife	No vegetation removal in bird breeding season	Planning condition and provision within CEMP.
Bats	Increased lighting	Low level lighting on edges	Embedded by design.
Hydrology and Surface Water	Pollution from vehicle and concrete pollution	Robust environmental management	Planning condition and provision within CEMP.

Hatton Mains Non-Technical Summary

Receptor	Impact	Commitment	Implimentation
Residents	Risk from historical contamination	Intrusive site investigation as part of the detailed planning application.	Planning condition and provision within CEMP.
Residents	Risk from agricultural chemical use	Intrusive site investigation as part of the detailed planning application.	Planning condition and provision within CEMP.
Residents and ecological receptors	Dust contamination from construction activities	Site developed from west to east. Dust management measures during construction.	Planning condition and provision within CEMP.
Residents	Daytime and night time construction noise.	Ensure working times are within set times.	Planning condition and provision within CEMP.
Residents	Congestion due to increased operational traffic	Junction and traffic measures as per TA.	Section 75 agreement.

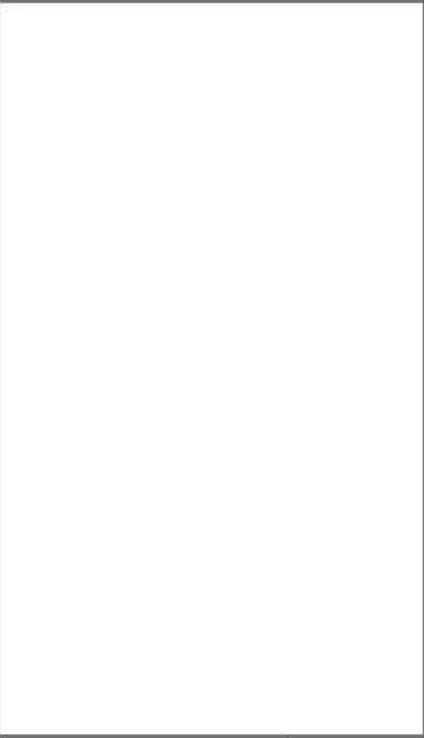
Table 7: Commitments made

Hatton Mains Non-Technical Summary



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Title: Site Location

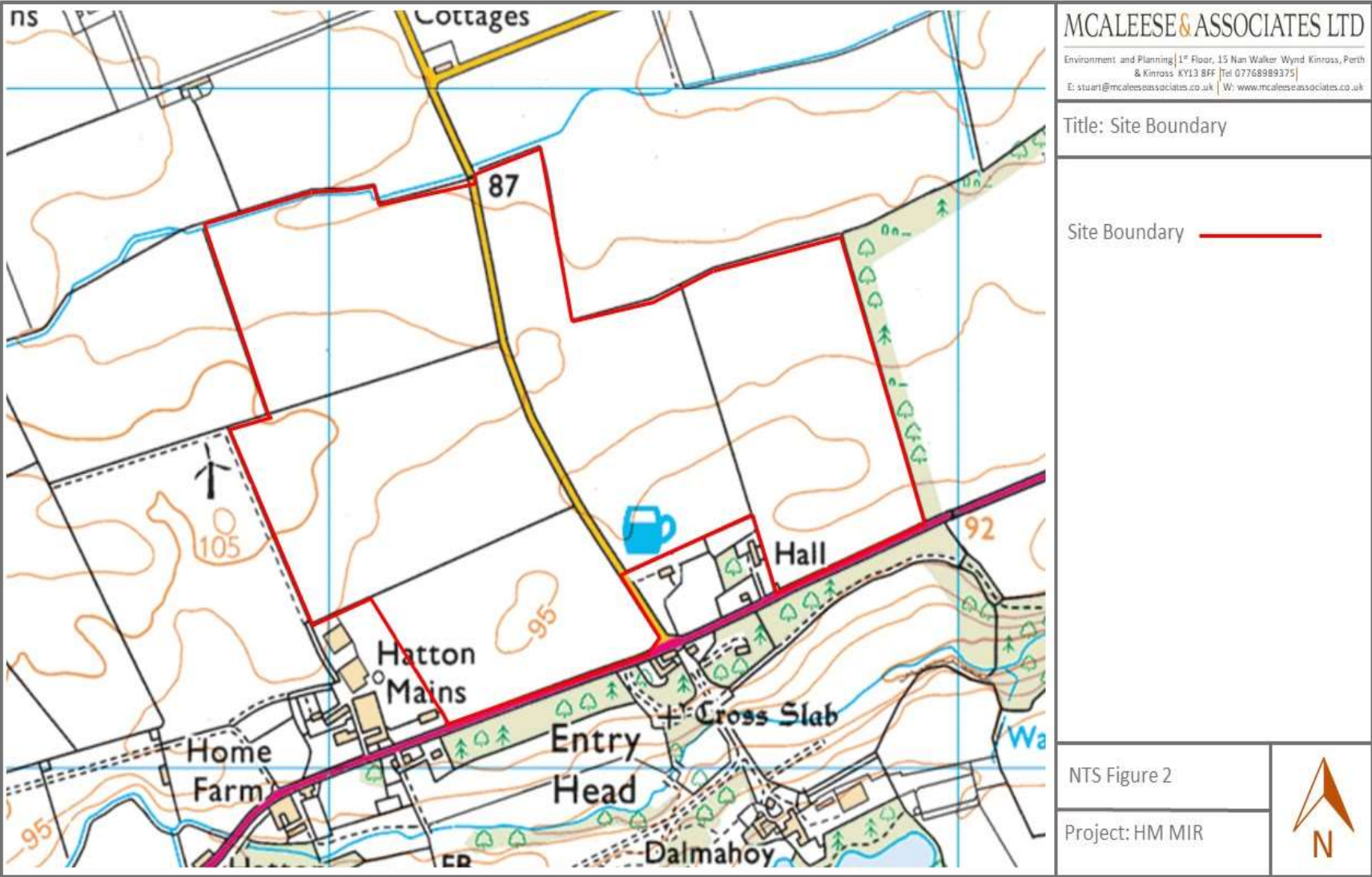


NTS Figure: 1

