



West Riverside and Woodbank House

Environmental Statement: Addendum Report March 2019

On behalf of **Flamingo Land Ltd and Scottish Enterprise**



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1 Introduction

1.1 Overview

- 1.1.1 This Environmental Statement (ES) Addendum has been prepared by Peter Brett Associates, now part of Stantec (PBA) in relation to planning application 18/0133/PPP previously submitted to Loch Lomond and the Trossachs National Park Authority ('the planning authority') for a proposed tourism and leisure-led mixed-use development ('the proposed development') on land at West Riverside and Woodbank House, Balloch ('the site'). Planning application 18/0133/PPP seeks planning permission in principle (PPiP) only for the proposed development and was validated by the planning authority in May 2018.
- 1.1.2 This ES Addendum forms part of a package of design and environmental information which is submitted to the planning authority at this stage to address comments made by the planning authority and statutory consultees to date during the consideration the planning application. The ES Addendum builds upon the original West Riverside ES ('the original ES') which accompanied the planning application as submitted to the planning authority in April 2018.
- 1.1.3 The planning application was submitted by PBA on behalf of Flamingo Land Ltd and Scottish Enterprise as joint applicants. The ES addendum has been co-ordinated by PBA on their behalf, with input from the technical specialists as detailed in **Section** [□](#) below.

1.2 Purpose of this ES Addendum

- 1.2.1 The purpose of this ES Addendum is to provide a proportionate assessment of any new or different likely significant environmental effects resulting due to presently proposed changes to the proposed development (i.e. likely significant effects from the proposed amended scheme), compared with the environmental effects already assessed within the original ES (i.e. likely significant effects from the original scheme).
- 1.2.2 This ES Addendum forms part of an EIA carried out in accordance with the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 ('the EIA Regulations') which are applicable to the determination of the planning application for the proposed development. These EIA Regulations are applicable under the transitional arrangements within Regulation 60 of the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

1.3 Overview of Proposed Development and Proposed Changes

Description of development

- 1.3.1 **Chapter 3 – The Proposed Development** of the original ES provided a description of the original scheme, based around a suite of key development parameters. These parameters including land use zones and maximum building dimensions were shown on **Figure 3.1 – Parameters Plan** provided in **Volume 2 – Technical Appendices** within the original ES.
- 1.3.2 The description of development has altered since the planning application was submitted, as a number of changes have been necessary to address comments received from the planning authority and consultees and to optimise the use of the site. The net changes to development are as follows:
 - i. + 20 lodges / bothies in the grounds of Woodbank House;
 - ii. Refurbishment of Woodbank House and attendant structures in place of previously proposed façade retention. Results in +1 private dwelling unit and +6 self-catering apartments.
 - iii. +1 boathouse and equipment store as a water sports base.

1.3.3 Taking account of all proposed changes detailed below, the new description for the proposed amended scheme is as follows:

- Refurbished tourist information building;
- 60-bedroom Apart-hotel;
- 32-bedspace budget accommodation;
- Up to 125 self-catering lodges comprised as follows:
 - 15 woodland bothies (in grounds of Woodbank House);
 - 16 woodland lodges (in grounds of Woodbank House);
 - 19 Larger Lodges (in grounds of Woodbank House);
 - 32 Lodges in Drumkinnon Wood;
 - 43 Lodges at West Riverside;
- Up to 6 private houses;
- Up to 15 private apartments within Woodbank House;
- Up to 6 self-catering apartments within the refurbished outbuildings of Woodbank house;
- 900m² brewery;
- A boathouse of c.95m² for storage of equipment and operation of water-based activities;
- Leisure / pool /water park area up to approximately 2,500m²;
- Restaurants/Cafe & Retail areas up to 1,100m² in total;
- Visitor reception areas & hub building up to approximately 2,000m²;
- External activity areas including tree top walk, events/ performance areas, children's play areas, monorail, forest adventure rides, picnic / play areas;
- Staff and service area of up to approximately 900m²;
- Associated parking (up to 291 additional spaces), landscaping and infrastructure development works; and
- Access to be taken from the surrounding road network including Ben Lomond Way and Pier Road.

Proposed Changes

1.3.4 **Table 1.1** below provides a summary of the changes now proposed compared with the original scheme for which PPIp was applied for in May 2018, with further detail set out in **Section 3.2**. These changes comprise a mix of altered development areas and altered layouts or indicative arrangements to address specific matters, e.g. flood risk. The changes relate mainly to four zones of the site.

- Woodbank House and grounds;
- The Pierhead;
- West Riverside; and,
- The Boathouse (Drumkinnon Bay Promontory).

Table 1.1 - Summary of Proposed Changes per Land Use Zone

Zone (as per PPIP Parameters Plan)	Applied for (May 2018)	Now proposed (March 2019)	Change
Area 2 (Station Square)	Refurbished tourist information building;	Refurbished tourist information building;	No Change
Area 5 (Pierhead)	60-bedroom Apart-hotel;	60-bedroom Apart-hotel;	No Change
Area 1 (Station Square)	32-bedspace budget accommodation;	32-bedspace budget accommodation;	No Change
Lodges	Up to 105 self-catering lodges;	Up to 125 Self-catering lodges	Total = + 20 lodges / bothies
Area 3a (West Riverside)	43 lodges	43 lodges	No Change
Area 3b (Drumkinnon Wood)	32 Lodges	32 Lodges	No Change
Area 3c (Boathouse)	1 Lodge	Watersports base and equipment store	- 1 lodge + 1 watersports base
Area 3d (Woodbank grounds)	28 Lodges	50 Lodges`	+3 woodland lodges +19 larger lodges within existing field
Other Self-catering			
Area 13 – Woodbank Grounds	Redevelopment of Woodbank House outbuildings	6 self-catering apartments	+6 self catering
Private Houses	20 Units	21 Units	+1 unit
Area 12 - Woodbank Grounds	20 houses	6 houses	- 14 houses
Area 13 – Woodbank House	Façade retention of Woodbank House	15 Apartments in refurbished / reconstructed Woodbank House	+ 15 apartments
Area 1 (Station Square)	900m ² brewery;	900m ² brewery;	No Change

Zone (as per PPIP Parameters Plan)	Applied for (May 2018)	Now proposed (March 2019)	Change
Area (Pierhead)	Leisure / pool / water park area up to approximately 2,500m ² ;	Leisure / pool / water park area up to approximately 2,500m ² ;	No Change
Areas 1 and 5 (Pierhead and Station Square)	Restaurants / Cafe & Retail areas up to 1,100m ² in total;	Restaurants / Cafe & Retail areas up to 1,100m ² in total;	No Change
Area 5 (Pierhead)	Visitor reception areas & hub building up to approximately 2,000m ² ;	Visitor reception areas & hub building up to approximately 2,000m ²	No Change
All Zones	External activity areas including tree top walk, events/ performance areas, children's play areas, monorail, forest adventure rides, picnic / play areas;	External activity areas including tree top walk, events/ performance areas, children's play areas, monorail, forest adventure rides, picnic / play areas;	No Change
Area 10 (off Ben Lomond Way)	Staff and service area of up to approximately 900m ² ;	Staff and service area of up to approximately 900m ² ;	No Change
All Zones	Associated parking (up to 320 additional spaces), landscaping and infrastructure development works; and	Will need to take account of Revisions at Pier Head; Additional parking for apartments within Woodbank House; Additional parking for additional lodges at Woodbank House	291 Spaces
All Zones	Access	Access	No Change

1.4 Terms & Definitions

- **The joint applicants:** Flamingo Land Ltd and Scottish Enterprise;
- **The planning authority:** The Loch Lomond & The Trossachs National Park Authority;
- **The planning application:** planning application 18/0133/PPP seeking planning permission in principle (PPIP) for the proposed development;
- **The proposed development:** proposed tourism and leisure-led mixed use development being applied for under the planning application;
- **The original scheme:** the proposed development as applied for in May 2018;
- **The proposed amended scheme:** The scheme now proposed, taking account of all proposed changes as outlined in **Section 1.3** above;
- **The site:** the red line boundary area within which the proposed development would be constructed and operated. This remains the same as applied for in the planning application, i.e. no change in site area between the original and amended schemes;

- **The original ES** – the Environmental Statement originally submitted to accompany the planning application (May 2018) for the original scheme. This comprised:
 - **Volume 1** – Main Text
 - **Volume 2** – Technical Appendices
 - **Non-Technical Summary**
- **The March 2019 ES Addendum** – this document.
- **The EIA Regulations** – the Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011.

1.5 Structure & Content

1.5.1 For ease of reference, this ES Addendum mirrors the structure of the original ES submitted to accompany the planning application. This volume is therefore structured as follows:

- Chapter 2 Site and Surrounding Area (no changes)
- Chapter 3 The Proposed Development
- Chapter 4 Assessment Methods (no changes)
- Chapter 5 Legislative and Planning Policy Context (no changes)
- Chapter 6 Ecology and Woodland
- Chapter 7 Traffic and Transport
- Chapter 8 Noise and Vibration (no changes)
- Chapter 9 Air Quality (no changes)
- Chapter 10 Water, Hydrology and Flood Risk
- Chapter 11 Ground Conditions and Geology (no changes)
- Chapter 12 Landscape and Visual Impact Assessment
- Chapter 13 Archaeology and Heritage
- Chapter 14 Socio-economics, Tourism, Recreation and Public Access (no changes)
- Chapter 15 Impact Interactions
- Chapter 16 Schedule of Proposed Further Mitigation and Enhancement Measures

1.5.2 These chapters are supported by a suite of technical appendices, as detailed within individual chapters where relevant.

1.6 The Project Team

1.6.1 The same organisations have been involved in the preparation of this ES Addendum and the original ES. These are:

- **Peter Brett Associates (PBA)** – EIA Co-ordination, Planning, Traffic & Transport, Ground Conditions & Geology, Socio Economics, Tourism, Recreation & Public Access;
- **EnviroCentre** – Ecology, Trees & Woodland, Water Hydrology & Flood Risk, Air Quality, Noise & Vibration;
- **Gillespies** – Landscape and Visual Impact; and
- **Headland Archaeology** – Archaeology.

1.6.2 The wider project team involved in the preparation of the PPiP application for the proposed development also includes:

- **Anderson Bell + Christie Architects** – Project Architect;

- **PBA** – Planning Agent, Civil Engineering, Site Investigation (SI) Co-ordination, Pre-Application Consultation;
 - **Brown + Wallace** – Cost Consultant; and
 - **Tourism Resources Limited** – Commercial Strategist.
- 1.6.3 As the EIA project team remains the same as for the original ES, the statement provided in **Appendix 1.1** of the original ES detailing the relevant qualifications and expertise of team members remains valid and does not need to be resubmitted.

2 Site and Surrounding Area

- 2.1.1 The site and surrounding area are unchanged from the time of the submission of the planning application in May 2018.

3 The Proposed Development

Overview

- 3.1.1 The description of development has altered since the ES and planning application for the proposed development was submitted, as a number of changes have been necessary to address comments received from the planning authority and consultees and to optimise the use of the site. However, the proposed development remains a tourism and leisure led-proposal within the same site.
- 3.1.2 Taking account of all proposed changes detailed below, the new description for the proposed amended scheme is as follows:
- Refurbished tourist information building;
 - 60-bedroom Apart-hotel;
 - 32-bedspace budget accommodation;
 - Up to 125 self-catering lodges comprised as follows:
 - 15 woodland bothies (in grounds of Woodbank House);
 - 16 woodland lodges (in grounds of Woodbank House);
 - 19 Larger Lodges (in grounds of Woodbank House);
 - 32 Lodges in Drumkinnon Wood;
 - 43 Lodges at West Riverside;
 - Up to 6 private houses;
 - Up to 15 apartments within Woodbank House;
 - Up to 6 apartments within the refurbished outbuildings of Woodbank house;
 - 900m² brewery;
 - A boathouse of c.95m² for storage of equipment and operation of water-based activities;
 - Leisure / pool /water park area up to approximately 2,500m²;
 - Restaurants/Cafe & Retail areas up to 1,100m² in total;
 - Visitor reception areas & hub building up to approximately 2,000m²;
 - External activity areas including tree top walk, events/ performance areas, children's play areas, monorail, forest adventure rides, picnic / play areas;
 - Staff and service area of up to approximately 900m²;
 - Associated parking (up to 291 additional spaces), landscaping and infrastructure development works; and
 - Access to be taken from the surrounding road network including Ben Lomond Way and Pier Road.
- 3.1.3 **Section 3.2** details the changes now proposed compared with the original scheme for which PPiP was applied for in May 2018. These changes comprise a mix of altered development areas and altered layouts or indicative arrangements to address specific matters, e.g. flood risk, and relate mainly to four main zones of the site.

3.2 Rationale for and Description of Proposed Changes

- 3.2.1 The proposed changes have been driven by different influencing factors across the development site e.g. close to the water, flood risk concerns have led to alterations, whilst at

Woodbank house a change in strategy to secure the reconstruction / redevelopment of Woodbank house in preference to façade retention only has driven the changes in that location.

3.2.2 The changes relate mainly to four zones of the site:

- The Pierhead;
- West Riverside;
- Woodbank House and grounds; and,
- The Boathouse (Drumkinnon Bay Promontory).

3.2.3 The rationale for and detail of the changes proposed in each of these zones is described in turn below.

Pierhead

3.2.4 The alterations at the pierhead are designed to address to two primary issues:

- Development within the River Leven Floodplain; and,
- Relationship of development to the Grade-A listed Winch House.

3.2.5 The indicative footprint of development in the pierhead area has been amended to ensure that development does not occur in the River Leven Floodplain. The amended footprint has been discussed and agreed with SEPA prior to submission (See chapter 10)

3.2.6 The relationship with the Winch House has been improved by amending the massing of the pierhead buildings and increasing the separation between the proposed buildings and the existing Winch House. (See Chapter 13)

West Riverside

3.2.7 The changes in the west riverside area are a re-organisation of the indicative layout following comments from SEPA about the unacceptability of a proposed boardwalk within the River Leven Flood Plain. The proposals now show:

- An alternative alignment for the proposed monorail now alongside Pier Road;
- A riverside walkway providing access to the existing jetties (no longer a boardwalk structure); and,
- A revised configuration for the lodges at West Riverside to fit between the monorail and the riverside walk.

3.2.8 The proposals now avoid the erection of any structures within the River Leven floodplain.

Woodbank House and Grounds

3.2.9 The majority of the proposed changes to the original scheme are contained within Woodbank House and grounds. The original scheme only sought to retain the façades of Woodbank House whilst constructing lodges and houses in the grounds. This development strategy for Woodbank House has changed following dialogue with the planning authority.

3.2.10 The proposed amended scheme now aims to secure the redevelopment of the Grade A Listed Woodbank House and its attendant structures. The previously proposed 20 private houses in the grounds have also been reduced to a total of 6. These changes are intended to more closely align with the provisions of the applicable Development Plan, in particular Policy Balloch VE4: Woodbank House which allocates the site for visitor experience related uses, and to provide an enabling development closely aligned with the costs of restoring a Grade A listed building.

3.2.11 Taking account of all proposed changes, the proposed amended scheme now seeks PPIp for the following development within Woodbank House and grounds:

- Reconstruction / refurbishment of Woodbank House to accommodate 15 private apartments; (subject to future detailed planning application and Listed Building consent)
- Construction of 6 private houses within the grounds (previously proposed were 20 houses)
- Reconstruction / refurbishment of the Woodbank ancillary buildings (former stables and outhouse) to accommodate 6 self-catering apartments, subject to future detailed planning application and Listed Building Consent;
- Provision of 50 bothies and lodges within the grounds comprised of
 - 16 woodland lodges within the trees to the rear of Woodbank House;
 - 15 bothies within the trees to the rear of Woodbank House
 - 19 larger lodges in the field to the side of Woodbank house (in place of 14 of the previously proposed private houses);

Boat house (Drumkinnon Bay promontory)

- 3.2.12 The site is the site of a former boathouse for Woodbank House, and the remnants of the structure together with the associated slipway / jetty can still be seen. The original scheme proposed the construction of a single lodge in this location, intended as luxury self-catering accommodation. Following discussions with the planning authority, the joint applicants have decided taken to amend this element of the development to become a boathouse and equipment store that will act as a base for Watersports activities by those staying in self-catering accommodation at Woodbank House. The amended use in this location is more closely aligned to the provisions of the applicable Development Plan, in particular Open Space Policy 2, and it also ties in with the historical presence of a boathouse as part of the Woodbank House Estate.

4 Assessment Methods

4.1 Introduction

- 4.1.1 This section explains the scope of this ES Addendum, taking account of the proposed changes detailed in **Chapter 3** and any other pertinent changes.

4.2 Assessment Scope

Potential for Revised, New or Different Likely Significant Effects

- 4.2.1 This ES Addendum presents an assessment of likely new or different significant effects from the proposed amended scheme compared with the assessment of likely significant effects from the original scheme which was provided in the original ES. Where there is no likelihood that the level and thus significance in EIA terms of any previously assessed residual effects from the original scheme would now change, there is no need for that element of the impact assessment as presented in the ES to be rerun. This approach avoids duplication and ensures that this ES Addendum remains proportionate to the nature of the changes presently proposed to the original scheme.
- 4.2.2 Revised assessments are however provided within this ES Addendum where there is the potential for new or different likely significant effects not previously predicted for the original scheme to occur from the proposed amended scheme, i.e. taking account of the presently proposed changes. Changes in the type, level and significance of likely environmental effects could occur due to the following factors, either individually or acting in combination:
- Proposed changes in the physical, construction or operational characteristics of the original scheme, specifically including the changes presently sought as detailed in **Chapter 3**;
 - Pertinent changes in legislative and planning policy requirements;
 - Pertinent changes in baseline conditions, including the characteristics of existing development within the vicinity of the site; and,
 - Any new cumulative developments identified within the vicinity of the site which may give rise to likely new or different cumulative effects in combination with the proposed amended scheme compared with likely cumulative effects previously predicted from the original scheme in combination with relevant cumulative developments in the original ES.

Consideration of Relevant Environmental Topics

- 4.2.3 To complete the scoping of this ES Addendum it was necessary to determine the range of environmental topics which could be affected by pertinent changes (design, policy, cumulative developments, etc.) detailed above. **Table 4.1** confirms whether or not potential effects relating to each environment topic chapter of the ES for the original scheme require to be examined in this ES Addendum. The rationale for the exclusion of certain environmental topics which had been examined in the May 2018 ES from further consideration in this ES Addendum is thus provided in **Table 4.1** below. Of note, the environmental topics to be considered within this ES Addendum were agreed with the planning authority in February 2019.

Table 4.1 - Scoping of Environmental Topics for Inclusion in ES Addendum

May 2018 ES Technical Assessment Chapter	Scoped in or Out of ES Addendum	Rationale
Chapter 6 Ecology and Woodland	In	An addendum to the Ecology and Woodland chapter of the ES has been produced to assess new or different likely significant ecological effects from the proposed amended scheme and to provide enhanced information on this topic in response to questions raised by the planning authority and statutory consultees. In particular, further tree survey information and further assessment of likely impacts are presented in this chapter of the ES Addendum and in accompanying technical appendices prepared by EnviroCentre.
Chapter 7 Traffic and Transport	Out	<p>The assessment of likely effects on Traffic, Transport & Access arising from the original scheme concluded that the potential effects on pedestrian and cyclists arising from the development would vary by location:</p> <ul style="list-style-type: none"> • Minor adverse on Balloch Road (south); • Moderate beneficial on Old Luss Road (north); • Moderate beneficial on Pier Road; and • Minor Adverse on Ben Lomond Way. <p>The potential effects arising from the development on road users was identified as minor negligible. The assessment provided in chapter 7 of the May 2018 ES went on to conclude that in relation to traffic, transport and access effects:</p> <ul style="list-style-type: none"> ■ <i>there would be negligible to short-term slight adverse residual effects on pedestrians and drivers in terms of severance, amenity and delay due to construction activity; and</i> ■ <i>the operational effects of the development would be moderate beneficial.</i> <p>The net changes to the development are not considered to introduce any potential for new or different likely significant effects not previously predicted for the original scheme to occur from the proposed amended scheme and may introduce some slight betterment.</p>
Chapter 8 Noise and Vibration	Out	The assessment of likely effects on the acoustic environment arising from the original scheme concluded that all potential effects would be neutral or slight with the exception of Receptor 19, where a slight to moderate effect would potentially occur. With mitigation in place, the assessment

May 2018 ES Technical Assessment Chapter	Scoped in or Out of ES Addendum	Rationale
		<p>went on to conclude that the residual effect on Receptor 19 would be sight and therefore not significant in EIA terms.</p> <p>The proposed amendments to the development do not increase the proximity of the development to existing noise sensitive receptors or introduce additional noise sensitive receptors closer to identified sources of noise (road noise). There not considered to be any potential for new or different likely significant effects not previously predicted for the original scheme to occur from the proposed amended scheme</p>
Chapter 9 Air Quality	Out	<p>The Assessment of likely effects on Air Quality arising from the original scheme concluded that all potential effects on air quality arising from the devilment would be negligible. The assessment provided in chapter 9 of the May 2018 ES went on to conclude that in relation to residual environmental effects:</p> <ul style="list-style-type: none"> ▪ <i>Significant construction phase dust effects are not likely owing to the proposed development, approval and implementation of a dust management plan within a CEMP for the proposed development; and</i> ▪ <i>No significant changes in NO₂, PM₁₀ or PM_{2.5} levels at all assessed sensitive receptors are likely, with the impact magnitude for all sensitive receptors categorised as Negligible.</i> <p>The net changes to the development are not considered to introduce any potential for new or different likely significant effects not previously predicted for the original scheme to occur from the proposed amended scheme</p>
Chapter 10 Water, Hydrology and Flood Risk	In	<p>An addendum to the Water Hydrology and Flood Risk chapter of the ES has been produced to assess new or different likely significant effects from the proposed amended scheme and to present further information on the subject following a representation from SEPA and subsequent meeting with SEPA and the planning authority. Of note, specific changes to the original scheme are now proposed to address flood risk concerns.</p>
Chapter 11 Ground Conditions and Geology	Out	<p>The proposed amendments to the scheme have no further implications for ground conditions beyond what has already been considered in the ES of May 2018</p>

May 2018 ES Technical Assessment Chapter	Scoped in or Out of ES Addendum	Rationale
Chapter 12 Landscape and Visual	In	<p>A fully revised LVIA has been prepared by Gillespies Ltd and included in this ES Addendum. This supersedes Chapter 12 of the original ES.</p> <p>The decision to prepare a new LVIA has been taken due to the extent of changes across the proposed development including changes to the indicative layout. It was felt that it would be too complex to present the information as an addendum in which the reader would need to cross-refer between the original ES and the ES addendum. The chapter is accompanied by revised technical appendices.</p>
Chapter 13 Archaeology and Heritage	In	<p>To respond to the proposed changes including specific changes within Woodbank House and grounds, and following receipt of comments from the Heritage Officer at the planning authority, the original heritage assessment has been reviewed and enhanced information and setting assessments for Woodbank House and the Winch House have been prepared. These are set out in Chapter 13 below as an addendum to Chapter 13 of the original ES.</p>
Chapter 14 Socio-economics, Tourism, Recreation and Public Access (no changes)	Out	<p>The assessment of likely socio-economic effects arising from the original scheme concluded that the scheme would generate important benefits including 328 temporary construction jobs and 159 operational jobs on a permanent basis. The assessment also concluded that there would be no significant socio-economic effects within the context of the EIA Regulations. The changes now proposed to the original scheme are not considered to be of a magnitude that would result in any new or different likely significant socio-economic effects.</p> <p>The assessment of likely effects on tourism, recreation and access arising from the original scheme concluded that there three receptors would experience localised adverse effects. The proximity of the John Muir way, the Three Lochs Way and the Loch Lomond Shores development would experience changes in views with limited opportunity to mitigate these changes. The visual effects on these receptors have been reviewed as part of the updated LVIA (Chapter 12). There are no changes to the visual effects reported and for all three receptors these remain significant (for localised sections of the paths adjacent to the development) as set out in Table 12.10. Furthermore, the revised LVIA does not introduce any new significant effects on tourism, recreation or access receptors. With unchanged significance of visual effect there is not considered to be any potential for new or different significant effects on the tourism, recreation or access environment.</p>

May 2018 ES Technical Assessment Chapter	Scoped in or Out of ES Addendum	Rationale
Chapter 15 Impact Interactions	Out	No changes
Chapter 16 Schedule of Proposed Further Mitigation and Enhancement Measures	In	A fully revised and updated schedule of mitigation is provided to confirm all mitigation and enhancement measures now proposed in respect of the proposed amended scheme.