Project: HM MIR



Hatton Mains Non-Technical Summary



Hatton Mains Non-Technical Summary



Hatton Mains Non-Technical Summary



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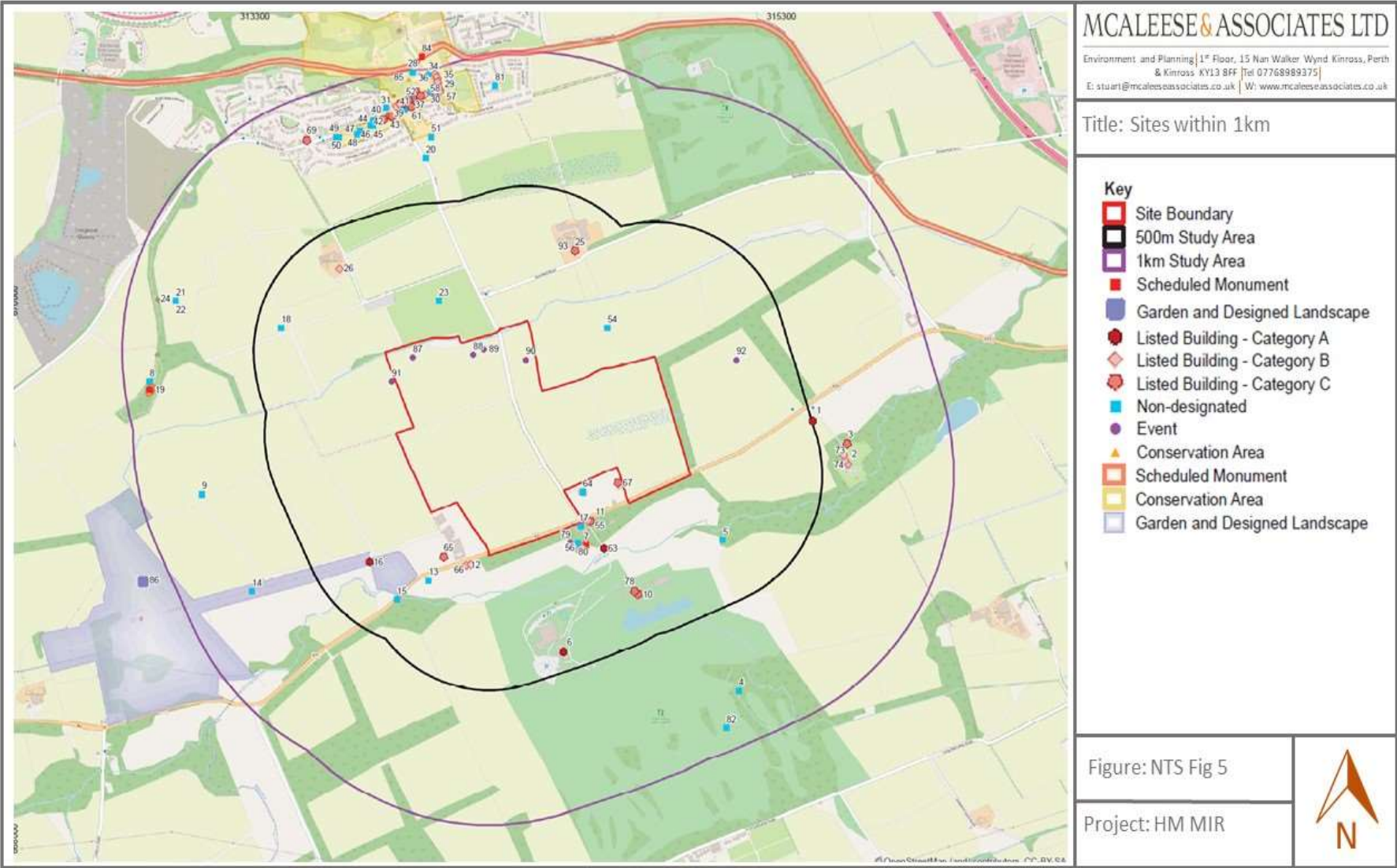
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NTS Figure 4