4.3 Summary of ES Addendum Scope

- 4.3.1 Taking account of the scoping information provided above, this ES Addendum provides an assessment of new or different likely significant effects from the proposed amended scheme in respect of:
- Ecology and Woodlands
 - Water Hydrology and Flood Risk
 - Landscape and Visual
 - Archaeology & Heritage

4.4 Impact Assessment Methodology

- 4.4.1 As with the ES for the original scheme, this ES Addendum reports the results of impact assessments conducted in a systematic and robust manner to identify and address all likely significant effects from the proposed amended scheme. In doing so, the assessment focuses on assessing new or different likely significant effects, as all other effects as reported within the ES for the consented scheme would remain unchanged.
- 4.4.2 The overall methodology adopted was to consider whether any pertinent changes (design, policy, cumulative developments, etc.) could give rise to new or different likely significant effects from those previously predicted. In **chapters 6 – 14**, each environmental topic scoped into the ES Addendum provides a review of pertinent changes which are of specific relevance to their topic in order to determine the types of new or different likely significant effects which could result from the proposed amended scheme. Topic specific impact assessment methodologies were then adopted to identify the predicted new likely levels and indeed types of effect from the proposed amended scheme. It is the predicted level of individual effects which determine their significance in the context of the EIA Regulations, based on topic specific criteria and the generic thresholds outlined in **Table 4.2** below.

Table 4.2 - Generic EIA Significance Criteria

	Level of Effect	Criteria
<i>Significant</i>	Substantial	These effects are assigned this level of significance as they represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. A change at a district scale site or feature may also enter this category.
	Major	These effects are likely to be important considerations at a local or district scale and may become key factors in the decision-making process.
	Moderate	These effects, while important at a local scale, are not anticipated to be key decision-making issues.
<i>Not significant</i>	Minor	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process.
	Negligible	Either no effect or effect which is beneath the level of perception, within normal bounds of variation or within the margin of forecasting error. Such effects should not be considered by the decision-maker.

4.5 Relevant Cumulative Developments

- 4.5.1 The EIA Regulations require likely significant cumulative effects from a development proposal in combination with “*existing development and/or approved development*” to be described within an ES. A review of the planning permissions registers for the planning authority was undertaken in February 2018 to identify any relevant approved or proposed developments not already identified within Section 2.4 (and taken account of within) of the original ES. Only one new relevant cumulative development was identified:
- 2018/0379/DET – Erection of ancillary structures (retrospective) and change of use of woodland to bird flying display area and laying of hardstanding.
- 4.5.2 Whilst other new planning applications with were identified within the vicinity of the site, these were for temporary works, cosmetic changes and / or advertising consent at Loch Lomond Shores. These would have no interaction with the proposed development and are therefore not likely to result in any significant cumulative effects so have not been considered further.

5 Legislative and Planning Policy Context

5.1 No Changes

- 5.1.1 There have been no material changes to the applicable legislative and planning policy context since the planning application for the original scheme was lodged in May 2018. The statutory Development Plan applicable to the site continues to comprise the adopted Loch Lomond & the Trossachs National Park Local Development Plan 2017-2021. Scottish Planning Policy has not been revised in the intervening period. Other material considerations as outlined in Chapter 5 of the original ES also remain relevant.

6 Ecology and Woodland

6.1 Scope

- 6.1.1 EnviroCentre Ltd was commissioned to review an indicative layout of proposals for West Riverside and Woodbank house, presented in drawing reference number 1139 AL(0)004 in order to highlight any changes to the outcomes, of the original Ecological Impact Assessment (EclA), in this addendum document.

Background

- 6.1.2 Due to the wooded characteristics of the site, woodland habitats comprise the dominant habitat with the flora and fauna studied and which could be impacted by the proposed development. This remains unchanged in overall terms between the original scheme and the proposed amended scheme.
- 6.1.3 In December 2018, EnviroCentre compiled the West Riverside and Woodbank Woodland Woodland Summary Report, provided as **Technical Appendix 6.1** of the ES Addendum. This describes the woodland survey work undertaken to date and provides an overview of the changes to the methodology proposed in the scoping report as a result of consultation with the Loch Lomond and Trossachs National Park (LLTNP) Woodlands Officer. The report also provides a summary of information pertaining to the woodland habitats present at the West Riverside and Woodbank site. This included historical review of woodland changes over a 300-year period and a detailed description of what is present today.
- 6.1.4 Baseline data from all studies found that the woodland is comprised of fairly distinct and differing structures. These were initially mapped along with Ancient Woodland (Long-established woodlands of plantation origin (LEPO)) boundaries and British Standard 5837:2012 locations and dimensions of the most prominent trees in the landscape, present at the site. Mostly these were planted trees of exotic and domiciled species. The woodlands in general were found to be under pressure from invasive plant species and the composition of the woodland is slowly altering from oak dominated towards becoming a sycamore dominated woodland.
- 6.1.5 During consultation with LLTNP's planning team and woodland officer it was highlighted that there would be a need to demonstrate a strategy to minimise tree removal from within Drumkinnon and Woodbank. In particular the core oak woodland habitat. At this stage a change in scope was enacted from the delivery of a broad Arboricultural Impact Assessment towards a more strategic design with proposed method and mitigation statements. In order to reduce the need for tree removal for the type of development proposed within mature woodland, the glades (of c.20m radius) within the woodland were located in order that lodges could be located without the removal of mature trees, especially core native species. Some glades could be expanded by removing species such as sycamore. The woodlands also host existing path networks which could be improved to facilitate the access provisions required in design. A series of mitigations were embedded within design to minimise impacts to soils and flora at this stage.
- 6.1.6 During the same consultation, it was agreed that the more recently planted woodland adjacent to the River Leven could have the potential for adaptation and re-structuring to facilitate the proposed design.
- 6.1.7 Outline strategies were designed to guide the proposed works in relation to minimising effects on the woodland habitats and therefore the associated flora and fauna. These strategies were accounted for when assessing the residual effects on Important Ecological Features.

6.2 Appraisal of Final Design

- 6.2.1 The final development parameters of the proposed amended scheme (as shown on submitted indicative layout drawings) include the following features pertinent to minimising impacts on woodland:
- Retention of the riparian woodland edge to the River Leven

- Riverside lodges which appear to be positioned on or close to the existing open grassland at this location followed by infill planting which would increase woodland cover in this zone.
 - Retention and development of a tree lined avenue along Pier Road.
 - Drumkinnon woodland glades and existing pathways dictating lodge and access locations.
 - Woodbank's grassland field receiving generous infill planting surrounding the lodge locations.
 - Woodland loss shown at three locations: Pier Road car park; Drumkinnon Entrance Buildings; Woodland Lodge (WL)11-16 at Woodbank; and Service area and Deliveries. However these locations are not core Oak woodland, nor listed as Ancient Woodland and the level of planting listed above is deemed more than compensatory for these area losses. These structures would require British Standard tree protection barriers installed in order to protect retained nearby trees.
- 6.2.2 Of note, the proposed change from 'Luxury Accommodation' to boat and equipment store uses at the 'Boat House' in the northern section of Drumkinnon Bay should not fundamentally alter woodland use and management in this area, as these woodland are already extensively accessed for recreational purposes.

6.3 Residual Effects

- 6.3.1 Following this appraisal it is clear that the suggestions presented in technical appendices have been brought forward into more detailed design and as such the Magnitude of Impact and Significance of Effect remains unchanged from previously assessed in the original ES i.e. the magnitude of impact is **moderate** and **significant at a local level** during construction, while the magnitude of impact is **minor** and **significant at a local level** during the operational phase.
- 6.3.2 Based on the retention and expansion of woodland habitats across all zones in the site; and although the installations can be considered permanent features, the woodland and its augmented planting should continue to develop into a cohesive habitat alongside multi-purpose uses. Thus it is possible that the Duration of Impact on Ancient Woodland (LEPO) and Broadleaved semi-natural woodland can be considered more Temporary than Permanent in both the construction and operational phases.
- 6.3.3 If all mitigating and enhancing strategies, such as maintaining ecological baseline data; producing detailed tree protection plans during the engineering design stages; appointment of an Ecological Clerk of Works; sensitive construction using low impact methods; soil management and eradication of invasive plants, are brought into method statements then these predictions are made with a High level of confidence.

6.4 Cumulative Impacts

- 6.4.1 The single newly identified cumulative development (2018/0379/DET) involves no tree clearance, only the addition of a small area of hardstanding for visitors. It is unlikely that this development would generate any significant cumulative effects that need to be addressed. No new or different likely significant cumulative effects are therefore predicted compared with those previously assessed.

7 Traffic and Transport

7.1 No Changes

8 Noise and Vibration

8.1 No Changes

9 Air Quality

9.1 No Changes

10 Water, Hydrology and Flood Risk

10.1 Review of the Baseline Conditions

10.1.1 The baseline conditions to the assessment have not changed, although further detail in characterising these conditions is provided below in response to clarifications requested by SEPA. These relate to the assessment of flood risk at the pierhead and the unnamed watercourse 2 to the south of Woodbank House.

10.1.2 Additional information provided in **Technical Appendix 10.1** comprises:

- Riverside West: Flood Risk Clarifications – Briefing Note 01 (Pier Head), dated 13/12/18;
- Riverside West: Flood Risk Clarifications – Briefing Note 02 (Culverts at Old Luss Road), dated 13/12/18;
- EnviroCentre email to SEPA seeking confirmation of acceptability of indicative layout refinements, dated 15/01/19; and
- SEPA letter confirming acceptability in principle of indicative layout refinements (SEP letter ref PCS/162833, dated 01/02/19).

10.1.3 This information confirms that:

- The functional floodplain for the River Leven is considered to be that shown in Figure 10.2 of the ES, with the area to the west of the pierhead being considered the floodplain of Loch Lomond.
- The design flood level for the development in the pierhead area is the 1 in 200 year return period peak River Leven flood level including an allowance for climate change.
- The flood risk around the culverts under Old Luss Road to the south of Woodbank House is predominantly upstream and to the south of the masterplan development, influenced by existing crossing points on the unnamed watercourse and the general topography that slopes away from the site.

10.2 Appraisal of Final Design

10.2.1 Taking account of all proposed changes, in respect of the proposed amended scheme:

- There are no buildings proposed within the functional floodplain of the River Leven.
- The only aspect of the development within the functional floodplain of the River Leven is a small area of car parking. This is similar to the existing use in this area and is considered an appropriate land use in terms of flood risk vulnerability.
- The apart hotel at the pierhead has finished floor levels of 11.5 metres above Ordnance Datum (mAOD), which includes a freeboard provision above the design flood level (10.57 mAOD).
- All other buildings will have finished floor levels above the design flood level, including an allowance for climate change and an appropriate freeboard.
- The indoor water park encroaches slightly into the functional floodplain of Loch Lomond within Drumkinnon Bay. The nature of the facility requires it to be close to the water edge and the location is also determined by wider infrastructure and flood risk constraints on the site. The facility has been assessed as follows:
- In terms of flood risk vulnerability, this land use is considered appropriate at this location as it is classified as a least vulnerable use in SEPA guidance.
- The encroachment would be between the levels of 9.95 – 10.57 mAOD, which is at least 1.9 m above the average water level of the loch (8.05 mAOD).

- The encroachment would result in the displacement of approximately 130 m³ of Loch Lomond floodplain storage, which is negligible in terms of flood storage volume within Loch Lomond, however it will require appropriate compensatory storage to be provided on a level for level basis elsewhere along the lochside of Drumkinnon Bay to ensure a neutral effect on flooding.

10.2.2 The original ES promoted embedded mitigation by ensuring that:

- *“No buildings within the functional floodplain and finished floor levels of buildings adjacent to the water bodies to be above the 1 in 200yr + climate change peak flood level” (ES Volume 1, Chapter 10, Section 10.6.1).*
- *“All proposed development is to be located outwith the functional floodplain as identified in the Flood Risk Assessment, and the minimum finished floor levels of buildings on site are to be above the maximum flood level estimated for the 1 in 200 year + climate change event.” (ES Volume 1, Chapter 10, Section 10.11.2)*

10.2.3 This embedded mitigation has been revised to recognise flood risk in relation to land use vulnerability, and the differences in flood risk from the River Leven and Loch Lomond. The embedded mitigation proposed in relation to the proposed amended scheme now comprises:

- All development will be consistent with the SEPA guidance on flood risk land use vulnerability;
- No buildings will be located within the functional floodplain of the River Leven, or any other watercourses within the masterplan area;
- Finished floor levels of buildings in the vicinity of the functional floodplain of the River Leven, or any other watercourses within the masterplan area, will be above the design flood level of the 1 in 200 year return period event including an allowance for climate change and an appropriate freeboard; and
- Any displacement of Loch Lomond floodplain storage will be subject to provision of appropriate compensatory storage.

10.3 Residual Effects

10.3.1 The proposed amended scheme will not increase flood risk, and the refined layout has enhanced the embedded mitigation and retained the previous mitigation proposed. As a result, the residual effects will remain as previously assessed and will ensure that there are no residual effects of significance i.e. the Residual Level of Effect is **Negligible Adverse** while the Residual Effect Significance remains **Not Significant**.

10.4 Cumulative Impacts

10.4.1 The single newly identified cumulative development (2018/0379/DET) is unlikely to have any significant cumulative effects on the water environment that need to be addressed. No new or different likely significant cumulative effects are therefore predicted compared with those previously assessed.

11 Ground Conditions and Geology

11.1 No Changes

12 Landscape and Visual Impact Assessment

12.1 Introduction

12.1.1 As requested by the planning authority, this ES chapter provides a new assessment of the likely significant effects from the proposed development (i.e. the proposed amended scheme) on landscape, views and visual amenity. The assessment is based on the characteristics of the site and surrounding area and the key parameters of the proposed development detailed in **Chapter 2 – Site and Surrounding Area** and **Chapter 3 – The Proposed Development** respectively. This Chapter is an updated version of the LVIA chapter (**Chapter 12 – Landscape and Visual Impact Assessment**) of within the original ES. Both the original LVIA and this new LVIA have been prepared by Gillespies LLP.

12.1.2 The aims of this chapter are to:

- Identify the relevant context in which the landscape and visual assessment (LVIA) has been undertaken;
- Describe the methods used to undertake the assessment;
- Outline the relevant baseline conditions currently existing at the site and surroundings;
- Identify the potential direct and indirect landscape and visual effects of the proposed development;
- Identify mitigation and enhancement measures where required to address identified effects;
- Assess residual predicted effects; and
- Assess cumulative landscape and visual effects from the proposed development in combination with other relevant cumulative developments.

12.1.3 This updated LVIA Chapter has been completed based on the original consultation, methodology, scope, legislation and regulations in place at the time of the original EIA submission in May 2018. Therefore the amendments to the LVIA focus on the revised masterplan and updating the original assessment conclusions as required. A review of the original legislation, regulations and developments considered within the cumulative effects assessment has not been undertaken.

12.1.4 In addition the LLTTNP planning authority requested the updated LVIA include:

- Greater detail on the likely 'localised' risks to the Special Landscape Qualities (SLQ) of the National Park; and
- Greater detail on the likely landscape and visual amenity effects resulting from the proposed re-development of the Woodbank House boathouse.

12.1.5 This ES chapter is supported by the following technical reports provided in **Appendices 12.1 - 12.6**:

- **Appendix 12.1 Figures;**
 - Figure 12.1 Site Location and Study Area;
 - Figure 12.2 Topography;
 - Figure 12.3a ZTV Apart-Hotel and Visitor Centre;
 - Figure 12.3b ZTV Station Square;
 - Figure 12.3c ZTV Woodbank House;
 - Figure 12.3d ZTV Woodbank House Boathouse;
 - Figure 12.4 Loch Lomond and The Trossachs Landscape Character Areas; and
 - Figure 12.5 Landscape Designations.

- **Appendix 12.2 Methodology;**
- **Appendix 12.3 Landscape Character Assessment;**
- **Appendix 12.4 Viewpoint Assessment;**
- **Appendix 12.5 Viewpoint Massing Studies and Wirelines; and**
- **Appendix 12.6 Additional Viewpoint Plates.**

12.2 Legislative and Policy Context

Legislation

12.2.1 The overarching legislative framework applicable to this EIA for the proposed development is outlined in **Chapter 5 – Legislative and Policy Context**. As noted in Chapter 5 of this ES Addendum there have been no changes to the applicable legislative and policy context.

12.2.2 Of particular relevance to this assessment is the National Parks (Scotland) Act 2000 as amended, Section 1 of which identifies the four aims of Scotland's National Parks including Loch Lomond and the Trossachs National Park (LLTTNP). These are directly or indirectly applicable to this assessment, namely:

“(a) to conserve and enhance the natural and cultural heritage of the area;

(b) to promote sustainable use of the natural resources of the area;

(c) to promote understanding and enjoyment (including enjoyment in the form of recreation) of the special qualities of the area by the public; and

(d) to promote sustainable economic and social development of the area's communities”.

Policy

12.2.3 The planning policy framework applicable to this EIA for the proposed development is outlined in **Chapter 5 – Legislative and Policy Context**. Planning policy considerations of specific relevance to this assessment are:

- Adopted **Loch Lomond and the Trossachs National Park (LLTNP) Local Development Plan (LDP) (2016)** including relevant policies outlined in **Table 5.1**, in particular:
 - The LDP Development Strategy Map (page 17) identifies Balloch as one of eight locations for 'Strategic Tourism Opportunities', reflecting its role as a visitor destination and gateway to the National Park;
 - Overarching Policy 1 – Strategic Principles;
 - Overarching Policy 2 – Development Requirements;
 - Visitor Experience Policy 2 – Delivering a World Class Visitor Experience;
 - Natural Environment Policy 1 – National Park Landscapes, Seascape and Visual Impact;
 - Natural Environment Policy 8 – Development Impacts on Trees and Woodlands;
 - Historic Environment Policy 1 – Listed Buildings;
 - Historic Environment Policy 3 – Wider Built Environment and Cultural Heritage;
 - Historic Environment Policy 4 – Gardens and Designed Landscapes (GDL);
 - Historic Environment Policy 6 – Scheduled Monuments and Other Nationally Important Archaeological Sites; and
 - Open Space Policy 2 – Protecting Other Important Open Space;

- Draft LLTP Partnership Plan 2018 – 20231, in particular outcomes 1-3 and 5-9;
- **National Planning Framework 3 (NPF3) (2014);**
- **Scottish Planning Policy (2014)** including relevant provisions outlined in **Table 5.2 in Chapter 5**, in particular:
 - Principal Policy on Sustainability (paragraphs 24-35);
 - Principal Policy on Placemaking (paragraphs 36-57);
 - Promoting Rural Development Subject Policy (Paragraphs 74 – 91);
 - Valuing the Historic Environment Subject Policy (Paragraphs 135 – 151); and
 - Valuing the Natural Environment Subject Policy (Paragraphs 193 - 233).
- **Creating Places - A policy statement on architecture and place for Scotland (2013).**

Guidance and Relevant Technical Standards

12.2.4 The following guidance and technical standards have informed this assessment:

- Guidelines for Landscape and Visual Impact Assessment Third Edition² (GLVIA3);
- Landscape Character Assessment: Guidance for England and Scotland³;
- Advice Note 01/11 'Photography and Photomontage in Landscape and Visual Assessment'⁴; and
- The State of Environmental Impact Assessment Practice in the UK⁵.

12.3 Methodology

Scope of Assessment

- 12.3.1 This ES chapter presents an assessment of likely significant effects on the landscape, views and visual amenity arising from the proposed development.
- 12.3.2 The assessment presented in this ES chapter has been prepared in accordance with the 2011 EIA Regulations.
- 12.3.3 The principal aspects considered within this assessment are landscape effects and visual effects, which are related but different concepts:
- **Landscape effects** are the effects on the landscape as a resource, including the constituent physical elements of the landscape as well as its specific aesthetic or perceptual qualities, the character of the landscape in different areas and any special interests such as designations or special qualities; and
 - **Visual effects** are the effects on specific views and on the general visual amenity⁶ experienced by people at different places.