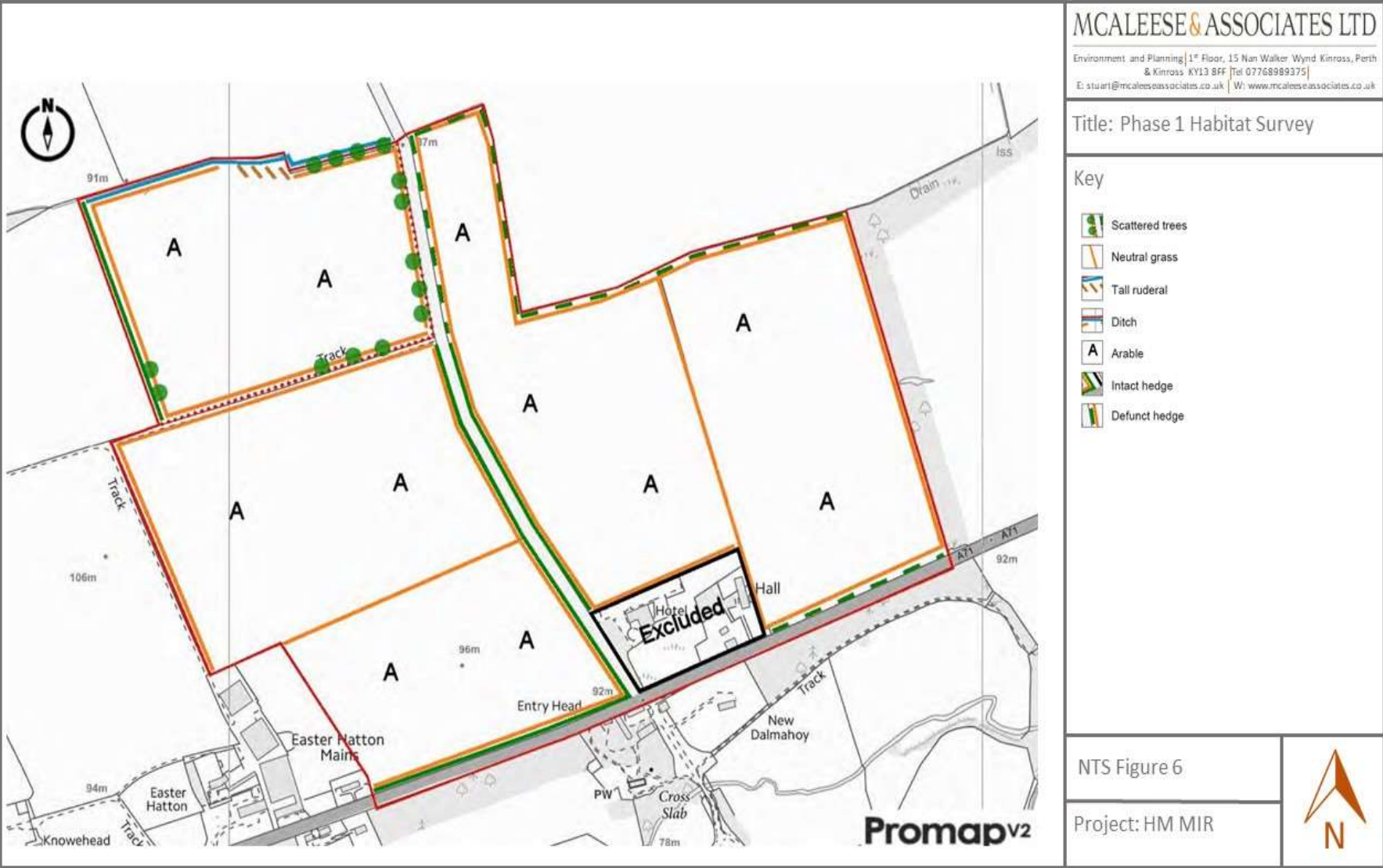
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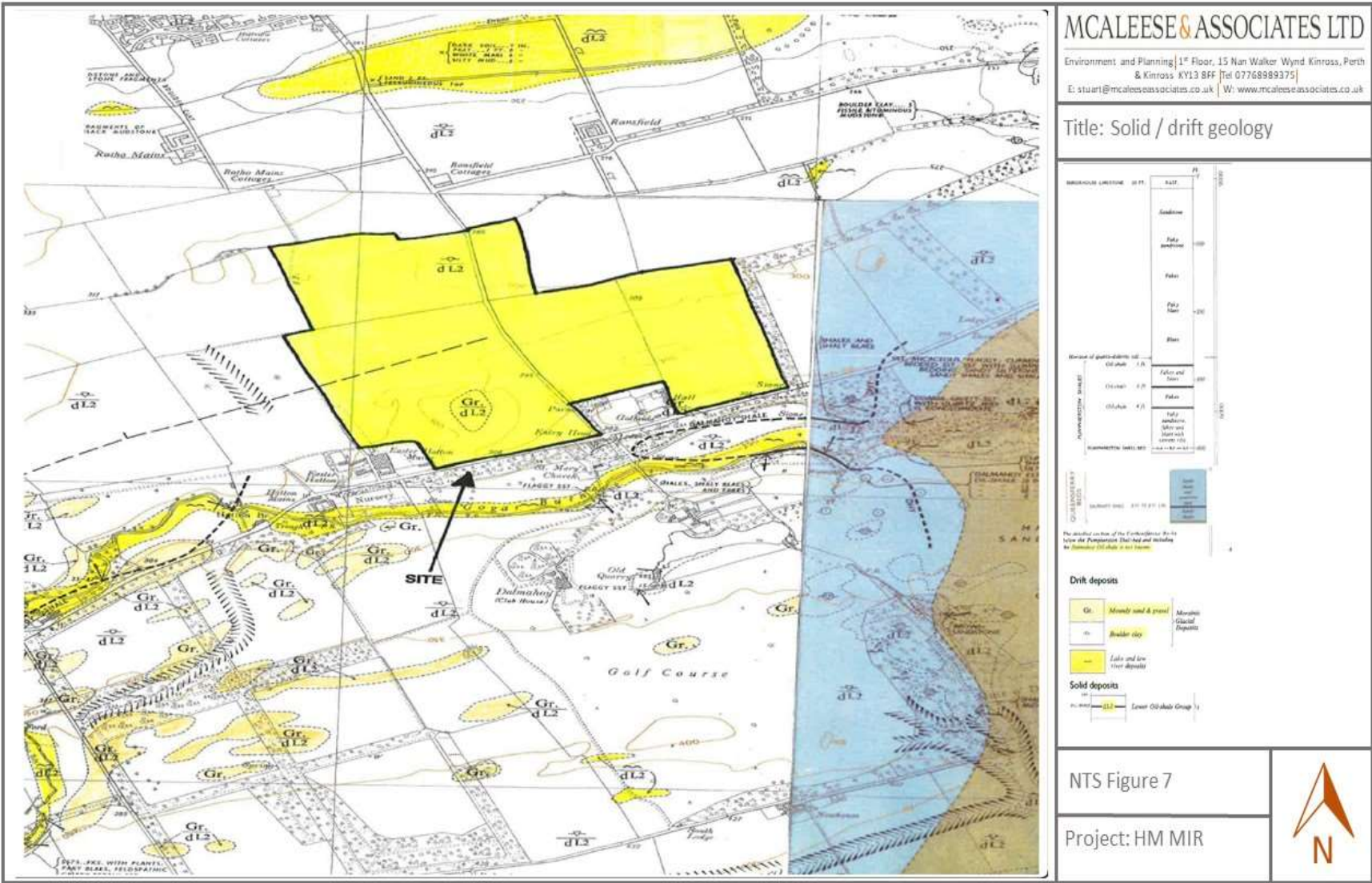
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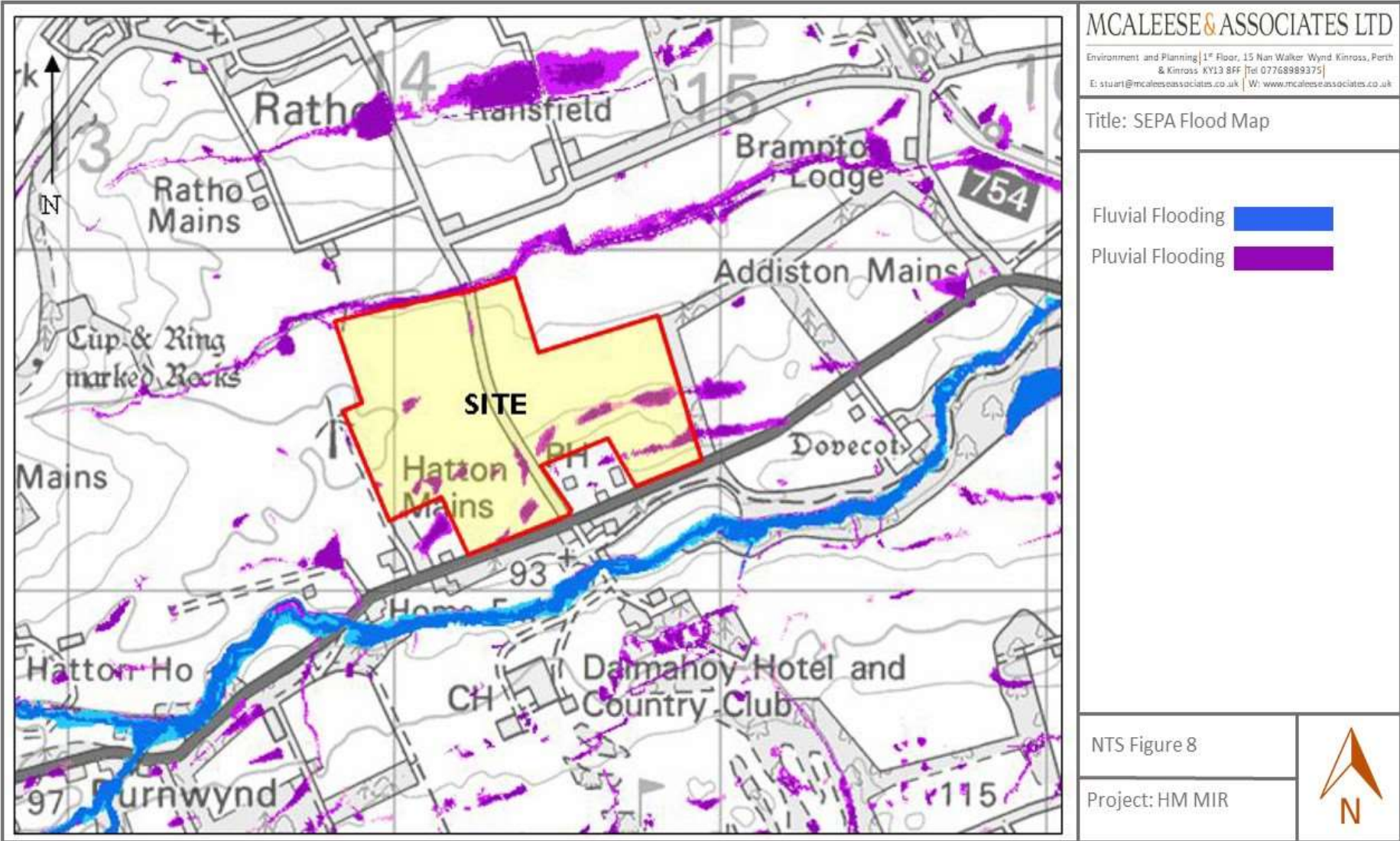
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