¹ Loch Lomond and The Trossachs National Park Authority Loch Lomond and The Trossachs National Park, Partnership Plan 2018 - 2023

² Landscape Institute and Institute of Environmental Management and Assessment (2013), Guidelines for Landscape and Visual Impact Assessment

³ Scottish Natural Heritage (2002), Landscape Character Assessment: Guidance for England and Scotland

⁴ Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment

⁵ Institute of Environmental Management and Assessment, The State of Environmental Impact Assessment Practice in the UK (2011)

⁶ Visual amenity is the overall pleasantness of the views people enjoy of their surroundings.

- 12.3.4 At the request of the Landscape Officer of the LLTTNP a key consideration of this assessment was the need to understand how the Special Landscape Qualities (SLQ)⁷ of the LLTTNP ('the Park'), are experienced and how they may be affected by the proposed development. SLQ are linked to the type, range and composition of the physical components of the landscape, as well as to the less tangible experiential aspects of landscape as recognised and valued by people. SLQ do not necessarily have to be rare qualities, but simply what makes an area important and valued.
- 12.3.5 Within the Scoping Opinion it was detailed that the SLQ of the LLTTNP likely to be affected by the proposals are the Park's general qualities and the area based qualities of Loch Lomond. Therefore these are the qualities that have been considered within this assessment. Greater detail on the SLQ is provided below in paragraphs 12.4.33 to 12.4.38, paragraphs 12.7.13 to 12.7.15 and on pages 4 and 5 of **Appendix 12.3 Landscape Character Assessment**.

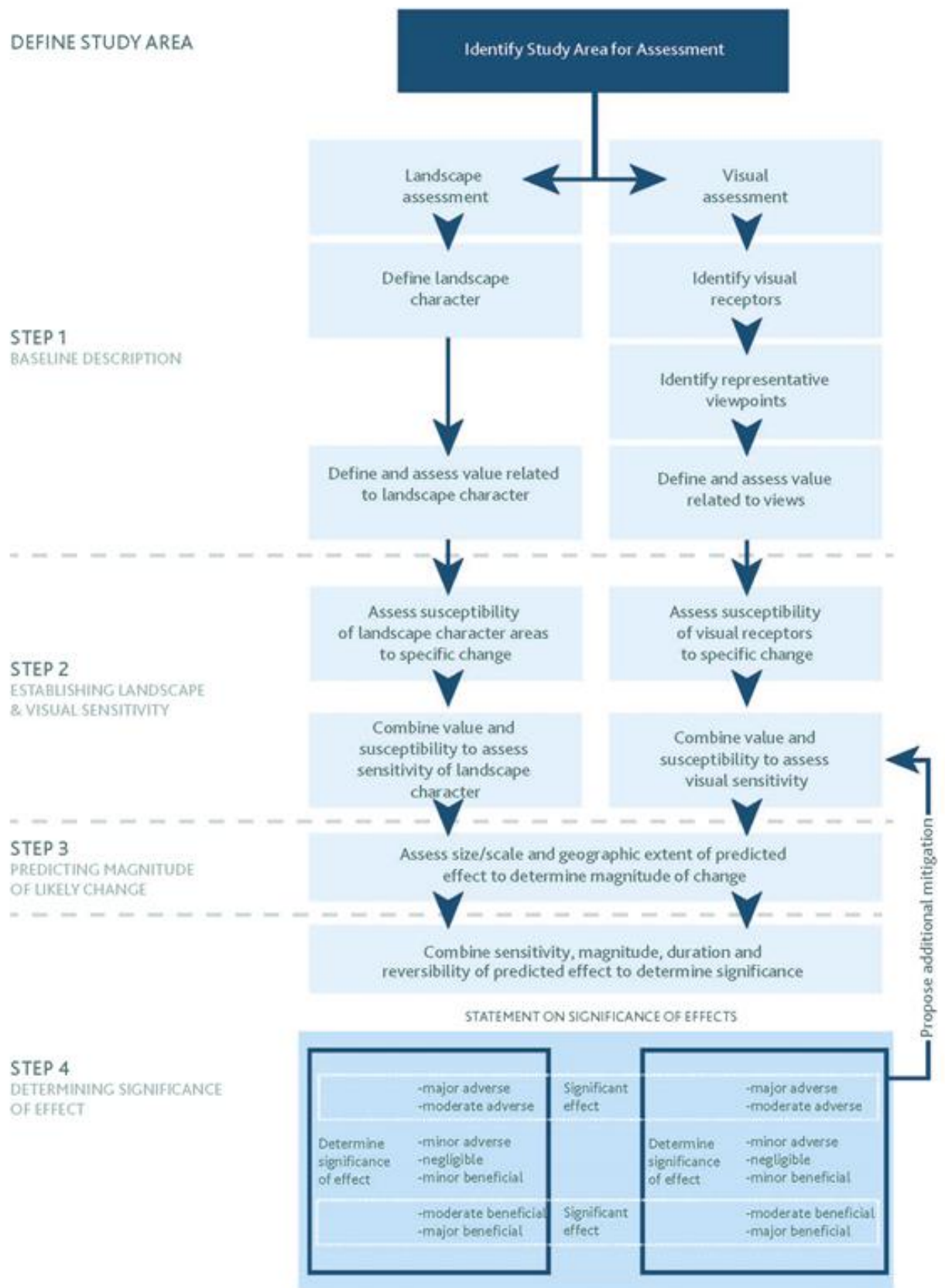
Overall Approach

- 12.3.6 This ES chapter presents an assessment of the likely significant effects of the proposed development on the landscape, views and visual amenity.
- 12.3.7 This assessment has been informed by an EIA Screening and Scoping Report (PBA, April 2017) and subsequent EIA Screening and Scoping Opinions issued by LLTNPA (11th May 2017) in respect of the EIA for the proposed development. The EIA Scoping Opinion, which is provided in full in **Appendix 4.1**, included a list of standard requirements for LVIA work. However, the following should also be noted:
- It was stated that reference should be made to the Landscape Character Assessment SNH Review (2015) and in particular the landscape character type (LCT) rationalisation, which would reclassify the southern end of Loch Lomond as Loch Lomond Basin LCT. This review was scheduled to be published at the end of 2017. At the time of writing (January 2018) this review is not yet available and therefore cannot be referenced. Requests were made to the National Park Authority for a copy of the review on 10 and 23 January 2018. On 24 January 2018 the Landscape Office at the Park confirmed that the 2015 review was not yet available and the previous document and classifications should be used;
 - Likely visual amenity effects on tourist and recreational receptors are covered within this chapter. Other likely effects on recreational experience and visitor management are covered within **Chapter 14 - Socio-Economics, Tourism, Recreation and Public Access**; and
 - Whilst heritage assets are referenced within this chapter as part of the baseline, the assessment of likely effects on heritage assets is provided in **Chapter 13 – Archaeology and Heritage**.
- 12.3.8 Since submitting the EIA Screening and Scoping Report for the proposed development, desk top research, field studies and further consultations with stakeholders including the National Park Authority has been undertaken. As a result, the methodology presented in this chapter is more detailed in its scope than that presented in the EIA Screening and Scoping Report (PBA, April 2017), particularly in respect of providing criteria for assessing value, susceptibility and sensitivity.
- 12.3.9 It is important to note that at the time of undertaking EIA screening and scoping, the key concern with respect to potential landscape and visual impacts was the proposed erection of a tall viewing tower at the south end of Loch Lomond. This proposal is no longer being carried forward and further consultation with the landscape officer at LLTNPA confirmed that, as a result of this proposal being removed, the Study Area for the LVIA of the proposed development could be reduced to 5km and that many of the previously identified potential receptors were no longer relevant to consider within the LVIA.

⁷ As identified in Scottish National Heritage and Loch Lomond and The Trossachs National Park Authority (2010). The special landscape qualities of the Loch Lomond and The Trossachs National Park. Scottish Natural Heritage Commissioned Report No. 376

- 12.3.1 The process for the LVIA is illustrated in Diagram **12.1** and summarised below. Each stage is described in more detail at **Appendix 12.2**. A key principle is for the landscape and visual baseline to be identified and understood before the assessment, which is based on a combination of the receptors value, sensitivity and the predicted magnitude of change, takes place.

Diagram 12.1 LVIA Process



Source: Gillespies LLP

Study Area

- 12.3.2 The site location and Study Area adopted for this assessment are shown in **Figure 12.1** at **Appendix 12.1**.
- 12.3.3 A 20km radius Study Area from the site was proposed in the EIA Scoping Report. As noted above, following the decision to remove the viewing tower from the proposed development, and with agreement from LLTNPA, this was reduced to a 5km radius from the site boundary, for the LVIA. The 5km Study Area which has been adopted in this assessment is larger than would normally be used for projects of this type, however due to the site's location within a National Park and the local topography it was decided that 5km would be an appropriate distance to ensure any noticeable landscape and visual effects were identified.
- 12.3.4 Due to the scale of the proposed development and the lack of perceptibility of the site from the wider area, it is unlikely that any prominent effects would be identified from further afield than 5km. However, it was agreed with the National Park Authority that one viewpoint would be included from high ground outside of the Study Area (approximately 7km from the site boundary) to demonstrate that the effect on views from distant high ground would not be significant.

Information Sources

Desk Top Study

- 12.3.5 The assessment was informed by an initial desktop study, including a review of relevant documents, Ordnance Survey (OS) data, aerial photography and Google Earth Pro.
- 12.3.6 Documents which helped define the landscape across the Study Area include:
- Loch Lomond and The Trossachs National Park Landscape Character Assessment⁸;
 - Glasgow and Clyde Valley Landscape Character Assessment⁹;
 - Argyll and the Firth of Clyde Landscape Character Assessment¹⁰;
 - Special Landscape Qualities of the Loch Lomond and The Trossachs National Park¹¹; and
 - Kilpatrick Hills Local Landscape Area Statement of Importance¹².

Fieldwork

- 12.3.7 A site survey was undertaken on the 29th and 30th November 2017. Its purpose was to gain further understanding and appreciation of the landscape, the special qualities of the National Park and the landscape character areas within the Study Area, to undertake the viewpoint survey, and to understand the likely effects of the proposed development. A further site survey was undertaken on 30th January 2018 to complete this work.

⁸ Scottish Natural Heritage (2011), Loch Lomond and The Trossachs National Park Landscape Character Assessment

⁹ Scottish Natural Heritage (1998), Glasgow and Clyde Valley Landscape Character Assessment

¹⁰ Scottish Natural Heritage (1996), Argyll and the Firth of Clyde Landscape Character Assessment

¹¹ Scottish National Heritage (2010), Special Landscape Qualities of the Loch Lomond and The Trossachs National Park

¹² West Dunbartonshire Council (2015), Kilpatrick Hills Local Landscape Area Statement of Importance

Approach to Assessment

Identification of Relevant Receptors

- 12.3.8 Predicting the likely effects of the proposed development requires identification of the receptors who are likely to be affected. This includes both:
- Landscape receptors made up of designated landscapes, such as the National Park itself and the Landscape Character Areas (LCA) which cover the Study Area, including their constituent elements, key characteristics, physical, aesthetic and/or perceptual qualities and overall landscape character; and
 - Visual receptors – that is the people, whether individuals or defined groups, who will be affected by changes in views or visual amenity at different places.
- 12.3.9 In identifying visual receptors, three Zones of Theoretical Visibility (ZTV) (**Figure 12.3a, b and c** in **Appendix 12.1 - Figures**) have been prepared for the proposed development:
- **Figure 12.3a** – ZTV based on apart-hotel and visitor centre at the loch shore (this relates to Zone C: Pierhead of Figure 3.1 – Parameters Plan);
 - **Figure 12.3b** – ZTV based on the ‘Station Square’ development (this relates to Zone A: Station Square of Figure 3.1 – Parameters Plan);
 - **Figure 12.3c** – ZTV based on the proposed residential development at Woodbank House (this relates to Zone E: Woodbank of Figure 3.1 – Parameters Plan); and
 - **Figure 12.3d** – ZTV based on the proposed boathouse on the site of the former Woodbank House boathouse (this relates to a single location in Zone D: Drumkinnon Wood and Bay, of Figure 3.1 – Parameters Plan).
- 12.3.10 A ZTV has not been produced for the proposed woodland lodges and other structures within Drumkinnon Woods (relating to Zone B: Riverfront and Zone D: Drumkinnon Wood and Bay, of **Figure 3.1 – Parameters Plan**). By definition these developments would be substantially screened from visual receptors in the wider Study Area and would therefore not give rise to significant visual effects. A ZTV for development within the woodland would not be a useful assessment tool.

Impact Assessment Methodology

- 12.3.11 The same overall methodology has been adopted to assess likely effects during the construction and operational phases of the proposed development, as described below.

Step 1 – Baseline Description

Landscape Baseline

- 12.3.12 The LCAs defined within the existing published landscape character assessments listed in paragraph 12.4.28 formed the starting point for the description of the landscape baseline. For each identified LCA, a detailed information and assessment sheet is provided within **Appendix 12.3 – Landscape Character Assessment**, which also includes a detailed information and assessment sheet for the Park as a whole.
- 12.3.13 The Park and each LCA was described in terms of:
- The existing situation, including a factual description of the existing landscape - its constituent elements, its character and the way this varies spatially, its geographic extent, its history, its condition and the way the landscape is experienced;
 - The existing landscape character – the distinct recognisable and consistent pattern of elements in the landscape that makes one landscape different from another; and
 - The value of the existing landscape – this informs later judgments about significance of effect.

- 12.3.14 Landscape value¹³ is defined as the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a variety of reasons. Value can apply to areas of landscape as a whole, or to the individual elements, features and aesthetic or perceptual dimensions which contribute to the character of the landscape. The quality of a valued landscape is often explained in a citation for a designation, but where this isn't available, value can be assessed through the application of a criteria based comparative landscape approach supported by published documentation such as tourist leaflets, art and literature. This is in line with the European Landscape Convention¹⁴, which promotes an 'all-landscapes approach', founded on the recognition of value in all landscapes.
- 12.3.15 To ensure a systematic and consistent approach, the landscape value of each LCA was described with reference to seven criteria. These criteria are based on the key landscape characteristics identified within the Loch Lomond and The Trossachs National Park Landscape Character Assessment and consideration of GLVIA3 and the range of factors listed in Box 5.1 of GLVIA3 as helping the identification of valued landscapes. The seven criteria are: landscape features (i.e. landform, land use and land cover); settlement, development and leisure; access and recreation; biodiversity; cultural heritage and associations; aesthetic qualities and perceptual qualities (e.g. tranquillity or wildness).
- 12.3.16 For each criteria, the value of the landscape within each LCA was determined using a four-point scale from low to very high using professional judgement with reference to the site visits, consultation feedback, review of background documentation and consultation with other disciplines such as ecology and cultural heritage.
- 12.3.17 An overall level of value for each LCA was determined using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of value provided in **Table 12.2.1** in **Appendix 12.2**. In making judgements on landscape value, additional weight was given to the factors which were considered to be making the most contribution to the value of the landscape.

Visual Baseline

- 12.3.18 The assessment of the visual baseline within the Study Area considered the following:
- The area within which the proposed development may be visible – by use of the ZTV prepared for the proposed development. In this instance four separate ZTVs were produced because the proposed development has three separate zones of potential visibility (plus the proposed boathouse), as detailed below in the Baseline Conditions section of this chapter;
 - The different groups of people who may experience views of the proposed development;
 - The identification of representative viewpoints from which to conduct the viewpoint survey, as agreed with the landscape officer at the National Park Authority;
 - The final selection of representative viewpoints following three days of field work including visiting the initially selected representative viewpoints; and
 - The nature of the views and visual amenity at the selected viewpoints.
- 12.3.19 All the viewpoints used for the assessment of visual effects were in publicly accessible locations and were chosen to represent the range of visual receptors and types of view likely to be experienced within the surrounding area. The area around each broad viewpoint location was explored to find the most suitable (i.e. unscreened and representative) and safe location for the view to be recorded and photographed.
- 12.3.20 Judgements about the value attached to the view at each viewpoint took account of:

¹³ Value in this instance means demonstrable features that elevate it above the ordinary.

¹⁴ The European Landscape Convention (ELC) was the first international convention to focus specifically on landscape, and is dedicated exclusively to the protection, management and planning of all landscapes in Europe. The ELC became binding from 1 March 2007.

- Views which are important in relation to the special qualities of a designated landscape (in this case the LLTTNP);
- Views recorded as important in relation to heritage assets (as recorded in the relevant citations accompanying the designation and taking account of Historic Scotland's guidance¹⁵ on the setting of heritage assets);
- Advertised viewpoints which appear in a guidebook or on tourist maps;
- Location with provision of facilities for enjoyment e.g. parking, picnic and interpretation facilities; and
- Professional judgements about the quality and condition of the view.

12.3.21 Each viewpoint was visited and an overall level of the value of the view experienced was determined using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of value provided in **Table 12.2.2** in **Appendix 12.2**. In making judgements on value, additional weight was given to the factors which were considered to be making the most contribution to value.

Step 2 – Establishing Landscape and Visual Sensitivity

12.3.22 The sensitivity of landscape and visual receptors is made up of judgements about the susceptibility of the receptor to the type of change arising from the proposed development and the value attached to the landscape or view under consideration (as defined by the baseline study).

12.3.23 Susceptibility is defined as the ability of a defined landscape or visual receptor to accommodate the proposed development without undue negative consequences.

Landscape Sensitivity

12.3.24 In determining landscape sensitivity, judgements were first made about the susceptibility of the landscape to the type of change arising from the proposed development - that is the extent to which the attributes of the receiving landscape are considered able to accommodate the proposed development without undue negative consequences.

12.3.25 The most susceptible i.e. vulnerable or fragile landscape is one which has little scope to accommodate the changes from the proposed development without its key characteristics being fundamentally altered, potentially leading to a different landscape character and conflicting with planning policies and strategies. Conversely a robust landscape is one which is resilient to the changes arising from the proposed development. In such cases only individual elements and/or features, or a particular aesthetic and perceptual aspect may be affected and the proposed development accords with planning policies and strategies.

12.3.26 The susceptibility of the landscape to the development was considered using the same criteria outlined above for assessing the landscape value and again each criteria was judged on a four-point scale from low to very-high using professional judgement with reference to site visits, consultation feedback, review of background documentation and consultation with other disciplines such as ecology and cultural heritage.

12.3.27 These judgements on the individual criteria were then considered together to inform an overall evaluation of the susceptibility of the landscape using professional judgement to assimilate the assessments made for each of the criteria and draw out the criteria most important to susceptibility in each case.

12.3.28 Finally, the judgements on value (as defined in the baseline study) and susceptibility of the landscape within each LCA were combined into an overall judgement on sensitivity using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of landscape sensitivity provided in **Table 12.2.3** in **Appendix 12.2**. In making judgements on landscape sensitivity, appropriate weight was given according to the factors which were considered to be making the most contribution.

¹⁵ Historic Environment Scotland (2016), Managing Change in the Historic Environment: Setting

Visual Sensitivity

- 12.3.29 In determining visual sensitivity, judgements were first made about the susceptibility of each visual receptor to the type of change arising from the proposed development. The susceptibility of visual receptors is typically a function of the occupation or activity of people experiencing the view at a particular location and the extent to which their attention or interest may therefore be focused on the view and the visual amenity they experience. For example residents have prolonged viewing opportunities and are more likely to be interested in their surroundings than people using sports pitches or working indoors, whose attention is likely to be focussed on their activity rather than on the view.
- 12.3.30 For each viewpoint the judgements on the value of the view and susceptibility of the visual receptors were combined into an overall judgement on visual sensitivity using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of visual sensitivity provided in **Table 12.2.4** in **Appendix 12.2**. In making judgements on sensitivity, appropriate weight was given according to the factors which were considered to be making the most contribution.
- 12.3.31 As explained in more detail in Appendix 12.2, depending on the individual circumstance of each receptor, the assessment of sensitivity of the visual receptors at each viewpoint was adjusted up or down to fully reflect the viewer's expectations at a particular viewpoint and the nature of the development proposed in that location. For example people visiting the National Park are likely to be more sensitive to a large scale commercial development than they would to a new property built in the local vernacular.
- 12.3.32 Most of the selected viewpoints are representative of more than one type of receptor, for example, Viewpoint 6 represents the view experienced by both drivers and residents along Old Luss Road. In this situation residents have prolonged viewing opportunities and are considered to have a higher sensitivity to changes in visual amenity than road users. Where this arises, the highest sensitivity receptor is used in the assessment.

Step 3 – Predicting the Magnitude of Likely Change

- 12.3.33 Prediction of the likely magnitude of landscape and visual change combines judgements about the size and scale of the likely effect and the geographical extent of the area over which it occurs. When predicting magnitude of likely change the embedded mitigation listed in **Section 12.6 – Embedded Mitigation**, was taken into account.

Magnitude of Landscape Change

- 12.3.34 The scale/size and geographical extent of the change within an LCA depends on the degree to which the character of the landscape would be altered through the removal of existing landscape components or the addition of new components.
- 12.3.35 For each LCA the judgements on size/scale of effects and geographical extent were combined and an overall prediction of the likely magnitude of change made using a five-point scale of negligible to very-high based on professional judgement and the indicators set out in **Table 12.2.5** in **Appendix 12.2**.
- 12.3.36 Magnitude of landscape change was also assessed as being either beneficial or adverse where for:
- Beneficial change - the development, or part of it, would appear in keeping with existing landscape character and would make a positive visual and/or physical contribution to the key characteristics; and
 - Adverse change - the development, or part of it, would be perceived as an uncharacteristic or intrusive component in the context of existing landscape character and would have a negative visual and/or physical effect on key characteristics.

Magnitude of Visual Change

- 12.3.37 The size/scale of the change in the view depends on the degree to which the view would be altered and is influenced by the factors listed in **Section 12.3.71** of **Appendix 12.2**.

12.3.38 For each viewpoint the judgements on the size/scale of effect and geographical extent were combined and an overall prediction of the likely magnitude of change made using a five-point scale of negligible to very-high based on professional judgement and the indicators set out in **Table 12.2.6** at **Appendix 12.2**.

12.3.39 As requested within the EIA Scoping Opinion and discussed in subsequent consultation with LLTTNP, visualisations of the proposed development have been prepared for selected viewpoints where significant visual effects are considered likely. They are presented in **Appendix 12.5 Viewpoint Massing Studies**. As this is currently only a Planning Permission in Principle the visualisations produced focus on the likely mass of the buildings within the Proposed Development and are not intended to be photomontages or photo-realistic interpretations. These visualisations helped inform the assessment of the likely magnitude of visual change.