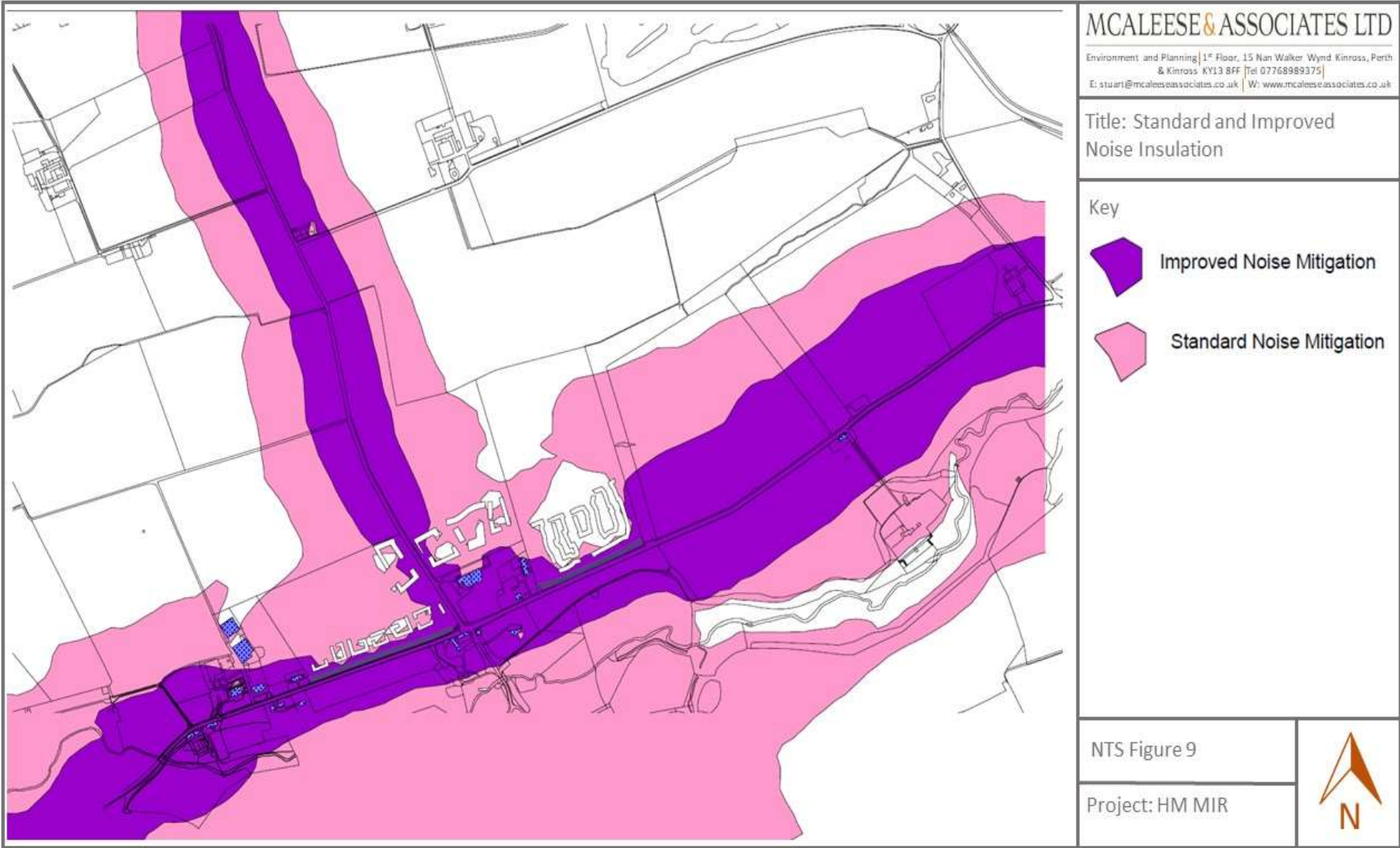
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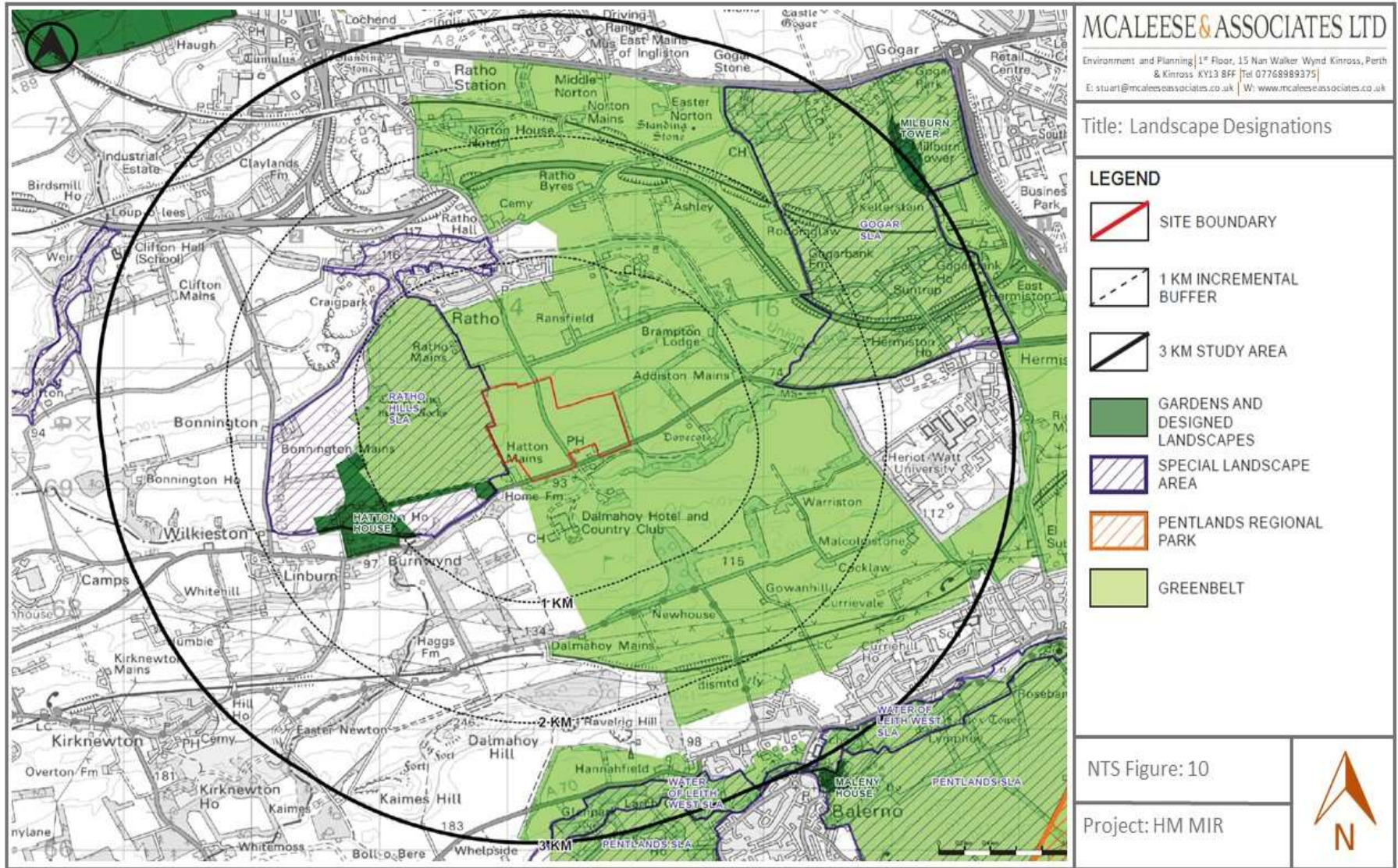
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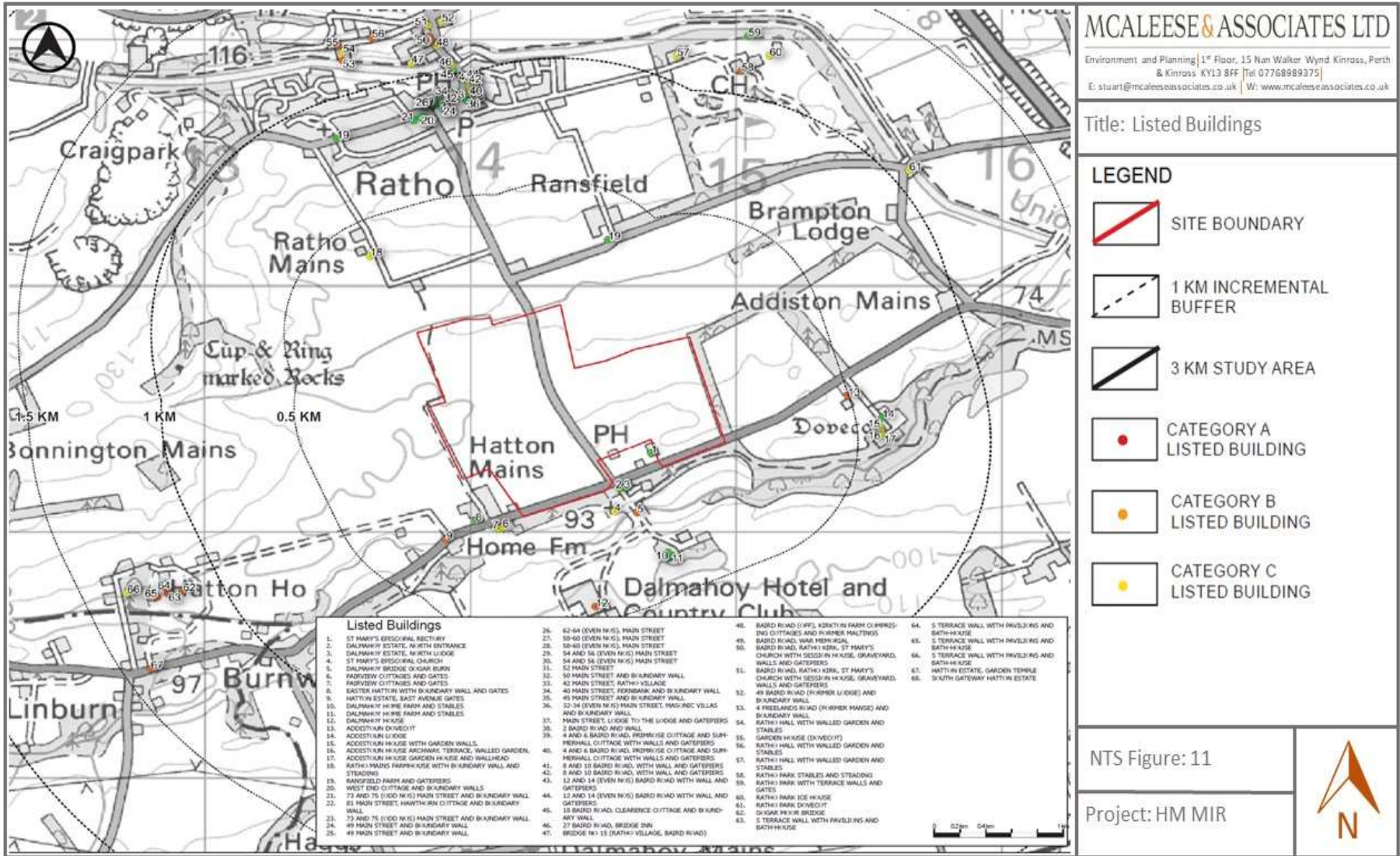
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