12.3.40 Magnitude of visual change was also assessed as being either beneficial or adverse, as follows:

- Beneficial change - the development, or part of it, would be perceived as a positive addition in the context of the existing view; and
- Adverse change - the development, or part of it, would be perceived as an uncharacteristic or intrusive component in the context of the existing view.

Assumptions and Limitations

12.3.41 All construction effects are assumed to be adverse.

12.3.42 It was not possible to enter the curtilage of private residential properties therefore the assessment of potential effects on the visual amenity of residents has been carried out from nearby roads and footpaths.

12.3.43 Due to the fieldwork being undertaken during the winter months, visitor access (via the public ferry services for example) to Inchmurrin Island, in order to undertake a field survey and viewpoint photography, has not been possible. A panoramic photograph was provided by the LLTNPA for use within this report and the impact assessment completed via desk-top research.

Establishment of Effect Level and Significance

12.3.44 To draw final conclusions about the likely level and significance of landscape and visual effects, the separate judgements about the value and sensitivity of the individual landscape and visual receptors and the magnitude of each effect were combined. The likely level of effect was first identified when assessing potential effects in the absence of further (i.e. not embedded) mitigation (see **Section 12.7**), with the residual significance of likely effects then confirmed in **Section 12.9**.

Step 4 – Determining the Significance of Effects

12.3.45 Assessment of the likely level and significance of landscape or visual effects required the application of professional judgement to weigh the sensitivity of the landscape or visual receptors with the magnitude of predicted change. The broad criteria that influenced the level and significance of landscape and visual effects are set out in **Table 12.1** below. Because different factors may be relatively more or less important depending on the particular location, the presence of any combination of factors which contribute to sensitivity or magnitude was considered when assessing the level (and thus significance) of effect.

12.3.46 A further consideration at this stage was the duration of the predicted change and whether it could be reversed if the proposed development were removed.

12.3.47 The final judgment on whether each effect should be considered significant in the context of the EIA Regulations took account of relevant proposed further mitigation and enhancement measures (**Section 12.8**). It also relied on informed professional judgement, supported by narrative text to draw out the key issues, describe the effects and explain the underlying rationale.

Table 12.1 - Definitions of Effect Level and Significance

Effect Level and Significance	Definition
Major Beneficial (significant)	<p>Would considerably improve and enhance the existing landscape character/landscape setting or view.</p> <p>Would restore or reinstate valued characteristic elements/features entirely or substantially lost through other land uses.</p> <p>Would make a substantial positive contribution to local environmental policies for the protection and enhancement of the landscape.</p>
Moderate Beneficial (significant)	<p>Would markedly improve and enhance the existing landscape character/landscape setting or view.</p> <p>Would restore or enhance valued characteristic elements/features largely lost through other land uses.</p> <p>Would make a positive contribution to local environmental policies for the protection and enhancement of the landscape.</p>
Minor Beneficial	Would slightly enhance the existing character/landscape setting or view.
Negligible	Would be compatible with the existing character/landscape setting or view.
Minor Adverse	<p>Would be slightly at variance with the existing character/landscape setting or view.</p> <p>Would damage or partially remove some locally valued characteristic elements/features.</p> <p>Would cause a perceptible deterioration in the view.</p>
Moderate Adverse (significant)	<p>Would be at variance with the existing character and/or setting of the landscape and diminish its integrity.</p> <p>Would destroy, degrade or diminish valued characteristic elements/features (including aesthetic or perceptual qualities).</p> <p>Would cause a noticeable deterioration in the view.</p> <p>Would potentially be compatible with local environmental policies for the protection and enhancement of the landscape.</p>
Major Adverse (significant)	<p>Would be at considerable variance with the existing character and/or setting of the landscape, degrading its integrity.</p> <p>Would permanently destroy, degrade or diminish valued characteristic elements/features (including aesthetic or perceptual qualities), particularly rare or distinctive landscapes.</p> <p>Would cause a substantial deterioration in the view.</p>

Effect Level and Significance	Definition
	Would conflict with international, national, regional or local environmental policies for the protection and enhancement of the landscape.

12.3.48 Each of these four categories (Negligible, Minor, Moderate or Major) covers a broad range of effects and represents a continuum or sliding scale as illustrated in **Diagram 12.2** below, which is adapted from the 'EIA Significance Evaluation Matrix' Figure 6.3 in The State of Environmental Impact Assessment Practice in the UK¹⁶. Any residual effect judged to be Major or Moderate is deemed to be significant in the context of the EIA Regulations.

12.3.49 As noted in GLVIA3 (para. 6.44), the relationship between receptors and effects is not generally a linear one and there are no hard or fast rules about what makes an effect significant. In terms of landscape effects, paragraph 5.56 of GLVIA3 notes that at opposite ends of the spectrum:

- *'Major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally valued landscapes are likely to be of the greatest significance; and*
- *Reversible negative effects of short duration, over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to, but are not key characteristics of the character of landscapes of community value, are likely to be of the least significance and may, depending on the circumstances, be judged as not significant'.*

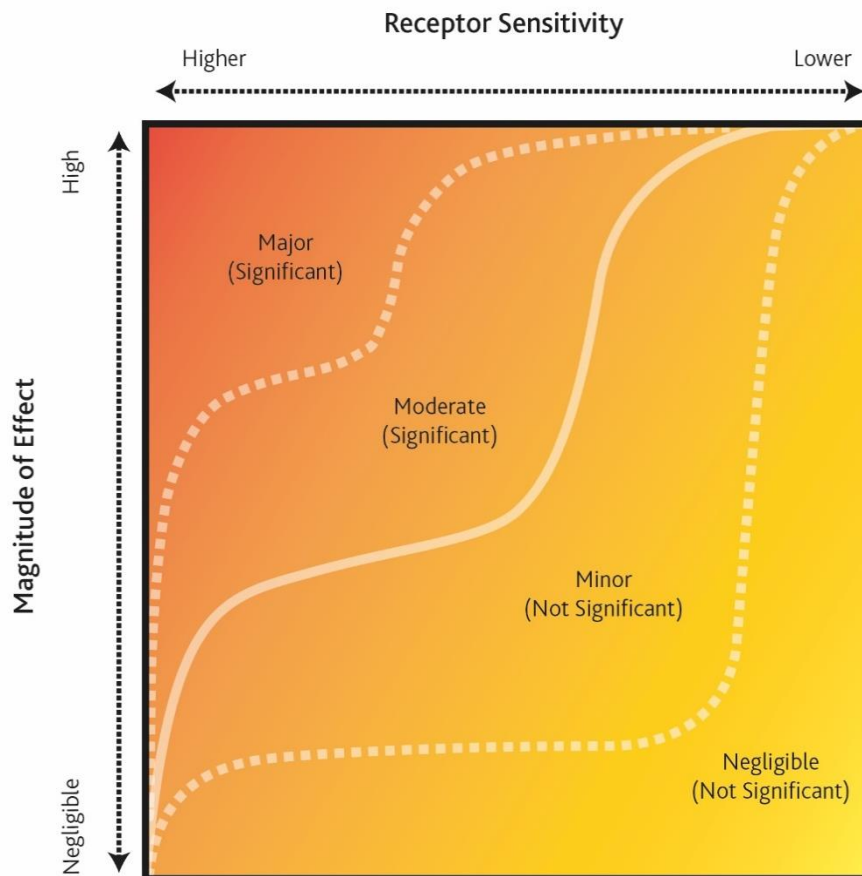
12.3.50 In terms of visual effects, paragraph 6.44 of GLVIA3 notes the following:

- *'Effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant;*
- *Effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant; and,*
- *Large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes involving features which are already present within the view'.*

12.3.51 The final judgment on whether each effect should be considered significant relies on informed professional judgement and is supported by descriptive text to draw out the key issues, describe the effects and explain the underlying rationale.

¹⁶ Institute of Environmental Management and Assessment, The State of Environmental Impact Assessment Practice in the UK (2011)

Diagram 12.2: EIA Significance Evaluation Matrix



Adapted from Figure 6.3 EIA Significance Evaluation Matrix from IEMA's Report - The State of EIA Practice In The UK, (2011)

- 12.3.52 Where landscape or visual effects were judged to be adverse (see **Table 12.1** above), proposals for preventing/avoiding, reducing or offsetting or compensating for such effects (referred to as further mitigation) have been identified where possible. The likely level and significance of residual effects remaining after taking account of further mitigation have been summarised as the final step in the assessment process (**Section 12.9**).
- 12.3.53 Effects associated with construction will typically be temporary, lasting the duration of the construction phase. For operation, the assessment takes accounts of the effects at operation year 1, i.e. the point at which the proposed development would first be visible in its entirety and at operation year 15, i.e. when the long-term residual effects are considered following the establishment of any planting within the design and mitigation proposals and further growth of existing vegetation.

Approach to Cumulative Impact Assessment

- 12.3.54 Cumulative landscape and visual effects are the likely additional landscape and visual effects to arise from the proposed development when considered in conjunction with other relevant development proposals, as defined in **Chapter 2 – Site and Surrounding Area** and shown on **Figure 2.2 in Appendix 2.1**.
- 12.3.55 The proposed and consented developments to be considered, as identified by the LLTTNP planning authority, are:
- Replacement building and infrastructure for Sweeney's Cruises (planning application 2017/0373/DET);

- Drumkinnon Bay dredging (planning permission 2017/0326/DET). Consented January 2018;
- Woodbank Inn Hotel Extension (planning permission 2017/0223/DET). Consented November 2017;
- Balloch Street Design Project (see <https://www.sustrans.org.uk/balloch>); and
- Erection of ancillary structures (retrospective) and change of use of woodland to bird flying display area and laying of hardstanding (planning permission 2018/0379/DET). Consented February 2019.

12.3.56 It is not considered, due the scale and type of development, that any of the above identified proposals would likely cause noticeable cumulative landscape or visual effects. However, where applicable the cumulative impact assessment has adopted the same methodology as for the assessment of likely landscape and visual effects from the proposed development itself.

12.4 Baseline Conditions

- 12.4.1 This section provides a description of the landscape and visual characteristics of the site and the Study Area adopted in this assessment, before reviewing the published landscape character studies relevant to this Study Area. The baseline analysis has been informed by desk top research and site survey work.
- 12.4.2 Details are provided of the various landscape and visual amenity receptors to be found within the Study Area and area covered by the ZTV before the baseline visibility of the site is explained. Judgements on the sensitivity of the different landscape and visual receptors are also provided in this section.
- 12.4.3 In summary, the site is positioned within a nationally important designated landscape, The Loch Lomond and The Trossachs National Park (i.e. a landscape generally considered to be of a very high value) in a lowland area at the southern end of Loch Lomond, with rising ground on all sides of the site except directly to the north (Loch Lomond) and directly to the south (the urban settlements along the River Leven valley). Part of the northern section of the 5km Study Area also falls within the Loch Lomond National Scenic Area (NSA) which, like the LLTTNP, is a nationally designated landscape. It is noticeable that this NSA does not cover the southern end of Loch Lomond or the site, which suggests that the quality of the landscape around the site fell short of that required for NSA designation.
- 12.4.4 The ZTV (**Figure 12.2** in **Appendix 12.1**) illustrates the potential north-south corridor of visibility. It is primarily the landform that controls the potential visual impact of the development proposals, although the areas of woodland within and to the south of the site, together with the built form of Balloch, also have a large screening effect.

Overview

The Site

- 12.4.5 As detailed in **Chapter 2 - Site and Surrounding Area**, the site comprises two distinct but contiguous areas, referred to as 'West Riverside' and 'Woodbank House'.
- 12.4.6 The West Riverside area mostly comprises Drumkinnon Woods to the south of Ben Lomond Way, but also includes the beach and shore area adjacent to and opposite the waterside commercial development known as Loch Lomond Shores and the west bank and jetties of the River Leven where it flows out from Loch Lomond.
- 12.4.7 Drumkinnon Woods is a small area of woodland with walks and picnic areas which is located just to the south of Loch Lomond Shores on gently undulating landform, most likely as a result of former man-made activities. Running east-west through the woodland is a major gas pipeline with associated infrastructure. The woodland contains a variety of native tree species, including a number of semi-mature oak. The woodland currently provides a setting for an area of housing to the south and helps screen views of Loch Lomond Shores from this housing. The

Drumkinnon Woods area extends to a wooded promontory around the north-west of Drumkinnon Bay along the northern boundary of the site.

- 12.4.8 The eastern part of Drumkinnon Woods includes a corridor of open grassland within the woods, which contain mixed pioneer woodland species that would benefit from woodland management such as thinning. This area of woodland lies alongside the River Leven, which flows south into the River Clyde. Views out are limited due to the woodland and views of the river and the loch are only experienced at the edge of the woodland.
- 12.4.9 Drumkinnon Woods is bounded to the west and north by roads accessing Loch Lomond Shores and pier, and to the south by housing.
- 12.4.10 West Riverside also includes a small pebbled beach opposite Loch Lomond Shores which gradually rises to a small wooded area, which is the proposed location of the apart-hotel and visitor centre.
- 12.4.11 The south-east corner of the West Riverside site comprises an area of open grassland and existing car-parking located between the River Leven, Balloch Road and Drumkinnon Woods. It is also the location of the existing 'Visit Scotland' information centre. This corner of the site is the proposed location for the 'Station Square' development comprising budget accommodation, a micro-brewery, performance area and restaurant.
- 12.4.12 The Woodbank House area comprises the remains of the Woodbank House hotel (also known as Hamilton House) associated structures and attendant grounds. It is located between the A82 and the Old Luss Road and lies to the west of the West Riverside area.
- 12.4.13 The area is situated to the west of Old Luss Road at the north-western edge of housing in Balloch. The A82 is situated approximately 90m to the west of the sites western boundary. To the east, Old Luss Road provides access to residential areas and leads to Cameron House and marina.
- 12.4.14 At the centre of the Woodbank House area lies the remains of Woodbank House, a Category-A listed property, which is now largely derelict with only part of the south elevation still remaining. The remains of the house are accessed from the Old Luss Road by a drive which runs through an area of paddock used for grazing horses which is surrounded by the remains of the former terraced gardens, including remnants of the original garden walls.

The Study Area

- 12.4.15 The Study Area extends from the Clyde valley in the south to the Highland Boundary Fault within the LLTTNP in the north. The northern half of the Study Area, including the site, lies within the LLTTNP. **Figure 12.5 in Appendix 12.1** shows other designated sites within the Study Area, including the NSA and the Kilpatrick Hills Local Landscape Area (LLA) which covers the south-eastern section of the Study Area.

Landform and Drainage

- 12.4.16 As shown on **Figure 12.2 in Appendix 12.1**, the site is located in a lowland area at the southern end of Loch Lomond, with rising ground on all sides except directly to the north (Loch Lomond) and directly to the south (the urban settlements along the River Leven valley). Whilst on site the landform of the site appears to be generally level, however, the site does gradually drop in height from west to east. The loch shore development area is level at approximately 12m AOD, with the landform dropping to 8m AOD at the pebbled beach area. Similarly, whilst the 'Station Square' area is level at around 12m AOD, Drumkinnon Woods gradually rises from 11m AOD at the banks of the River Leven to 17m AOD at its western boundary at Old Luss Road. There are also small localised areas of undulating landform within Drumkinnon Woods. This rise in the landform is gradual and happens over an approximate distance of 680m. The Woodbank House site is located on landform which rises from 17m AOD at Old Luss Road to approximately 27m AOD at the house itself and 41m AOD on its western boundary. The landform to the west then carries on rising to 304m AOD (Bromley Muir) 1.8km south-west of Woodbank House and 313m AOD (Ben Bowie) 4.3km west-north-west of Woodbank House. From these highpoints west of the site the landform drops again to the Firth of Clyde. The landform rises to the east

of the site to approximately 212m AOD at Auchincarroch Hill, before entering the landscape of the Kilpatrick Hills east-south-east of the site.

- 12.4.17 Immediately north of the site is Loch Lomond ('the loch'), which extends north for nearly 40km. The landscape at the southern end of the loch around the site is lowland in character. Broad and shallow with gently shelving banks, the southern end of the loch is surrounded by rolling farmland and designed landscapes associated with large properties including Cameron House and Balloch Castle. These farmed hill slopes rise gently from the loch shores forming a series of foothills which merge with the moorlands and pastoral lowlands of the southern loch shores.
- 12.4.18 By contrast the central and northern sections of the loch have a narrow loch-side margin and are surrounded by mountains and high hill ranges, including Ben Lomond (974m AOD) which is prominent on the skyline to the north, and the Arrochar Alps to the north-west reaching 1011m AOD on the summit of Ben Ime. Uninhabited side glens with fast flowing burns and waterfalls and a rugged terrain of crags, screes and boulders are a distinctive feature of the highland loch. These are used for grazing and often contain ancient shielings.
- 12.4.19 The visible difference between the topography around the loch is caused by the Highland Boundary Fault, which separates the highlands and lowlands of Scotland. The fault cuts through the loch in a north-east to south-west direction and is approximately 4.5km north of the site boundary at its nearest point, as it runs through Inchmurrin Island.
- 12.4.20 Ben Bowie, at 313m AOD, is the highest peak within the 5km Study Area. To the west of the mid-to-southern end of the loch the highest peak is Doune Hill (734m AOD) 18km north-west of Balloch and to the east it is Ben Uird (596m AOD) 16km north of the site.
- 12.4.21 The loch flows out at the River Leven immediately adjacent to the eastern boundary of the site. The river flows south for 8.3km before joining the River Clyde at Dumbarton. The valley around the River Leven is generally around 1.2km wide and is on low lying ground approximately 6m AOD at the river banks and rising gradually to approximately 20m AOD 600m either side of the river, before quickly rising to around 300m AOD either side of the valley. As the River Leven approaches the River Clyde the low lying riverside margins become wider.

Landcover, Land Use and Settlement

- 12.4.22 Landcover throughout the Study Area is predominantly grassland and moorland with occasional large areas of woodland. In addition, there are smaller woodland belts, particularly around the loch shores and along the valley of the River Leven. Urban settlement within the Study Area is almost entirely confined to the River Leven valley extending from Balloch to Dumbarton some 7km to the south, on the banks of the River Clyde.
- 12.4.23 The five broad types of landcover and land uses within the Study Area are:
- Loch Lomond;
 - The tourist industry along the loch shores, comprising holiday accommodation, Loch Lomond Shores and golf courses. Much of the land cover within this area consists of woodland belts which screen views of the loch and hills beyond, except for where areas of high ground are visible above the vegetation;
 - Urban settlement along the river valley from Balloch to Dumbarton;
 - Moorland, which is generally open and only occasionally forested, located on the hill sides and higher ground either side of the loch and urban settlements; and,
 - Large areas of agricultural land, both arable and pasture, on the lower ground beyond the moorland and generally located towards the edge of the Study Area.
- 12.4.24 More detailed information on the value, susceptibility and sensitivity of the National Park is provided within **Appendix 12.3 - Landscape Character Assessment**. In summary, the value of the landscape within the Study Area as a whole is deemed to be very high, but this is locally reduced to high around the southern end of Loch Lomond where the built development, infrastructure and proximity to Balloch means that the landscape does not have the highly scenic, rugged and wild quality of the Park experienced further north. Similarly, whilst the

susceptibility of the whole Park to the proposed development is considered very high, the susceptibility of the landscape around the southern end of Loch Lomond is considered medium as the landscape is already affected by a similar development (Loch Lomond Shores), by road infrastructure and by housing at Balloch. Drumkinnon Woods is classed as ancient woodland, however photography of the site from the 1920s, '40s and '60s shows there to be only pockets of woodland on the site. Drumkinnon Woods appear to be well used by local residents, however from a visual perspective it appears to be in relatively poor condition.

- 12.4.25 The very high value combined with the very high susceptibility means that the overall sensitivity of the LLTTNP as a whole is considered to be very high. However, for the reasons explained above, the sensitivity of the site and its immediate setting is reduced to high.

Published Landscape Character Studies

- 12.4.26 The site lies just within the southern boundary of the LLTTNP and is covered by the strategic landscape character assessment for this area, a review of which was published in 2011 by SNH. The LLTTNP Landscape Character Assessment areas, published by SNH, cover the northern half of the Study Area as shown on **Figure 12.4** in **Appendix 12.1 – Figures** and provides a strategic assessment of the LLTTNP landscape. The south-east of the Study Area is covered by the Glasgow and Clyde Valley Landscape Character Assessment (1998), whilst the Argyll and the Firth of Clyde Landscape Character Assessment (1996), covers almost the entire Study Area. All three assessments have been produced for, and published by SNH. Because the boundaries of each of these assessments overlap one another, where the assessments cover the same landscape, the LLTTNP Landscape Character Assessment has been given prominence as the most recent of the assessments. Reference is made to the older assessments to help inform the description of the existing baseline.

Loch Lomond and The Trossachs Landscape Character Assessment (2011)

- 12.4.27 As shown in **Figure 12.4** in **Appendix 12.1 – Figures** most of the West Riverside site is located within the River Valley Farmland with Estates Landscape Character Type (LCT), whilst the eastern part of the site, along the west bank of the River Leven, is located in the Loch Shore Fringe LCT. The Woodbank House site is located within the Rolling Farmlands with Estates LCT, based on the LLTTNP Landscape Character Assessment.
- 12.4.28 In **Appendix 12.3 - Landscape Character Assessment** a detailed information and assessment sheet has been prepared for each of these four LCT (as well as for LLTTNP as a whole). Each sheet details the landscape's key characteristics, sensitivities and opportunities, using information from the LLTTNP Landscape Character Assessment. A judgement is also made about the value of the landscape and the susceptibility and sensitivity of the LCT to the proposed development. The judgements made are detailed in **Table 12.2** below:

Table 12.2 - Summary Judgements of Baseline Landscape Value, Susceptibility and Sensitivity (refer to Appendix 12.3)

Landscape Character Type	Value	Susceptibility	Sensitivity
River Valley Farmland with Estates	High	High	High
Loch Shore Fringe	High	High	High
Rolling Farmlands with Estates	High	Medium	High
Lowland Lochs	High	High	High

- 12.4.29 Other LCT within the Study Area and ZTV, which may be affected by the proposed development include Loch Lomond Islands (specifically the island of Inchmurrin) and the various types of Moorland (Open, Forested or Farmed) LCT. Site survey has deemed that due to the distance from the site and intervening visual screening, any landscape or visual effects experienced by

these LCT would be no more than negligible and therefore further detail and impact assessment on these LCT is not provided.

Glasgow and Clyde Valley Landscape Character Assessment (1998) and Argyll and the Firth of Clyde Landscape Character Assessment (1996)

12.4.30 The Glasgow and Clyde Valley Landscape Character Assessment (1998) covers the south-eastern part of the Study Area. The identified character areas within the Study Area and ZTV are:

- Loch Lomond: Rolling Farmlands Gartochan (LCA 4a);
- Loch Lomond: Moorland Hills and Ridges Bromley Muir – Carman Muir (LCA 19);
- Kilpatrick and Campsie Fells: Rugged Moorland Hills – Kilpatrick Hills (LCA 20b); and
- Kilpatrick and Campsie Fells: Green Corridors River Leven (LCA 9b).

12.4.31 With the Argyll and Firth of Clyde Landscape Character Assessment, a single landscape character area, the 'Firth of Clyde Lowlands' is within the 5km Study Area and it covers almost the entire Study Area overlapping both the LLTTNP and Glasgow and Clyde Valley character areas. Within the Study Area the 'Firth of Clyde Lowlands' is further categorised into different landscape types:

- Open Ridgeland (LCA 5);
- Moorland Plateau (LCA 8); and
- Rolling Farmland with Estates (LCA 13).

12.4.32 The identified landscape character areas within the Glasgow and Clyde Valley Landscape Character Assessment (1998) and Argyll and the Firth of Clyde Landscape Character Assessment (1996) are not considered further in this LVIA. This is due to:

- The pre-eminence given to the more up to date Loch Lomond and The Trossachs Landscape Character Assessment;
- Outside of the area covered by the LLTTNP there will be no direct landscape effects; and/or
- The lack of perceptibility of the site from the south as a whole and the distance of these LCA from the site, which means that any effects on the landscape would not be significant.

Special Landscape Qualities of Loch Lomond and The Trossachs National Park (2010)

12.4.33 This report was published by SNH to detail the special qualities of the LLTTNP¹⁷.

12.4.34 The SLQ are listed as a series of general qualities, which are applicable to the whole of LLTTNP, and a series of qualities relating to the different sub-areas. The sub-area relevant to this report is 'Loch Lomond'. By identifying a series of special qualities, the LLTTNP hopes to direct landscape change in order to pass on the appeal and value of the LLTTNP for future generations; and to help promote the area to residents, businesses and visitors.

12.4.35 From the report, the summary list of the general special qualities of the park is as follows:

- A world-renowned landscape famed for its rural beauty;
- Wild and rugged highlands contrasting with pastoral lowlands;
- Water in its many forms;
- The rich variety of woodlands;

¹⁷ 'In 2007/8 Scottish Natural Heritage used a standard method to determine the special qualities of Scotland's National Scenic Areas. In 2009, in partnership with the National Park Authorities, this work was extended to determine the special qualities of the two National Parks, including the National Scenic Areas within them. The result of the work for the Loch Lomond and the Trossachs National Park is reported here.'

Opening paragraph from Scottish National Heritage and Loch Lomond and The Trossachs National Park Authority (2010). The special landscape qualities of the Loch Lomond and The Trossachs National Park. Scottish Natural Heritage Commissioned Report No. 376.

- Settlements nestled within a vast natural backdrop;
- Famous through-routes;
- Tranquillity; and
- The easily accessible landscape splendour.

12.4.36 The summary list of the Loch Lomond area special qualities is:

- Immensity of loch and landscape;
- Two lochs in one;
- A multitude of beautiful islands;
- Distinctive mountain groups;
- Ben Lomond, widely known, popularly frequented;
- Banks of broadleaved woodland; and,
- Peaceful side glens.

12.4.37 These qualities, if relevant, have been considered within the detailed information and assessment sheet for the LLTTNP as a whole in **Appendix 12.3 - Landscape Character Assessment** and have also been used to inform the judgements of landscape sensitivity for the individual LCT.

12.4.38 At the request of the Landscape Officer of the LLTTNP authority, a table detailing the relevant SLQs, their relevance within the Study Area and description of the potential risks from the Proposed Development on the SLQs has been completed. This table is shown on pages 4 and 5 of **Appendix 12.3 - Landscape Character Assessment**. For each SLQ the assessment of the potential risk of loss or damage to the SLQ has been provided based upon the following six-point scale: no risk, negligible risk, low risk, moderate risk, high risk and very high risk.

Valued Areas and Sensitive Receptors

12.4.39 GLVIA 3 (paragraph 5.47) states that:

'Landscapes that are nationally designated will be accorded the highest value in the assessment. If the area affected by the proposal is on the margin of [as this development is] or adjacent to such a designated area, thought may be given to the extent to which it demonstrates the characteristics and qualities that led to the designation of the area. Boundaries are very important in defining the extent of designated areas, but they often follow convenient physical features and as a result there may be land outside the boundary that meets the designation criteria and land inside that does not.'

12.4.40 Under 'International and national designations' GLVIA 3 (paragraphs 5.23 and 5.24) explains that:

'...it is important that the baseline study should seek to understand the basis for the designation and why the landscape is considered to be of value. Great care should be taken to understand what landscape designations mean in today's context. This means determining to what degree the criteria and factors used to support the case for designation are represented in the specific Study Area.'

...sometimes, at the more local scale of an LVIA Study Area, it is possible that the landscape value of that specific area may be different from that suggested by the formal designation... At the same time it should be recognised that every part of a designated area contributes to the whole in some way and care must be taken if considering areas in isolation.'

12.4.41 The positions from GLVIA 3 outlined above are supported by the Loch Lomond and Trossachs National Park State of the Park (2005) under the title 'Landscape Designations' which states that it is recognised that some parts of the Park are of higher scenic quality than others.

Designated Landscapes (in addition to the LLTTNP)

- 12.4.42 Valued areas reflected in designations often cross character type boundaries; therefore, to assess the overall effects, the total area of the designation needs to be considered as a whole. Relevant designations are mapped on **Figure 12.5** in **Appendix 12.1 – Figures**, and described in the following text.
- 12.4.43 Landscape and landscape related designations, excluding the LLTTNP, which fall within the ZTV and 5km Study Area and are considered to be of high value are:
- Loch Lomond National Scenic Area (NSA);
 - Kilpatrick Hills Local Landscape Area (LLA);
 - Balloch Castle earthworks Scheduled Monument;
 - Cameron House cairns Scheduled Monument;
 - Inchmurrin Castle, castle and kiln-barn (on Inchmurrin Island) Scheduled Monument; and
 - Boturich Woodlands SSSI.
- 12.4.44 There are several Ancient Woodlands located within the Study Area, including Drumkinnon Woods which would be directly affected by the proposed development. Other woodlands are found scattered throughout the Study Area. The assessment of the effects on ancient woodland from an ecological perspective is provided in **Chapter 6: Ecology and Woodland**. The effects of the proposed development on Woodbank House as a landscape feature forms part of the LVIA for the site.
- 12.4.45 The landscape value of the Ancient Woodland within the site is deemed to be medium. Its susceptibility to the proposed development is considered high and its overall sensitivity is also considered to be high. Impacts on the woodland are considered within the LVIA for the site.
- 12.4.46 No areas of panoramic quality are in the ZTV and Study Area (note that only the data for Argyll and Bute was accessible) and there are no Conservation Areas within the ZTV and 5km Study Area.
- 12.4.47 The site is not within a Conservation Area and neither does it directly affect a statutorily listed building or building of local interest (excluding Woodbank House). Woodbank House is a dilapidated Grade A listed building which lies within the site, the restoration of which forms part of the proposals. The assessment of the effects on Woodbank House from a heritage perspective is provided in **Chapter 13: Archaeology and Heritage**. The effects of the proposed development on Woodbank House as a landscape feature forms part of the LVIA for the site.

Designated Landscapes – Loch Lomond National Scenic Area

- 12.4.48 The southern boundary of the Loch Lomond NSA is approximately 1km north of the site's northern boundary and is the only NSA within the Study Area. There is a strong overlap between the Loch Lomond landscape area and the boundaries of the Loch Lomond NSA and the special qualities of the Loch Lomond NSA are considered by SNH to equate to the qualities of the Loch Lomond landscape area which have been listed previously in this chapter. These include the important and valued views of the Arrochar Alps, Ben Lomond and the Highlands.
- 12.4.49 The value of the landscape within the NSA is considered very high. Its susceptibility to the proposed development is also considered to be very high. Overall therefore the sensitivity of the Loch Lomond NSA to the proposed development is very high.

Designated Landscapes – Kilpatrick Hills Local Landscape Area

- 12.4.50 As noted in the Kilpatrick Hills Local Landscape Area: Statement of Importance¹⁸ The Kilpatrick Hills form a 'distinctive rugged upland landscape, inextricably linked with their surroundings: 'borrowed' views, unique and relatively accessible panoramas and a plethora of high quality

¹⁸ West Dunbartonshire Council, East Dunbartonshire Council and Scottish Natural Heritage (2015), Local Development Plan - Kilpatrick Hills Local Landscape Area: Statement of Importance

vistas, both to and from the Kilpatrick Hills, make the area key to defining the identity of nearby settlements and in providing a setting for nationally important landscapes’.

- 12.4.51 In addition to their importance in landscape terms, the Kilpatrick Hills are an important natural heritage and recreational resource, with a range of habitats, geodiversity sites and formalised access routes. The Kilpatrick Hills feature a network of nationally and locally important nature conservation sites of both biological and geological interest. Five Sites of Special Scientific Interest (SSSI) are found within the Kilpatrick Hills and much of the rest of the area has been designated as Local Nature Conservation Sites. These provide the SSSIs with a robust framework of buffers and habitat connectivity which contribute to safeguarding their viability and recognise the wildlife value of the Kilpatrick Hill’s open mosaic of habitats.
- 12.4.52 As a locally designated landscape, the value of the Kilpatrick Hills LLA is considered high. Its special qualities and overall character means that its susceptibility to the proposed development is also considered to be high. Overall therefore the sensitivity of the Kilpatrick Hills LLA to the proposed development is high.

Designated Landscapes – Scheduled Monuments Balloch Castle earthworks, Cameron House Cairns and Inchmurrin Castle, castle and kiln-barn

- 12.4.53 The scheduled monuments at Cameron House cairns, located 850m and 1.2km west of the site, and Inchmurrin Castle, castle and kiln-barn, located 4km north of the site on Inchmurrin Island, are on the very edge of the potential ZTV for the tallest proposed building in the development. There is substantial tree cover around all of these scheduled monuments.
- 12.4.54 The Balloch Castle earthworks scheduled monument is approximately 250m east of the proposed loch-shore site at its nearest point. The western half of the earthworks (i.e. closest to the development) are heavily wooded and provide screening towards the site.
- 12.4.55 The assessment of the effects on the scheduled monuments from an historic perspective is provided in **Chapter 13 Archaeology and Heritage**. Given the distance from the site and the fact that there is little inter-visibility between the site and the scheduled monuments any potential landscape effects would not be significant. They are therefore not considered further in this LVIA.

Designated Landscapes – Boturich Woodlands SSSI

- 12.4.56 There is one SSSI in both the 5km Study Area and the ZTV, Boturich Woodlands SSSI on the east bank of Loch Lomond, the southern end of which is 1.3km north of the site.
- 12.4.57 The SSSI is a 2.7km long woodland on the banks of Loch Lomond the southernmost 600m of which is within the ZTV. The value of the SSSI is deemed to be medium, its susceptibility to the development low and its overall sensitivity is assessed as low. Due to the lack of direct impacts and distance from the site the likely LVIA impacts on the SSSI are likely to be negligible. Potential effects on the SSSI from an ecological perspective are to be considered within **Chapter 6: Ecology and Woodland** of this ES. In these circumstances, with the likely landscape and visual effects on the SSSI being negligible, there will be no further reference to the SSSI within the LVIA.

Gardens and Designed Landscapes

- 12.4.58 **Figure 12.5** in **Appendix 12.1 - Figures** shows that there are two gardens and designed landscapes (GDL) of relevance to the LVIA. These are gardens which are set out in the Inventory of Gardens and Designed Landscapes managed by Historic Environment Scotland.
- 12.4.59 Balloch Castle GDL is situated with the eastern side of the Study Area on the opposite side of the River Leven from the site, close to where the river flows out of the loch. Balloch Castle is a 19th century gothic style castle, which was erected on the site of a much earlier structure. The building is on the Buildings at Risk Register and is a Category A listed building. The wider estate which includes pleasure gardens, a walled garden, and an area of grassed parkland with mature trees, all of which are framed by ornamental and semi-natural woodlands, is designated a country park with nature trails and guided walks. Leased to West Dunbartonshire Council, the castle is now derelict, but the park is a popular local visitor attraction. The western boundary of the Balloch Castle GDL is approximately 55m from the eastern boundary of the site on the opposite side the River Leven at the point where the river flows out of the loch. However,

this is a wooded area and the paths around the GDL are generally located between 400-800m from the proposed apart-hotel and visitor centre development. It is further noted that the key views from the GDL are all orientated west to north and not south towards the development.

- 12.4.60 As a designated landscape on the shores of Loch Lomond and within LLTTNP, the value of the Balloch Castle GDL is considered high. Its special qualities and overall character means that its susceptibility to the proposed development is also considered to be high. Overall therefore the sensitivity of Balloch Castle GDL to the proposed development is high.
- 12.4.61 Rossdhu House and its surrounding parkland is situated on the west shore of Loch Lomond, some 3km north of Balloch. The surrounding landscape of loch and islands, with its backdrop of hills, is important to the designed landscape. Views into the park from the landward side are limited by the high walls and vegetation but Rossdhu is an attractive landscape feature from the loch.
- 12.4.62 Rossdhu House, a three-storey classical mansion built in 1773, was home to the chief of the clan Colquhoun, and replaced a castle they had occupied since the 15th century. It is now listed Category B. In 1994, Rossdhu was opened as Loch Lomond Golf Club and is now also a popular wedding venue. Rossdhu House GDL is located 5.4km north-north-west of the site at its closest point. This GDL lies just outside the Study Area, but most of the designated area falls within the bare-earth ZTV for the proposed development. Due to the distance of Rossdhu House GDL and the presence of intervening screening vegetation the proposed development would not have a significant effect on Rossdhu House GDL. It is therefore not considered further in this LVIA.

Settlements and Groups of Properties

- 12.4.63 The closest settlement to the site is the town of Balloch, the northern end of which encloses the southern boundary of the site. To the south, the settlement of Balloch merges with Alexandria and the continuous urban settlement along the River Leven to Dumbarton 7km south of the site. This belt of settlement and associated woodland and trees, would largely screen the development from potential receptors. There are no other settlements within the Study Area or within the ZTV.
- 12.4.64 For assessment purposes, within the town of Balloch the settlement has been divided into the following groupings of properties:
- Old Luss Road (near and adjacent to the Woodbank House site);
 - Upper Stoneyrollan (high ground to the west of Balloch);
 - Inchcruin and Clairinsh (settlement enclosed by Drumkinnon Woods and the proposals);
 - Properties on or near Pier Road, Balloch Road and Balloch Bridge;
 - Mill of Haldane (high ground to the east of Balloch); and
 - Remainder of Balloch.
- 12.4.65 Although there are other small groups of properties within the 5km Study Area, particularly around the A82 along the western side of Loch Lomond, none are within or close to the edge of the ZTV. Any potential views from these properties are likely to be highly filtered and potentially only available from the upper floors. Given the distance involved, any effects would not be significant therefore these properties are not considered further in the LVIA.
- 12.4.66 All the identified settlements and residential properties are deemed to be high sensitivity receptors. However, this sensitivity is reduced if the development is potentially only visible from the upper floor of properties i.e. where the residents will likely spend less time; and it is reduced where other visible built form occupies the landscape between the proposed development and the receptor.

Recreation, Leisure, Tourist Attractions and Business

- 12.4.67 The main recreation, leisure and tourist attraction within the Study Area is the National Park and the opportunities for both active and passive recreation that it offers such as the loch cruises; mountain climbing (e.g. although outside the ZTV Ben Lomond is 20km north of the site and has wide panoramic views; Shantron Hill, 7.5km north-west of the site, has been included as a

viewpoint to ascertain the potential impact of the development on the higher ground north of the site); the loch islands; and holiday accommodation, particularly around the edge of the loch.

- 12.4.68 Golf courses are an important recreational resource and include Cameron House Golf Course (and associated development including holiday lodges, restaurant and hotel), The Carrick Golf Club and Spa, and, just outside the Study Area, Loch Lomond Golf Club (at Rossdhu House). Although the courses are within the ZTV the woodland belts around and within the courses, and along the banks of the loch, mean there is only limited, heavily screened, visibility of the site.
- 12.4.69 Lomond Woods Holiday Park is located on rising ground adjacent to the southern boundary of the Woodbank House site and approximately 650m south-west of the proposed location for the apart-hotel and visitor centre development.
- 12.4.70 Adjacent to the loch shores development site is Loch Lomond Shores, which includes Drumkinnon Tower and is a mixed-use retail complex which includes visitor attractions such as a Sea Life Centre, cinema, shopping and restaurants.
- 12.4.71 An important visitor attraction are the walks and cycle paths within the LLTTNP. The main walks close to the site are the John Muir Way coast-to-coast trail which crosses through the site from west to east; and the Three Lochs Way which commences within the site boundary and runs through the site eventually heading west adjacent to the Woodbank House site. The main cycle routes are National Cycle Route No. 7 (Loch and Glens North) to the south and east of the site, and Regional Route No. 40 from the west of the site along the western banks of the loch. Effects on the visual amenity for users of these routes are considered below in paragraphs 12.7.55 to 12.7.58. Further details and assessments of likely effects on recreational routes both within the site and the 5km Study Area are provided in **Chapter 14 - Socio-Economics, Tourism, Recreation and Public Access**.
- 12.4.72 Due to the importance of the southern end of Loch Lomond as a visitor and tourist attraction and the importance of the visual amenity of the loch and views to the loch and from the loch shore, the susceptibility of visitors to the recreation, leisure and tourist attractions is deemed to be high. However, susceptibility of visitors to the Lomond Shores Complex is deemed to be medium as much of the activity is indoors and not focused on the visual amenity of the location.
- 12.4.73 The value of the view experienced by these recreational receptors varies depending on the particular viewpoint, as recorded in **Appendix 12.4 - Viewpoint Assessment** and referenced in **Tables 12.5 - 12.8** below. The susceptibility of recreational receptors is generally considered high, but does vary as outlined in **Appendix 12.4 - Viewpoint Assessment**. The sensitivity therefore varies depending on the value of the view and is recorded in **Appendix 12.4 - Viewpoint Assessment** and referenced in **Tables 12.5 - 12.8**.
- 12.4.74 Other businesses to be considered within the LVIA and not identified elsewhere within the baseline have been identified as follows:
- Hotels, Restaurants and Bars on Balloch Road near Balloch Bridge; and,
 - Hotels, Restaurants and Bars near Balloch Road / Old Luss Road roundabout.
- 12.4.75 Although the visual amenity of Loch Lomond brings tourists to the area, the majority of users of the hotels, restaurants and bars around Balloch will, by definition, be indoors and generally in locations where views of the loch and the wider landscape are not possible as none of the premises identified have direct and open views of the loch.
- 12.4.76 The value of the view experienced by these recreational receptors varies depending on the particular viewpoint, as recorded in Appendix 12.4 'Viewpoint Assessment' and referenced in **Tables 12.5 - 12.8** below. The susceptibility of these business receptors is considered medium. The sensitivity therefore varies depending on the value of the view and is recorded in **Appendix 12.4 - Viewpoint Assessment** and referenced in **Tables 12.5 - 12.8**.

Transport Corridors

- 12.4.77 The A82 is a key tourist route along the west of Scotland to the LLTTNP and the Highlands to the north. It passes approximately 200m west of Woodbank House and approximately 725m west of the proposed location of the apart-hotel and visitor centre. The other main route within the Study Area and ZTV is the A811 (Sterling Road), which leaves the A82 approximately 200m

south of the Woodbank House site and runs east through the town of Balloch to the south of the site, before turning north-east. Minor local roads to be assessed include Old Luss Road and Ben Lomond Way.

- 12.4.78 Other roads identified within the Scoping Opinion, such as the A81, B837 and West Highland Way are now outside the ZTV and/or the revised 5km Study Area.
- 12.4.79 With the exception of users of the A82 tourist route, the sensitivity of all road users is considered low as views would be fleeting and in the context of driving on busy roads with views of the development within the wider built form of Balloch. Tourists using the A82 are considered to be medium sensitivity receptors. Details of the sequential travel along these roads is provided in the 'Visual Effects on Transport Users' section of this chapter found in paragraphs 12.7.59 to 12.7.67.
- 12.4.80 The North Clyde Rail Line terminates at Balloch Train Station approximately 40m south of the southern boundary at the proposed Station Square site. No views of the development will be possible for rail users and therefore they are not considered further within this LVIA.

Baseline Visibility

- 12.4.81 The topography of the Study Area (**Figure 12.2 in Appendix 12.1**) and the ZTV (**Figure 12.3 in Appendix 12.1**) broadly explains the inter-visibility of the site area with its surroundings. The local topography, large areas of woodland and the settlements of Balloch and Alexandria to the immediate south of the site, are fundamental controlling factors for inter-visibility.
- 12.4.82 Excluding receptors directly adjacent to the site, the site is almost entirely screened from receptors to the south. An exception is a small pocket of land, on slightly higher ground than the majority of the site, within the western boundary at the Woodbank House location. However, even visibility of this area is heavily screened by woodland both on and outside the site. Although the site is generally not visible from the south, the proposed height of the apart-hotel and visitor centre buildings mean that from a limited number of locations these buildings may be visible, however the existing Drumkinnon Tower provides a very good indication of the lack of perceptibility of the site from the wider Study Area.
- 12.4.83 Existing woodland belts on the western and eastern banks of the loch, screen and filter views towards the site from much of the low-lying ground around the loch. Where there are occasional areas of open shoreline then there is a degree of inter-visibility between the site and the loch shore. As the landform rises to the east and west of the loch, the extensive swathes of woodland around the loch contain many views and limit the visibility of the site from much of its surroundings.
- 12.4.84 Inter-visibility with the site would be possible from the southern end of the loch (e.g. from boats on the loch) and at the loch shore immediately adjacent to the proposed site for the apart-hotel and visitor centre.

Site inter-visibility zones

- 12.4.85 Within the overall site there are four distinctive areas with different potential levels of visibility:
- The main loch-shore development comprising the apart-hotel and visitor centre. This area will primarily be visible from the loch and loch shore adjacent to the site. The height of the proposed buildings would result in occasional visibility from further afield. This area relates to Zone C: Pierhead of **Figure 3.1 – Parameters Plan**.
 - The 'Station Square' development comprising the micro-brewery, restaurant, monorail station, performance area and budget accommodation. This area is located adjacent to Balloch Road and the development would potentially be visible from areas of Balloch in the immediate vicinity of the site. This area relates to Zone A: Station Square of **Figure 3.1 – Parameters Plan**.
 - The woodland development comprising the holiday lodges and associated structures within the existing Drumkinnon Woods. Despite some proposed thinning works the woods would still provide a high level of visual screening. Visual impacts from the proposed woodland

lodges within this location are anticipated to be minimal. This area relates to Zone B: Riverfront and Zone D: Drumkinnon Wood and Bay of **Figure 3.1 – Parameters Plan**.

- The Woodbank House site is located on rising ground at the west of Balloch, this location is potentially more visible than the remainder of the site. However it too is heavily screened by intervening vegetation, both on and outside the site. This area relates to Zone E: Woodbank of **Figure 3.1 – Parameters Plan**.

12.4.86 Within the site and its surrounding area, inter-visibility of the site and its different components (as listed in the previous paragraph) is unlikely due to the presence of intervening woodland and buildings. For instance, where views of 'Station Square' are feasible it is unlikely that views of the Woodbank House site are possible and vice versa. Therefore, a decision has been made to differentiate between these four zones within the visual amenity assessment provided in this chapter of the ES.

12.4.87 An exception to this is within Zone D: Drumkinnon Wood, where the proposed re-development of the Woodbank House boathouse is considered as a distinct development with potentially distinct visual impacts. This is due to its location at the edge of woodland on the loch shore at the north of Drumkinnon Bay. This location means that the proposed re-development of the boathouse is in a unique position within Drumkinnon Wood, which is potentially visible for users of the loch itself and other receptors along the shore of the loch, unlike the majority of development within the woodland. In addition the proposed re-development of the boathouse may potentially be visible from positions where the main loch-shore development would also be visible e.g. from Balloch Castle. As the proposed boathouse is only a single small building it has not been given its own zone, but reference is made to it within the viewpoint assessment sheets and visual amenity assessment wherever it would be visible.

Summary of Receptor Sensitivity

12.4.88 The sensitivity of the different receptors, identified in **Section 12.4 – Baseline Conditions**, to the proposed development is listed below in **Table 12.3**. As explained above the sensitivity of landscape and visual receptors is made up of judgements about the susceptibility of the receptor to the type of change arising from the proposed development and the value attached to the landscape or view under consideration (as defined by the baseline study).

Table 12.3 - Summary of Receptor Sensitivity

Landscape & Visual Receptors Within the 5km Study Area and ZTV	Sensitivity to the Proposed Development
The Site (including Drumkinnon Woods)	High
Loch Lomond and The Trossachs National Park	Very High
River Valley Farmland with Estates LCT	High
Loch Shore Fringe LCT	High
Rolling Farmland with Estates LCT	High
Lowland Lochs LCT	High
Loch Lomond National Scenic Area	Very High
Kilpatrick Hills Local Landscape Area	High
Gardens and Designed Landscapes – Balloch Castle	High
Settlement – Old Luss Road (Balloch)	High

Landscape & Visual Receptors Within the 5km Study Area and ZTV	Sensitivity to the Proposed Development
Settlement – Upper Stoney-mollan (Balloch)	High
Settlement – Inchcruin and Clairinsh (Balloch)	High
Settlement – Pier Road, Balloch Road and Bridge (Balloch)	High
Settlement – Mill of Haldane (Balloch)	High
Settlement – Balloch (remainder of settlement)	High
Cameron House and associated development (including grounds, golf course and holiday lodges)	High
The Carrick Golf Club and Spa	High
Lomond Woods Holiday Park	High
Loch Lomond Shores	Medium
Hotels, Restaurants and Bars on Balloch Road near Balloch Bridge	Low
Hotels, Restaurants and Bars near Balloch Road / Old Luss Road roundabout	Low
John Muir Way Coast to Coast Trail	High
The Three Lochs Way	High
National Cycle Route No. 7	High
Regional Cycle Route No. 40	High
A82 (key tourist route)	Medium
A811	Low
Old Luss Road	Low
Balloch Road	Low
Ben Lomond Way	Low

12.5 Baseline Evolution

- 12.5.1 In the absence of the proposed development it is likely that the woodland areas would continue maturing and evolving as they have done over recent years. It is also likely that the Woodbank House area of site, including the remains of the Grade A listed Woodbank House hotel, would become more overgrown and dilapidated in appearance.

- 12.5.2 Notwithstanding the above, as detailed in **Chapter 5 – Legislative and Policy Context**, the site is allocated within the adopted LLTNP LDP (2016) under Balloch proposals VE1 and VE4 for visitor experience related uses. It can therefore reasonably be assumed that in the absence of the proposed development then another development proposal involving built form and changes to land use and land cover may be proposed.

12.6 Embedded Mitigation

- 12.6.1 As detailed in **Chapter 3 – The Proposed Development**, a number of design features and embedded mitigation measures have been incorporated into the design and construction of the proposed development to avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effects. Embedded mitigation measures of relevance to this assessment are:

Construction Phase

- 12m buffer (i.e. no construction) around the site boundary with Drumkinnon Gate;
- Any construction activities within a 5m strip along waterfronts will be subject to specific consideration within a Construction Environmental Management Plan (CEMP) to be agreed with LLTTNPA prior to commencement;
- Adherence to relevant (Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Environment Scotland (HES) regulatory and good practice guidance in construction methods;
- Adoption of standard construction industry working hours for noise generating activities;
- Safeguarding of identified important trees from disturbance or loss;
- Work with existing topography to minimise ground level regrading where possible;
- Proposed utilities to be located underneath existing path network to minimise disturbance to existing tree roots;
- Access to all key nodes and routes through the site are to be maintained during the construction phase. Localised diversions to facilitate construction may occur on land within the applicant's control. Any impacts on walking/cycle routes during the construction phase will be short term and localised diversions will be put in place;
- Continued provision of access through the site to existing receptors and land uses as identified in **Chapter 2 Site and Surrounding Area**; and
- Development and implementation of a CEMP, to include as a minimum, measures relating to: construction traffic routing, site access/deliveries, parking, contractor management, parking, fuels and materials storage, standard dust and noise suppression techniques and standard pollution presentation and control techniques. Any other measures to be included in the CEMP would be identified as 'further mitigation' (not embedded) through this ES (see **Section 8 of Chapters 6 – 15**).

Operational Phase

- 12m buffer (i.e. no operational activities) around the site boundary with Drumkinnon Gate;
- Screening increased around the boundary between woodland and residential area using evergreen native shrubs which are in-keeping with the surroundings, ensuring a decrease impact for the residents;
- Lower density of lodges to be located within the 'Plantation origin' of Drumkinnon woodland;
- Existing fenced substations and unsightly utilities to be screened and incorporated within the woodland setting;

- Proposed car parking to be sensitively incorporated into the woodland. Surface materials to be in keeping with the location and context. Additional mitigation measures such as buffer planting to provide natural screening to new car parking;
- Retain and upgrade existing pathways, enhance with new porous surfacing. Widen and locally regrade to allow for buggies, cycles and emergency access;
- New woodland planting to be created on the Woodbank plot, immersing proposed residential plots in order to reduce and mitigate any visual impact. Whilst acknowledging the need to retain the open views towards the facade of Woodbank House;
- Retention of Woodbank House listed building facade as a landmark feature;
- Continued public access to Drumkinnon Bay waterfront;
- Continued provision of access through the site to existing receptors and land uses as identified in **Chapter 2: Site and Surrounding Area**;
- Safeguarding of identified important trees within existing woodland areas, as identified on the **Figure 3.1 - Parameters Plan** in **Appendix 3.1**;
- No structures or buildings within woodland areas to exceed the height of the tree canopy;
- Integration of Station Square zone with Balloch Street Design Project proposals and Sweeney Cruises;
- Elevated sections of monorail to have sufficient clearance above roads and paths to allow for passage underneath; and
- Access to all key nodes and routes will be maintained during operation with the quality of some routes enhanced. Some permanent localised diversions may be required; however, this will be limited to using other land within the applicants control in order to avoid lengthy or circuitous alterations.

12.6.2 Further mitigation and enhancement measures identified through the EIA process and of relevance to this assessment are detailed in **Section 12.8** below before likely residual effects from the proposed development are detailed in **Section 12.9**. A cumulative impact assessment is then provided in **Section 12.11**.

12.7 Potential Effects

Overview

12.7.1 The sources of potential landscape and visual effects are as follows:

Construction Phase

12.7.2 The sources of potential landscape effects during construction are assumed to include site offices, storage and parking areas, temporary hoardings/ security fencing and signage and a range of fixed and mobile plant, which will include cranes. Other effects would arising from the construction process, namely:

- Site clearance and vegetation removal, particularly any 'thinning' works within Drumkinnon Woods, the Woodbank House area and the removal of the woodland area at the proposed location of the apart-hotel and visitor centre;
- Topsoil stripping and earthworks; and,
- Construction activities.

12.7.3 The Transport Assessment (which forms part of the application submission) will refer to construction traffic effects.

Operational Phase

12.7.4 The sources of potential landscape effects during operation are:

- Introduction of new large structures on the loch shore and elsewhere into the landscape;

- The permanent removal of some trees and vegetation within existing woodland ;
- The change of existing land cover and land use within the development area;
- An increase to the amount of existing lighting; and,
- An increase in visitor numbers and traffic movements.

12.7.5 The operation effects on visual amenity will be long-term and permanent. However, as with the construction impacts the lack of perceptibility of the site from the wider area mean that these effects will typically only be experienced by receptors in close proximity to the development.

Assessment of Landscape Effects

12.7.6 The following section sets out a summary of the assessment of the effects of the proposed development on the landscape receptors identified above. It first considers the effects during construction and then those experienced during operation. Detailed assessment sheets for each of the key landscape receptor groups is provided in **Appendix 12.3 - Landscape Character Assessment**.

Construction Phase

12.7.7 As explained in paragraph 12.3.50 all construction effects are assumed to be adverse.

12.7.8 The construction of the proposed development would substantially change the character of the site and its immediate setting. The large scale of the construction works would change its current character, which would become more urban and substantially less tranquil due to the construction activity and additional traffic movements. Although there would be some vegetation removal, most of the trees within Drumkinnon Woods and within the Woodbank House area, which are a key landscape feature of the site, would remain. Removal would focus on invasive species and younger saplings at the edge of existing glade areas. There would be a high magnitude of change, which when combined with the high sensitivity would result in a Major effect, which would be short term and temporary.

12.7.9 Beyond the site and its immediate setting, the construction would be visible from various locations. The types of views would range from glimpsed views of the cranes to more immediate views comprising the site hoardings and construction works. However, with the exception of mature tree removal (which would be limited and subject to detailed survey work before construction began) these features would be short term and temporary. Construction works would be strictly controlled and monitored through the construction process. The only LCT or designated landscapes which would experience a noticeable construction effect are the Loch Shore Fringe, Rolling Farmland with Estates and River Valley Farmland with Estates. This is because these LCT cover a part of the site and therefore would be directly and indirectly affected by construction activity. A Moderate landscape effect is predicted during construction works for these three LCT, however this would be very localised, short term and temporary with most of the landscape within the LCT experiencing Negligible or Minor effects. Due to the scale of the LLTTNP it is not considered that the proposed construction works would create more than a Minor effect on the landscape of the LLTTNP. Indirect effects on the adjacent Lowland Lochs LCT are considered to be Minor. Reasoning for these assessments is provided in **Appendix 12.3 – Landscape Character Assessment**.

Operational Phase

The site and its immediate setting

12.7.10 The proposed development would appear similar in scale to the existing Lomond Shores complex. Its presence would not fundamentally change the key characteristics of the site or its immediate setting and would generally fit well with the scale and character of the landscape. There would be some permanent tree losses particularly near the loch side (on the proposed site for the apart-hotel) but this would be balanced by a new landscape scheme which could provide an overall enhanced setting to the existing development. In addition there would be compensatory tree planting resulting in no net loss of tree numbers. The presence of timber lodges and a woodland walkway within Drumkinnon Wood would change its character but the

associated vegetation management would improve the appearance of the woodland in the longer term. The monorail would appear as a new type of feature which would be less in keeping with the character and would introduce additional elevated movement.

- 12.7.11 There would be a medium magnitude of change, which when combined with the high sensitivity would result in a Moderate Adverse effect. Whilst aspects of the proposed development would have a neutral or even positive effect on the landscape, the monorail would be out of keeping and have an adverse effect on character.

Loch Lomond and the Trossachs National Park

- 12.7.12 Part of the site lies within the southern extent of LLTTNP which would therefore be directly and indirectly affected by the proposed development. The presence of the proposed development would add to the man-made development at the southern end of the Park but would not affect the wider rural character or change its special qualities. The low magnitude of change when combined with the very high sensitivity would result in a Moderate Adverse effect on the landscape within the immediate vicinity of the proposed development. However, for the majority of the LLTTNP any effects would be imperceptible. Therefore, when considered as a whole, the LLTTNP would experience a Minor Adverse effect.

- 12.7.13 An assessment of likely risks to the Special Landscape Qualities (SLQ) of the LLTTNP is provided in **Appendix 12.3 – Landscape Character Assessment**. A summary of that assessment is presented in **Table 12.4** below. As per guidance from the LLTTNP the potential risk of loss or damage to the SLQ was provided based upon the following six point scale: no risk, negligible risk, low risk, moderate risk, high risk and very high risk. Localised effects on relevant SLQ were considered as well as the effects on the SLQ overall.

Table 12.4 - Summary of Likely Effects on the Special Landscape Qualities of the LLTTNP

Special Landscape Qualities of LLTTNP Summary of Likely Effects		
Special Landscape Qualities Identified	Risk of loss or damage to localised SLQ within and adjacent to the site boundary	Risk of loss or damage to overall SLQ
Relevant General Qualities		
A world renowned landscape famed for its rural beauty	Moderate risk	Negligible
Water in its many forms	Negligible	No risk
Settlements nestled within a vast natural backdrop	Low risk	Negligible
Famous through-routes	Low risk	Negligible
The easily accessible landscape splendour	Negligible	Negligible
Relevant Particular Area Qualities of Loch Lomond		
Immensity of loch and landscape	No risk	No risk

Special Landscape Qualities of LLTTNP Summary of Likely Effects		
Special Landscape Qualities Identified	Risk of loss or damage localised within and adjacent to the site boundary	Risk of loss or damage to overall SLQ
Two lochs in one 'The Lowland Lake'	No risk	No risk
Banks of broadleaved woodland	Moderate risk	Low risk

12.7.14 In summary two moderate risks to the SLQ of the Park have been identified. Both of these moderate risks are localised and would not affect the SLQ for the Park overall.

12.7.15 The moderate risks relate to:

- Relevant General Qualities – A world renowned landscape famed for its rural beauty

From the very southern end of the loch, the proposed development would be prominent and contrast within the existing view. In particular the development would adversely impact the important view north from Drumkinnon beach and Loch Lomond Shores along the length of Loch Lomond.

- Relevant Particular Area Qualities of Loch Lomond – Banks of broadleaved woodland

As a result of the development the recent woodland planting between the beach area and Duncan Mills Slipway at the southern end of the loch would be felled. There would also be some thinning works within the older woods at Drumkinnon Wood and Woodbank House, although these areas are set back from the loch shores. For receptors viewing south towards the development the loss of woodland would not be visually significant, as the majority of existing woodland would remain in place and still be visible as a backdrop to the loch shore. However, an area of woodland which contributes to this SLQ would be lost. The necessary small loss of woodland would create a localised moderate risk to the SLQ, although it is noted that overall there would remain a strong perception of banks of broadleaved woodland around the southern end of the loch.

Landscape Character Types (LCT)

12.7.16 Three LCT (Loch Shore Fringe, Rolling Farmland with Estates and River Valley Farmland with Estates) would experience a Moderate operational effect, in the vicinity of the development site. This is because these LCT all cover a part of the site and therefore would be directly and indirectly affected by the proposed development. The presence of the proposed development would add to the man-made development within these LCT but would not affect the wider rural character. The low magnitude of change when combined with the high sensitivity would result in a localised Moderate effect on the landscape. This effect would be localised within the immediate vicinity of the proposed development, with most of the landscape within the LCT experiencing a Negligible effect or remaining unaffected. Overall therefore the operational landscape effects on these three LCT are assessed as Minor Adverse.

12.7.17 Elsewhere within the Study Area the presence of Lomond Shores, which is a similar type of development, would mean that the proposed development appears as an extension of the existing development rather than a completely new landscape feature. Additional tourism and leisure-led mixed-use development would not fundamentally change the key characteristics of the different landscapes or landscape designations and would generally integrate well into its surroundings. The magnitude of change would be low and the overall effect Minor Adverse or

Negligible Adverse as explained in the relevant assessment sheets provided in **Appendix 12.3 – Landscape Character Assessment**.

Loch Lomond National Scenic Area (NSA)

- 12.7.18 This NSA covers most of Loch Lomond and the high ground immediately adjacent to the loch. Only the southern end of the loch is excluded from the NSA, possibly due to the more developed character of this area. Any effects on the NSA would be indirect.
- 12.7.19 The only parts of the NSA, which are inter-visible with the site are a very small area of land north of Balloch Castle GDL, Inchmurrin Island (over 4km north of the site) and receptors on the loch itself (although the NSA boundary is 1km north of the loch shore).
- 12.7.20 From the NSA the proposed development would appear as an extension of the existing Loch Lomond Shores development rather than a completely new landscape feature. The presence of additional tourism and leisure-led mixed use development would not change the key characteristics of the landscape within the NSA, or the visual amenity of visitors to the NSA. The magnitude of change on the landscape of the NSA would be negligible which, despite the very high sensitivity of the NSA, would give rise to a Negligible Adverse indirect effect.

Kilpatrick Hills Local Landscape Area (LLA)

- 12.7.21 The only parts of the Kilpatrick Hills LLA, which are inter-visible with the site is the north-western edge of the LLA, which lies some 1.8km from the site. Any effects on the LLA would be indirect.
- 12.7.22 From the Kilpatrick Hills LLA the proposed development would appear as an extension of the existing Loch Lomond Shores development rather than a completely new landscape feature. The presence of additional tourism and leisure-led mixed use development would not change the key characteristics of the landscape within the LLA, or the visual amenity of visitors to the LLA. The magnitude of change on the landscape of the LLA would be negligible which, despite the high sensitivity of the LLA, would give rise to a Negligible Adverse indirect effect.

Balloch Castle Garden and Designed Landscape (GDL)

- 12.7.23 Balloch Castle GDL would be relatively close to the proposed apart-hotel and visitor centre which may give rise to some landscape effects. Viewpoints 14 (Proposal Beach) and 17 (Balloch Castle) both illustrate that the apart-hotel and visitor centre (and potentially the monorail) would be visible from within the GDL. However, it is noted that they would be visible in the context of the existing Drumkinnon Tower and would be substantially screened by intervening woodland.
- 12.7.24 From the Balloch Castle GDL the proposed development would appear as an extension of the existing Loch Lomond Shores development rather than a completely new landscape feature. The presence of additional tourism and leisure-led mixed-use development would not change the key characteristics of the landscape within the GDL. The magnitude of change would be low which when combined with the high sensitivity of the GDL would give rise to a Minor Adverse indirect effect on Balloch Castle GDL.

Assessment of Visual Effects

Viewpoint Analysis

- 12.7.25 The viewpoint assessment includes 21 representative viewpoint locations, each of which is fully described in **Appendix 12.4 – Viewpoint Assessment**. A description of the baseline and the predicted changes to the view as a result of the proposed development is provided together with a baseline photograph.
- 12.7.26 For nine viewpoints, massing studies and wireframes have been provided. These are based on outline designs for the proposed development and are therefore only approximations of the proposed location and likely outline/mass of the buildings, they are not intended to be photo-realistic visualisations because the proposal is not yet at the detailed design stage. These are presented in **Appendix 12.5 – Viewpoint Massing Studies and Wirelines**.

- 12.7.27 **Appendix 12.6 – Additional Viewpoint Plates** includes a further 19 panoramic photographs taken from around the site and Study Area. It is important to emphasise that these viewpoints have not been assessed and no text is provided. They are provided to help the reader understand the perceptibility of the site from these locations and within the descriptions of travel around the site via local roads and the John Muir Way and Three Lochs Way trails.
- 12.7.28 **Appendix 12.4 – Viewpoint Assessment** includes a detailed assessment of the specific effects on the viewpoints in accordance with the landscape and visual methodology outlined in **Appendix 12.2 – Methodology**. For the purpose of the visual assessment, the proposed development is subdivided into four distinct zones, each of which is likely to give rise to different degrees of visual effect and will not always be simultaneously visible from every viewpoint. The proposed monorail links Station Square and the loch shore and is predominantly situated within Drumkinnon Woods. As explained above under 'Baseline Visibility' there are four distinct zones within the development with respect to the perceptibility of the site and potential visual impacts. These four zones are:
- Loch Shore Development (relating to Zone C: Pierhead of **Figure 3.1 – Parameters Plan**);
 - Drumkinnon Woods (relating to Zone B: Riverfront and Zone D: Drumkinnon Wood and Bay of **Figure 3.1 – Parameters Plan**);
 - Woodbank House (relating to Zone E: Woodbank of **Figure 3.1 – Parameters Plan**); and,
 - Station Square (relating to Zone A: Station Square of **Figure 3.1 – Parameters Plan**).
- 12.7.29 The proposed re-development of the Woodbank House boathouse is within Zone D: Drumkinnon Wood, however due to its location on a promontory away from the other development within Drumkinnon Wood it is considered as a distinct development with potentially distinct visual impacts. As the proposed boathouse is only a single small building it has not been given its own 'zone' for the purposes of detailed visual assessment, however reference is made to it within the viewpoint assessment sheets and visual amenity assessment whenever it would be potentially visible.
- 12.7.30 **Tables 12.5 – 12.8** provide a summary of the viewpoint assessment sheets completed within **Appendix 12.4 – Viewpoint Assessment**.
- 12.7.31 The visual effects of introducing the proposed development within the woodland and on the loch shore of a designated national park are generally considered to be adverse. However, it is recognised that the introduction of well-designed development on the Station Square location could be viewed as beneficial to the visual amenity of that area. Furthermore, the introduction of well-designed residential properties and accompanying landscape on the Woodbank House site could be viewed as improving the current run down appearance of this location.
- 12.7.32 All 21 viewpoints are located within LLTTNP, although viewpoints 12 and 18 are on the very southern boundary of the Park. Most of the viewpoints are representative of more than one type of receptor e.g. road users and residents. In these circumstances the sensitivity of the receptor with the highest sensitivity has been used within the assessment. Due to most of the receptors being either residents or tourists visiting the National Park, the sensitivity for the majority of viewpoints has been assessed as high.

Table 12.5 - Summary of visual effects, at the selected viewpoints, arising from the Loch Shore Development

Loch Shore Development							
VP	Location	Distance to Apart-Hotel	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
1	Ben Lomond Way	165m	High	High	Major	High	Major
2	Loch Lomond Shores	192m	High	High	Major	High	Major
3	Maid of the Loch Slipway	142m	High	High	Major	Medium	Moderate
4	Woodbank House	640m	Medium	Low	Minor	Negligible	Negligible
5	Cameron House Lodge, Old Luss Road	566m	Medium	Negligible	Negligible	Negligible	Negligible
6	Old Luss Road	560m	Medium	Low	Minor	Negligible	Negligible
7	Inchcruin Housing Estate	430m	Medium	Negligible	Negligible	Negligible	Negligible
8	John Muir Way, East Bank of River Leven	521m	High	Negligible	Negligible	Negligible	Negligible
9	Pier Road South	359m	Low	Negligible	Negligible	Negligible	Negligible
10	Balloch Road (Bridge over river)	660m	High	Negligible	Negligible	Negligible	Negligible

Loch Shore Development							
VP	Location	Distance to Apart-Hotel	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
11	A811, Balloch (Bridge over river)	834m	High	Negligible	Negligible	Negligible	Negligible
12	Upper Stoneymollan	1.1km	High	Medium	Moderate	Medium	Moderate
13	Roundabout near Laudervale Gardens (Old Luss Road / Balloch Road)	636m	Medium	Negligible	Negligible	Negligible	Negligible
14	The Boathouse Marina, near Cameron House Golf Course	768m	High	Medium	Moderate	Medium	Moderate
15	Proposal Beach, Balloch Country Park	610m	High	Medium	Moderate	Medium	Moderate
16	A82, North-West of Balloch	750m	Low	Low	Minor	Negligible	Negligible
17	Balloch Castle, Balloch Country Park	778m	High	Low	Minor	Low	Minor
18	Drumbain Road (Mill of Haldane)	1.7km	Medium	Negligible	Negligible	Negligible	Negligible
19	The Cruin Restaurant Jetty (near Arden House)	2.8km	High	Negligible	Negligible	Negligible	Negligible

Loch Shore Development							
VP	Location	Distance to Apart-Hotel	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
20	Inchmurrin Island	4.1km	High	Negligible	Negligible	Negligible	Negligible
21	Shantron Hill	7.5km	High	Negligible	Negligible	Negligible	Negligible

Table 12.6 - Summary of visual effects, at the selected viewpoints, arising from the Drumkinnon Woods Development

Drumkinnon Woods Development							
VP	Location	Distance to Woods	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
1	Ben Lomond Way	Boundary	High	Medium	Moderate	Low	Minor
2	Loch Lomond Shores	192m	High	Negligible	Negligible	Negligible	Negligible
3	Maid of the Loch Slipway	283m	High	Negligible	Negligible	Negligible	Negligible
4	Woodbank House	308m	Medium	Low	Minor	Negligible	Negligible
5	Cameron House Lodge, Old Luss Road	362m	Medium	Negligible	Negligible	Negligible	Negligible
6	Old Luss Road	161m	Medium	Negligible	Negligible	Negligible	Negligible
7	Inchcruin Housing Estate	130m	Medium	Low	Minor	Negligible	Negligible
8	John Muir Way, East Bank of River Leven	90m	High	Low	Minor	Low	Minor
9	Pier Road South	Within	Low	High	Moderate	High	Moderate
10	Balloch Road (Bridge over river)	152m	High	Low	Minor	Low	Minor

Drumkinnon Woods Development							
VP	Location	Distance to Woods	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
11	A811, Balloch (Bridge over river)	347m	High	Negligible	Negligible	Negligible	Negligible
12	Upper Stoneymollan	732m	High	Medium	Moderate	Low	Minor
13	Roundabout near Laudervale Gardens (Old Luss Road / Balloch Road)	251m	Medium	Low	Minor	Negligible	Negligible
14	The Boathouse Marina, near Cameron House Golf Course	925m	High	Low	Minor	Low	Minor
15	Proposal Beach, Balloch Country Park	700m	High	Low	Minor	Low	Minor
16	A82, North-West of Balloch	715m	Low	Negligible	Negligible	Negligible	Negligible
17	Balloch Castle, Balloch Country Park	810m	High	Low	Minor	Low	Minor
18	Drumbain Road (Mill of Haldane)	1.3km	Medium	Negligible	Negligible	Negligible	Negligible
19	The Cruin Restaurant Jetty (near Arden House)	3km	High	Negligible	Negligible	Negligible	Negligible
20	Inchmurrin Island	4.2km	High	Negligible	Negligible	Negligible	Negligible

Drumkinnon Woods Development							
VP	Location	Distance to Woods	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
21	Shantron Hill	7.5km	High	Negligible	Negligible	Negligible	Negligible

Table 12.7 - Summary of visual effects, at the selected viewpoints, arising from the Woodbank House Development

Woodbank House Development							
VP	Location	Distance to Woodbank House facade	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
1	Ben Lomond Way	593m	High	Negligible	Negligible	Negligible	Negligible
2	Loch Lomond Shores	498m.	High	Negligible	Negligible	Negligible	Negligible
3	Maid of the Loch Slipway	835m	High	Negligible	Negligible	Negligible	Negligible
4	Woodbank House	Within	Medium	High	Moderate	High	Moderate
5	Cameron House Lodge, Old Luss Road	322m	Medium	High	Moderate	High	Moderate
6	Old Luss Road	146m	Medium	High	Moderate	High	Moderate
7	Inchcruin Housing Estate	491m	Medium	Negligible	Negligible	Negligible	Negligible
8	John Muir Way, East Bank of River Leven	931m	High	Negligible	Negligible	Negligible	Negligible
9	Pier Road South	708m	Low	Negligible	Negligible	Negligible	Negligible
10	Balloch Road (Bridge over river)	904m	High	Negligible	Negligible	Negligible	Negligible

Woodbank House Development							
VP	Location	Distance to Woodbank House facade	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
11	A811, Balloch (Bridge over river)	945m	High	Negligible	Negligible	Negligible	Negligible
12	Upper Stoneyhill	436m	High	Low	Minor	Low	Minor
13	Roundabout near Laudervale Gardens (Old Luss Road / Balloch Road)	375m	Medium	Low	Minor	Negligible	Negligible
14	The Boathouse Marina, near Cameron House Golf Course	1km	High	Negligible	Negligible	Negligible	Negligible
15	Proposal Beach, Balloch Country Park	1.3km	High	Negligible	Negligible	Negligible	Negligible
16	A82, North-West of Balloch	660m	Low	Negligible	Negligible	Negligible	Negligible
17	Balloch Castle, Balloch Country Park	1.5km	High	Low	Minor	Low	Minor
18	Drumbain Road (Mill of Haldane)	2km	Medium	Negligible	Negligible	Negligible	Negligible
19	The Cruin Restaurant Jetty (near Arden House)	3.1km	High	Negligible	Negligible	Negligible	Negligible

Woodbank House Development							
VP	Location	Distance to Woodbank House facade	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
20	Inchmurrin Island	4.5km	High	Negligible	Negligible	Negligible	Negligible
21	Shantron Hill	7.5km	High	Negligible	Negligible	Negligible	Negligible

Table 12.8 - Summary of visual effects, at the selected viewpoints, arising from the Station Square Development

Station Square Development							
VP	Location	Distance to Proposed Site of Micro-Brewery	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
1	Ben Lomond Way	356m	High	Negligible	Negligible	Negligible	Negligible
2	Loch Lomond Shores	524m	High	Negligible	Negligible	Negligible	Negligible
3	Maid of the Loch Slipway	645m	High	Negligible	Negligible	Negligible	Negligible
4	Woodbank House	725m	Medium	Negligible	Negligible	Negligible	Negligible
5	Cameron House Lodge, Old Luss Road	834m	Medium	Negligible	Negligible	Negligible	Negligible
6	Old Luss Road	575m	Medium	Negligible	Negligible	Negligible	Negligible
7	Inchcruin Housing Estate	225m	Medium	Negligible	Negligible	Negligible	Negligible
8	John Muir Way, East Bank of River Leven	221m	High	Medium	Moderate	Medium	Moderate
9	Pier Road South	151m	Low	Negligible	Negligible	Negligible	Negligible
10	Balloch Road (Bridge over river)	206m	High	Very High	Major	High	Moderate

Station Square Development							
VP	Location	Distance to Proposed Site of Micro-Brewery	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
11	A811, Balloch (Bridge over river)	348m	High	Low	Minor	Low	Minor
12	Upper Stoneyhill	1.2km	High	Low	Minor	Low	Minor
13	Roundabout near Laudervale Gardens (Old Luss Road / Balloch Road)	428m	Medium	Negligible	Negligible	Negligible	Negligible
14	The Boathouse Marina, near Cameron House Golf Course	1.3km	High	Negligible	Negligible	Negligible	Negligible
15	Proposal Beach, Balloch Country Park	1km	High	Negligible	Negligible	Negligible	Negligible
16	A82, North-West of Balloch	1.1km	Low	Negligible	Negligible	Negligible	Negligible
17	Balloch Castle, Balloch Country Park	1km	High	Low	Minor	Low	Minor
18	Drumbain Road (Mill of Haldane)	1.3km	Medium	Negligible	Negligible	Negligible	Negligible
19	The Cruin Restaurant Jetty (near Arden House)	3.3km	High	Negligible	Negligible	Negligible	Negligible
20	Inchmurrin Island	4.4km	High	Negligible	Negligible	Negligible	Negligible

Station Square Development							
VP	Location	Distance to Proposed Site of Micro-Brewery	Sensitivity to the Overall Proposed Development	Construction		Operation – Year 1	
				Magnitude of change	Visual Effect	Magnitude of change	Visual Effect
21	Shantron Hill	7.5km	High	Negligible	Negligible	Negligible	Negligible

Summary of Viewpoint Analysis

- 12.7.33 No viewpoint was identified as experiencing Moderate or greater, medium to long term visual effects for more than one development zone. For the loch shore development, six of the 21 representative viewpoints are predicted to experience Moderate or Major Adverse construction and operation phase visual effects (viewpoints 1, 2, 3, 12, 14 and 15). For the Drumkinnon Woods development, only viewpoint 9 would experience Moderate adverse construction and operational effects. For the Woodbank House development three viewpoints would experience Moderate or Major adverse construction and operational effects (viewpoints 4, 5, and 6). For the Station Square development two viewpoints would experience Moderate or Major adverse construction and operational effects (viewpoints 8 and 10).
- 12.7.34 Due to its location the proposed development would generally be substantially screened from the surrounding area by woodland belts, existing buildings and landform, which would limit visual effects.
- 12.7.35 Typically, significant visual effects have only been identified where the proposed development would be seen at close range. In middle and long distance views, the appreciable screening afforded by intervening landform, woodland and occasional buildings would generally be effective in limiting visibility. In these instances, the proposed development would not be a very noticeable component of the view and would therefore be unlikely to give rise to effects at levels which would be significant. The exception to this is where the apart-hotel and visitor centre development on the loch shore is visible from further afield, namely Balloch Castle GDL, the boathouse marina near Cameron House and the rising ground at Upper Stoney-mollan.

Visual Effects on Recreational Receptors

- 12.7.36 **Loch Lomond and The Trossachs National Park** is a large area (1,865 km²) of rugged landscape, incorporating several lochs and mountains (including 21 Munros). The site is located within the very southern boundary of the Park. All the 21 representative viewpoints have been taken from within the Park. From almost the full entirety of the Park the proposed development would not be visible. There would be limited, heavily screened views of the construction activity and proposed development from a localised area directly adjacent to the proposed development. There may be occasional glimpsed views from boats at the southern end of the loch, Inchmurrin Island (4km to the north) and high ground further afield. The proposed development would not be a prominent feature within the view and the magnitude of change on views and the general visual amenity of the Park is considered to be negligible resulting in an overall Negligible Adverse effect during both construction and operation. However, there would be an occasional and highly localised medium magnitude of change in the view resulting in an occasional and highly localised Moderate Adverse effect during construction and operation.
- 12.7.37 **Loch Lomond National Scenic Area** is a large area focused around Loch Lomond, but excluding the southern tip of the loch. Its southern boundary is 1km north of the site at its closest point. Viewpoints 20 and 21 are located within the NSA. The construction activity and operation of the proposed development would not be a prominent feature within the NSA and the magnitude of change on views and the general visual amenity of the NSA is considered to be negligible, resulting in an overall Negligible Adverse effect during construction and operation.
- 12.7.38 **Kilpatrick Hills Local Landscape Area** is located to the south-east of the site. At its closest point it is approximately 1.9km east of the Station Square site and 2.4km east-south-east of the Loch Shore site. From the north-western boundary of the LLA there would potentially be glimpsed views of the construction activity and the taller elements of the proposed development. However, for the remainder of the LLA the construction activity and operation of the proposed development would be imperceptible. Overall the magnitude of change on views and the general visual amenity of the LLA is considered to be negligible resulting in an overall Negligible Adverse effect during construction and operation.
- 12.7.39 **Balloch Castle Garden and Designed Landscape** is located on rising land on the eastern loch shore to the east and north-east of the site. Within the GDL there are substantial areas of woodland which would screen views of the development, particularly from the loch shore. An exception along the loch shore in the GDL is the area around Proposal Beach (location of viewpoint 15) approximately 630m from the loch shore development. From here there would be direct but filtered views of the construction activity and the proposed development at the loch shore and the proposed re-development of Woodbank House boathouse. The rising landform

between Proposal Beach and Balloch Castle is less wooded and there would be views of the construction activity and the completed proposed development. From the higher ground around the castle (see viewpoint 17) there would be screened views of the loch shore development as well as the wider development, including the Station Square development, Woodbank House development and the Woodbank House boathouse. Overall the magnitude of change on views and the general visual amenity of the GDL is considered to be medium resulting in an overall Moderate Adverse effect which would be higher (but still within the Moderate category) for construction than operation.

Visual Effects on Groups of Residential Receptors

- 12.7.40 **Old Luss Road** is a group of approximately 12 properties at the north-western edge of Balloch on the old road leading to Cameron House. The properties are located next to the proposed Woodbank House development. For those properties closest to Woodbank House (see viewpoint 6) there would be direct and generally open foreground and middle distance views of the construction activity and proposed development. The other areas of the proposed development (loch shore, Station Square and Drumkinnon Woods) would be screened from view by intervening vegetation and buildings. An exception would be the proposed service buildings located within the western extents of Drumkinnon Wood and in fairly close proximity to five properties located along the eastern side of Old Luss Road. Although a buffer of existing vegetation would be retained partially screened views of construction work and the eventual building would be possible from the rear windows and gardens of these properties. Overall the magnitude of change on views and the general visual amenity of the Old Luss Road residents is considered to be medium resulting in an overall Moderate Adverse effect during operation, which would be higher i.e. Major Adverse, for construction.
- 12.7.41 **Upper Stonemollan** comprises two properties located on higher ground to the west of the site at approximately 990m and 1.3km distance from the proposed Loch Shore development. Viewpoint 12 is located in between these two properties (also see Plate J). Due to the elevation of these properties, occupiers would have open views towards the loch shore development, which would be a new and prominent feature alongside Drumkinnon Tower. Most of the remainder of the proposed development would be screened by intervening woodland on and adjacent to the site. Overall the magnitude of change on views and the general visual amenity of the Upper Stonemollan residents is considered to be medium resulting in an overall Moderate Adverse effect which would be higher (but still Moderate) for construction than operation.
- 12.7.42 **Inchcruin and Clairinsh** is a small housing area at the northern end of Balloch (see viewpoint 7). Drumkinnon Wood physically and visually separates the housing from Loch Lomond and Loch Lomond Shores. Only properties on the edge of the housing area closest to the proposed development are likely to be affected. Views from properties within the housing area would be screened by the intervening properties. Management works to Drumkinnon Woods may make the construction activity and the Drumkinnon Woods development perceptible to residents and from the windows of properties adjacent to the development residents may have views of timber lodges, the woodland walk and more movement of people than is currently experienced. However, within the proposals a 12m buffer zone is proposed around the existing properties where the woodland would remain unaffected and as such provide a high level of screening. Away from Drumkinnon Woods the remainder of the proposed development (Station Square, Woodbank House and the loch shore) would be screened by intervening woodland on and adjacent to the site. Overall the magnitude of change on views and the general visual amenity of the Inchcruin and Clairinsh residents is considered to be low resulting in an overall Minor Adverse effect which would be higher (but still Minor) for construction than operation.
- 12.7.43 **Properties on or near Pier Road, Balloch Road and Balloch Bridge** are located at the northern end of Balloch close to the River Leven. Due to intervening vegetation and buildings, these properties would not have views of the loch shore development or the Woodbank House development. However, they would have close range and direct views of the Station Square development (see viewpoint 10 and Plates E and Q). In addition, properties on Pier Road (see viewpoint 9) would have filtered views of the Drumkinnon Woods development including the monorail. Overall the magnitude of change on views and the general visual amenity of the Pier Road, Balloch Road and Balloch Bridge residents is considered to be medium resulting in an overall Moderate Adverse effect. Due to the proximity, the magnitude of effect arising from the

construction activity would be high giving rise to a Major Adverse construction effect, although this would be short term and temporary.

12.7.44 **Mill of Haldane** is located on the high ground to the east of Balloch around Drumbain Crescent and Cook Road, between 1.5km and 2km east of the site. Views of the proposed development would be mostly screened (see viewpoint 18) by other built form, local landform and vegetation. However, there may be occasional glimpsed views, particularly from upper storeys, of the top of the loch shore development (i.e. the apart-hotel and visitor centre). Overall the magnitude of change on views and the general visual amenity of the Mill of Haldane residents is considered to be negligible resulting in an overall Negligible Adverse effect during construction and operation.

12.7.45 **Balloch** – due to intervening landform, built form and vegetation the remainder of Balloch would not have views of the proposed development, except for occasional glimpsed views of the top of the loch shore development (i.e. the apart-hotel and visitor centre). Overall the magnitude of change on views and the general visual amenity of Balloch residents is considered to be negligible resulting in an overall Negligible Adverse effect during construction and operation.

Visual Effects on users of Recreation, Leisure and Tourist Attractions, and Businesses

12.7.46 **Loch Lomond** is situated directly north of the site and hosts various leisure and tourist activities based around boating and the loch. From the southern end of the loch there would be close range and open views of the loch shore development and the re-developed Woodbank House boathouse. Although a viewpoint from the loch itself is not included, viewpoints 2, 3, 14, 15, 19 and 20 (and Plate O) are all located on the loch shore. For people using the southern end of the loch, the proposed development would appear similar to the existing Loch Lomond Shores complex. Its presence would not fundamentally change the view and the development would generally fit well with the scale and character of the landscape. There would be some permanent tree losses particularly near the loch side but this would be balanced by a new landscape scheme which could provide an overall enhanced setting to the existing development. The re-developed boathouse would be located within a woodland setting on the promontory at the north of Drumkinnon Bay. Although the boathouse is being built on the site of the original boathouse it would appear as a new and contrasting element in the view, however it would be built using appropriate materials and at a scale which means it would not dominate any views in which it was visible.

12.7.47 Users of the loch up to approximately 500m from the loch shore would experience a medium magnitude of effect arising from the construction activity giving rise to a Moderate Adverse construction effect, although this would be short term and temporary. During operation, the overall magnitude of change on views and the general visual amenity of recreational users at the southern end of Loch Lomond is considered to be low resulting in an overall Minor Adverse effect. For both construction and operation, with increasing distance the proposed development would become increasingly less perceptible and begin to appear as an extension to Loch Lomond Shores development. Therefore with increasing distance from the proposed development the magnitude of change and level of effect, for construction and operation, would eventually reduce, with receptors over 1km from the development only likely to experience Negligible Adverse effects.

12.7.48 **The River Leven** is adjacent to the east of the site and currently affords recreational users of the river views of Drumkinnon Woods and views along the river to the point it meets the loch (see viewpoints 8, 10 and 11 and Plate D). Due to intervening vegetation views of the loch shore development and Woodbank House development would be substantially screened. There may however be some direct, although partially screened, views of the Station Square development and glimpsed views of the Drumkinnon Woods development. Overall the magnitude of change on views experienced by users of the river is considered to be low resulting in an overall Minor Adverse effect for operation, the magnitude of change during construction would be medium with an overall Moderate Adverse effect.

12.7.49 **Cameron House and associated development (including grounds, golf course and holiday lodges)** is a busy visitor attraction to the north and north-west of the site. Views of the proposed development would be almost entirely screened by intervening landform and vegetation, in particular the woodland belt along the western banks of the loch. Viewpoints 5 and 14 (and Plate K) are from the Cameron House estate, and viewpoint 5 is one of the only

locations within the estate where the proposed development would be visible. Overall the magnitude of change on views and the general visual amenity of the Cameron House visitors is considered to be low resulting in an overall Minor Adverse effect during construction and operation.

- 12.7.50 **The Carrick Golf Club and Spa** is located over an area between 3.2km and 5.2km north of the site along the western banks of Loch Lomond. Most views of the proposed development would be screened by intervening landform and vegetation. Due to the distance and intervening vegetation the proposed development would be almost imperceptible. Overall the magnitude of change on views and the general visual amenity of users of the Carrick Golf Club and Spa is considered to be negligible resulting in an overall Negligible Adverse effect during construction and operation.
- 12.7.51 **Lomond Woods Holiday Park** is adjacent to the southern boundary of the Woodbank House development. It is bounded on all sides by mature vegetation which screens views into and out of the park. Planting within the holiday park adds a further layer of screening and any potential views of the proposed development (excluding the Woodbank House development) would be glimpsed and at a distance of over 700m (to the loch shore development). The existing northern boundary vegetation is relatively sparse and would afford some views of the Woodbank House development (see Plate I), particularly during winter months. Overall the magnitude of change on views and the general visual amenity of users of the Lomond Woods Holiday Park is considered to be low resulting in an overall Minor Adverse effect which would be higher (but still Minor) for construction than operation.
- 12.7.52 **Loch Lomond Shores** is located directly opposite the loch shore development, across 180m of open water. Visitors using the outside areas and boardwalk/promenade of Loch Lomond Shores would have direct and unobstructed views (see viewpoint 2) of the loch shore development. The remainder of the proposed development would not be visible. The current view of woodland on the shore area would be replaced by views of the proposed apart-hotel and visitor centre set within a new, more formal landscape. The proposed development would be seen in the context of the existing view of Drumkinnon Tower and Loch Lomond Shores complex. Overall the magnitude of change on views and the general visual amenity of users of Loch Lomond Shores is considered to be high resulting in an overall Major Adverse effect during operation. Due to the proximity and contrast with the existing view, the magnitude of effect arising from the construction activity would be very high, despite being short term and temporary, giving rise to a Major Adverse construction effect.
- 12.7.53 **Hotels, Restaurants and Bars** on and near Balloch Road and Balloch Bridge. Due to intervening vegetation and buildings, these properties would not have views of the Loch Shore development or the Woodbank House development. They would however have close range, direct views of the Station Square development (see viewpoint 10 and Plates E and Q). However most visitors would be indoors whilst at these locations and not focussing on the view, therefore their sensitivity is reduced to medium. Overall the magnitude of change on views and the general visual amenity of people visiting the hotels, restaurants and bars on Balloch Road is considered to be medium resulting in an overall Minor Adverse effect. The magnitude of effect arising from the construction activity would also be medium and give rise to a Minor Adverse construction effect which would be short term and temporary.
- 12.7.54 **Hotels, Restaurants and Bars** near Balloch Road / Old Luss Road roundabout (see viewpoint 13 and Plates G and H). Due to the intervening distance, vegetation and buildings, there are unlikely to be views from these locations other than occasional glimpses particularly from upper storeys, of the top of the loch shore development. Overall the magnitude of change on views and the general visual amenity of the people visiting these businesses is considered to be negligible resulting in an overall Negligible adverse effect during construction and operation.
- 12.7.55 **John Muir Way Coast to Coast Trail** runs from west to east through the Study Area entering the ZTV on the high ground at Bannachra Muir before heading along the old road along the western shores of the loch (see Plates M, R, L and K and Viewpoint 5). For this section of the trail the development would generally not be visible. However it then runs through the site passing the southern shore of the loch (see Viewpoints 1 and 2) and around the River Leven (see Plates B, D and C, and Viewpoints 10 and 8). The trail then follows the loch shore (see Viewpoint 15) and heads away from the loch through the grounds of Balloch Castle (see Viewpoint 17), before rising up in an easterly direction and crossing the higher ground where it

skirts the northern boundary of the Kilpatrick Hills and leaves the Study Area and ZTV. Only a 3.5km section of this 215km trail would potentially afford views of the proposed development. The magnitude of change on views and the impact on general visual amenity of people using this 3.5km section of the John Muir Trail would vary and in many places would not be prominent due to intervening local landform or vegetation. Elsewhere it would be medium, resulting in an overall Moderate Adverse effect during operation. The magnitude of change would rise to high during construction giving rise to a Major Adverse construction effect, although this would be short term and temporary and would not be experienced along all of the 3.5km section of the trail.

12.7.56 Three Lochs Way commences within the site boundary and heads along the western banks of the River Leven and around the southern shore of Loch Lomond. For 1.5km it follows the same path as the John Muir Way (see Plates C, D and B and Viewpoints 1, 2 and 5). At Cameron House Lodge the trails head in separate directions and the Three Lochs Way heads along Old Luss Road (see Viewpoint 6) before turning west and on to higher ground along Lower Stonymollan Road (see Plates I and J) adjacent to the southern boundary of the Woodbank House site and Upper Stonymollan Road (see Viewpoint 12). The magnitude of change on views and the general visual amenity of people using the initial 3km section of the 55km long Three Lochs Way would vary and in many places would not be prominent due to intervening local landform or vegetation. Elsewhere it would be medium, resulting in an overall Moderate Adverse effect during operation. The magnitude of change would rise to high during construction giving rise to a Major Adverse construction effect, although this would be short term and temporary and would not be experienced along all of the 3km section of the trail.

12.7.57 National Cycle Route 7 follows the path of the River Leven as it heads north towards Loch Lomond and skirts the south-eastern edge of site (see Viewpoint 10) close to the proposed Station Square development, before passing through the wooded area of the grounds of Balloch Castle and heading eastwards on Auchincarroch Road. The proposed development would be imperceptible for almost the entire route with the exception of approximately 300m of the route around Balloch Bridge where cyclists would have transient views of the Station Square development. Overall the magnitude of change on views and the general visual amenity of people using this 300m section of National Cycle Route 7 is considered to be low resulting in an overall Minor Adverse effect which would be higher (but still Minor) for construction than operation.

12.7.58 Regional Cycle Route 40 begins at Loch Lomond Shores and follows the same route as the John Muir Way (see above) for almost 4km to Arden. It then continues northwards along the western banks of Loch Lomond. For users of Regional Cycle Route 40 the only part of the proposed development which would be visible (and then only transiently) is the Drumkinnon Woods development and Woodbank House development as the route leaves Drumkinnon Woods and heads north on Old Luss Road for approximately 110m. Overall the magnitude of change on views and the general visual amenity of cyclists using this section of Regional Cycle Route 40 is considered to be low resulting in an overall Minor adverse effect which would be higher (but still Minor) for construction than operation.

Visual Effects on Transport Users

12.7.59 The A82 is a key tourist route and major road connecting Glasgow with the LLTTNP and the Highlands to the north. As a result, road users are considered to be of medium sensitivity to any changes in the visual amenity along the route. The road leaves Dumbarton approximately 6km south of the site and then runs along the western edge of the River Leven valley towards Balloch. Due to the screening afforded by the buildings in Balloch and mature roadside vegetation along this section of road, the proposed development would be imperceptible to road users. The A82 then passes approximately 180m west of Woodbank House (see Plate J) and 760m west of the proposed loch shores development. For almost this entire stretch of road, the proposed development would not be visible due to intervening vegetation, landform and buildings. The exception is a 340m stretch (approximate) adjacent to the Woodbank House development where there would be glimpsed and transient views of the proposed development. Overall the magnitude of change on views and the general visual amenity of road users in this location, during construction and operation, is considered to be negligible resulting in an overall Negligible Adverse effect.

- 12.7.60 Travelling north along the remainder of this road within the Study Area, there would be no views of the proposed development.
- 12.7.61 For road users heading southwards there would be occasional, glimpsed views of the proposed development and only during the winter months (see Plate M and Viewpoint 16). Overall the magnitude of change on views and the general visual amenity of road users in this location during construction and operation, is considered to be negligible resulting in an overall Negligible Adverse effect.
- 12.7.62 **The A818 and A817** (see Plate N) connect the A82, over high ground, with the A814 along the eastern shores of Gare Loch. For travellers heading west-to-east on these connecting roads views towards the southern end of Loch Lomond are typically screened by intervening vegetation and/or landform. The exception is a 500m stretch of the A817, 6.5km north-west of the site, where road users would have glimpsed long-distance and transient views of the loch shore development. Overall the magnitude of change on views and the general visual amenity of road users of the A818 in this location during construction and operation, is considered to be negligible resulting in an overall Negligible Adverse effect.
- 12.7.63 **The A811** leaves the A82 west of Balloch and 300m south-west of Woodbank House and runs directly through the town of Balloch (see Plate F) along the southern boundary of the LLTTNP, passing 200m south of Drumkinnon Woods at its closest point. Users of this road are of low sensitivity to the proposed development. With the exception of glimpsed and transient views of the Station Square development (see Viewpoint 11), the remainder of the proposed development would be almost imperceptible to users of the A811. Overall the magnitude of change on views and the general visual amenity of road users of the A811 in this location during construction and operation, is considered to be negligible resulting in an overall Negligible Adverse effect.
- 12.7.64 **Old Luss Road** is a minor local road which connects Balloch with Cameron House and other long established properties along the western banks of Loch Lomond. Users of this road are of low sensitivity to the proposed development. Close to the site it follows the same route as the John Muir Way (see above). The road is almost entirely tree lined and the only views of the proposed development would be for a 320m section where the road runs adjacent to the eastern boundary of the Woodbank House site (see Viewpoints 5 and 6). Overall the magnitude of change on views and the general visual amenity for road users of Old Luss Road in this location is considered to be low resulting in an overall Minor Adverse effect during construction. During operation the transient nature of the views of the proposed development on the Woodbank House site would also be low resulting in an overall Minor Adverse effect during operation.
- 12.7.65 **Balloch Road** is a local road which connects Old Luss Road (see Viewpoint 13) with the restaurants, pubs (See Plate E) and train station at the River Leven (see Viewpoint 10). Users of this road are of low sensitivity to the proposed development. The road is approximately 800m long and along its eastern section there would be close range and open (but transient) views of the Station Square development. The proposed development would however be viewed within the overall context of the road passing through the built up area. For this reason, the magnitude of change on views and the general visual amenity experienced by users of Balloch Road would be low resulting in an overall Minor adverse effect during operation. During construction the magnitude of change would rise to medium, resulting in a Moderate Adverse effect although this would be short term and temporary.
- 12.7.66 **Ben Lomond Way** is a local road at the south of Loch Lomond whose primary use appears to be to connect the large car park at Loch Lomond Shores to the smaller carpark at the Maid of the Loch and Duncan Mills slipways. Users of this road are of low sensitivity to the proposed development. The road is approximately 430m long. Views south are entirely screened by the adjacent Drumkinnon Woods and view to the north by mature planting within the Loch Lomond Shores car park and Loch Lomond Shores building complex. Views of the beach area are partially screened by intervening vegetation and there is only a small 40m section of road, adjacent to Drumkinnon Tower, where views towards the loch are possible (see Viewpoint 1). Road users would experience glimpsed and transient views of the Drumkinnon Woods development and of the loch shores development due to the proposed removal of existing vegetation between the road and beach area. Longer views across the loch would also be opened up as a result of the vegetation removal. At the eastern end of Ben Lomond Way the proposed monorail would pass over the road.

12.7.67 Overall the magnitude of change on views and the general visual amenity of road users of Ben Lomond Way is considered to be medium resulting in an overall Minor Beneficial effect during operation (due to the opening of views towards the loch and general increased level of visual interest for the short time it takes to drive by the development). During construction the magnitude of change would also be medium (due to the very short term experience of travelling along the road) and in this instance the effect would be Moderate Adverse, although this would be short term and temporary.

12.8 Further Mitigation and Enhancement

Construction Phase

12.8.1 Beyond the relevant embedded mitigation listed in **Section 12.7**, no further mitigation of relevance to this assessment is proposed for the construction phase of the proposed development.

Operational Phase

12.8.2 The site is already heavily screened from the majority of the Study Area surrounding the site and standard mitigation measures to screen developments would not reduce any potential impacts further. For instance, it would not be possible to screen the apart-hotel from other loch shore locations or recreational users of the loch, due to the intervening landscape. However, the use of darker building materials could reduce the visual impact on those receptors and has been suggested by the landscape officer at the LLTTNP. This is highlighted by the light cladding on Drumkinnon Tower which has the effect of highlighting the tower against the darker backdrop of the local woodland.

12.8.3 It is noted that this is not a full planning application and as yet full details are not available on the materials proposed for use in the development or facades of the buildings. However, from an LVIA perspective, in addition to using darker materials for the proposed apart-hotel and visitor centre buildings, the following mitigation measures are being considered:

- Commitment to the use of sensitive materials, to be specified at detailed design stage;
- Commitment to the implementation of a landscape scheme that ensures enough compensatory planting that there is no overall loss of woodland, to be specified at detailed design stage; and
- Commitment to the retention of a woodland buffer to separate properties on Old Luss Road with the proposed site of the service area. To be confirmed at detailed design stage.

12.9 Residual Effects

12.9.1 Taking account of all proposed mitigation and enhancement measures, the likely residual effects from the construction and operation of the proposed development are identified in **Tables 12.9** and **12.10** below.

Table 12.9 - Summary of Residual Landscape Effects

Receptor	Construction			Operation – Year 15		
	Landscape Effect (All adverse)	Significance	Rationale	Landscape Effect (All adverse)	Significance	Rationale
Site	Major	Significant (localised)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate	Significant (localised)	As per the reasons stated in Section 12.7 for the predicted level of this effect.
LLTTNP	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
River Valley Farmland with Estates LCT	Moderate	Significant (localised)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Loch Shore Fringe LCT	Moderate	Significant (localised)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Rolling Farmlands with Estates LCT	Moderate	Significant (localised)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Landscape Effect (All adverse)	Significance	Rationale	Landscape Effect (All adverse)	Significance	Rationale
Lowland Lochs LCT	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Loch Lomond NSA	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Kilpatrick Hills LLA	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Balloch Castle GDL	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Table 12.10 - Summary of Residual Visual Effects

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
LLTTNP	Negligible (However, highly localised areas of Moderate effects adjacent to the site).	Not Significant (However, highly localised areas of Significant effects adjacent to the site).	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible (However, highly localised areas of Moderate effects adjacent to the site).	Not Significant (However, highly localised areas of Significant effects adjacent to the site).	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Loch Lomond NSA	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Kilpatrick Hills LLA	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Balloch Castle GDL	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
Settlement – Old Luss Road (Balloch)	Major	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Settlement – Upper Stonymollan (Balloch)	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Settlement – Inchcruin and Clairinsh (Balloch)	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Settlement – Pier Road, Balloch Road and Bridge (Balloch)	Major	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Settlement – Mill of Haldane (Balloch)	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Settlement – Balloch (remainder of settlement)	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
Loch Lomond	Moderate (up to 500m from the loch shore development and then decreasing the further in distance from the development you travel)	Significant (up to 500m from the loch shore development and then decreasing the further in distance from the development you travel)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
River Leven	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Cameron House and associated development (including the grounds, golf course and holiday lodges)	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
The Carrick Golf Club and Spa	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Lomond Woods Holiday Park	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Loch Lomond Shores	Major	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Major	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Hotels, Restaurants and Bars on Balloch Road near Balloch Bridge	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Hotels, Restaurants and Bars near Balloch Road / Old Luss Road roundabout	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
John Muir Way Coast to Coast Trail	Major (localised for sections adjacent to the development, otherwise generally negligible)	Significant (localised for sections adjacent to the development)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate (localised for sections adjacent to the development, otherwise generally negligible)	Significant (localised for sections adjacent to the development)	As per the reasons stated in Section 12.7 for the predicted level of this effect.
The Three Lochs Way	Major (localised for sections adjacent to the development, otherwise generally negligible)	Significant (localised for sections adjacent to the development)	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Moderate (localised for sections adjacent to the development, otherwise generally negligible)	Significant (localised for sections adjacent to the development)	As per the reasons stated in Section 12.7 for the predicted level of this effect.
National Cycle Route No. 7	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Regional Cycle Route No. 40	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

Receptor	Construction			Operation – Year 15		
	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale	Visual Effect (Adverse unless otherwise stated)	Significance	Rationale
A82 (key tourist route)	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
A818 / A817	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
A811	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Negligible	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Old Luss Road	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Balloch Road	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.
Ben Lomond Way	Moderate	Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.	Minor Beneficial	Not Significant	As per the reasons stated in Section 12.7 for the predicted level of this effect.

12.10 Monitoring of Residual Effects

12.10.1 No monitoring is considered to be proportionate or required in relation to the predicted residual significant adverse effects of the proposed development.

12.11 Assessment of Cumulative Effects

12.11.1 A substantive cumulative assessment only needs to be included where cumulative effects (construction or operational phase) are likely and have not already been factored into the assessment provided above. Existing developments form part of the baseline scenario; therefore, they are of relevance to the assessment of individual effects rather than cumulative effects.

12.11.2 The proposed and consented developments to be considered, as identified by the LLTNPA, are:

- Replacement building and infrastructure for Sweeney's Cruises (planning application 2017/0373/DET);
- Drumkinnon Bay dredging (planning permission 2017/0326/DET). Consented January 2018;
- Woodbank Inn Hotel Extension (planning permission 2017/0223/DET). Consented November 2017;
- Balloch Street Design Project (see <https://www.sustrans.org.uk/balloch>)
- Erection of ancillary structures (retrospective) and change of use of woodland to bird flying display area and laying of hardstanding (planning permission 2018/0379/DET). Consented February 2019.

12.11.3 **Replacement building for Sweeney's Cruises** – this proposal is limited to the replacement of an existing small buildings and infrastructure on the existing site of the Sweeney's Cruises business at Balloch Road, adjacent to the River Leven and Station Square. In these circumstances it is not considered that there would be any cumulative landscape or visual impacts as a result of these developments, with the possible exception of short-term temporary visual impacts should construction work be undertaken concurrently with the proposed construction work at Station Square.

12.11.4 **Drumkinnon Bay dredging** – potential cumulative effects with this proposal are dependent on the timing and machinery used to perform the dredging operation. If a vessel with an inbuilt crane performs the dredging concurrently with construction work at the loch shore development site, there is the potential for very short-term visual effects. These effects would however impact those receptors where construction work at the loch shore site would already be visible.

12.11.5 **Woodbank Inn Hotel extension** – the proposed extension at the rear and partly on the footprint of an existing building, approximately 75m west of the boundary of the Station Square site. It is considered that these proposals are minimal, of a domestic scale and would not have any cumulative landscape or visual impact with the proposed development assessed within this ES, either during construction or operation.

12.11.6 **Balloch Street Design Project** – this project has involved a community consultation programme with respect to improving the appearance and quality of Balloch around the train station and town centre. These proposals have been submitted to West Dunbartonshire Council and LLTTNP Authority with the intention of submitting a detailed design at a later date. Therefore as it currently stands it is not possible to accurately consider these proposals within the cumulative effects assessment. However, all the proposals focus around improving the street-scape of Balloch e.g. improving the street furniture, removing clutter and improving the initial impression of the town for visitors arriving at the train station. In these circumstances the only potential for cumulative landscape and visual effects would be very short-term and temporary visual effects if construction work near the train station occurred concurrently with the proposed construction work at Station Square. There would be no cumulative operational landscape or visual effects.

- 12.11.7 **Bird Flying Display Area** – this proposal involved improvements to facilities for the Loch Lomond Bird of Prey Centre and included for a new area of hardstanding for accessibility and change of use of an area of woodland for bird flying displays. The application also included retrospective permission for ancillary buildings at the centre. The planning application was approved in February 2019 and made reference to no issues of visual amenity as part of the decision notice.
- 12.11.8 Overall none of the identified cumulative developments identified would result in significant cumulative landscape or visual effects, when considered in conjunction with the proposed development.
- 12.11.9 None of the identified cumulative developments would alter the predicted residual effects from the proposed development detailed in **Section 12.9** of this chapter.

12.12 Summary

- 12.12.1 This ES chapter has provided an assessment of the likely significant effects from the proposed development on landscape, views and visual amenity. The assessment has therefore assessed likely landscape and visual effects on identified receptors within a defined Study Area, extending to 5km from the site boundary.
- 12.12.2 In summary the value of the landscape within the Study Area as a whole is deemed to be very high but this is locally reduced to high, around the southern end of Loch Lomond where the built development, infrastructure and proximity to Balloch means that the landscape does not have the highly scenic, rugged and wild qualities of the park experienced further north. Similarly, whilst the sensitivity of the whole LLTTNP to the proposed development is considered very high, the sensitivity of the landscape around the southern end of Loch Lomond is considered medium as the landscape is already affected by a similar scale development (Loch Lomond Shores), by road infrastructure and by housing at Balloch. In relation to this it is noted that the Loch Lomond NSA actually excludes the southern end of Loch Lomond around the development site. Drumkinnon Woods appears well used by local residents and although classed as ancient woodland it visually appears to be in relatively poor condition. It is noted that the site is allocated for development for visitor experience related uses within the adopted Loch Lomond and the Trossachs LDP (2016).
- 12.12.3 As detailed in the baseline visibility section (**Paragraph 12.4.81**) the potential visual impacts of the proposed development were considered based on four different areas as follows:
- Loch Shore Development (relating to Zone C: Pierhead of **Figure 3.1 – Parameters Plan**);
 - Drumkinnon Woods (relating to Zone B: Riverfront and Zone D: Drumkinnon Wood and Bay of **Figure 3.1 – Parameters Plan**);
 - Woodbank House (relating to Zone E: Woodbank of **Figure 3.1 – Parameters Plan**); and
 - Station Square (relating to Zone A: Station Square of **Figure 3.1 – Parameters Plan**).
- 12.12.4 As outlined in the section on baseline visibility (**Paragraphs 12.4.81 – 12.4.88**) and the viewpoint analysis (**Paragraphs 12.7.25 – 12.7.35**) there is a general lack of perceptibility of the site from the surrounding area. The proposed development as a whole would be visually well contained except for receptors immediately adjacent to the proposed development, with few exceptions as follows.
- 12.12.5 The loch shore development would potentially be visible from:
- Two isolated locations on the loch shore (Proposal Beach, within the grounds of Balloch Castle and the boathouse marina within the grounds of Cameron House estate);
 - Areas of open high ground immediately to the east (Balloch Castle) and west (Upper Stonymollan) of Balloch;
 - Boat users at the southern end of the loch; and

- Very occasional long distance views of the development from Inchmurrin Island (4km from the site) and areas of high ground further afield – the visual impact of which would be negligible.
- 12.12.6 In addition, the loch shore development would visually impact viewers from the beach area, within the site itself, looking northwards across the loch.
- 12.12.7 The Station Square development would be a noticeable new feature to receptors immediately adjacent to the square including users of the River Leven and residents on Pier Road and Balloch Road.
- 12.12.8 The development at Woodbank House would be visible for existing residents on Old Luss Road and potentially visitors to the Lomond Woods Holiday Park.
- 12.12.9 Much of the development within Drumkinnon Woods would be screened by virtue of being located in woodland. An exception is the proposed re-development of the Woodbank House boathouse on the promontory at the north of Drumkinnon Bay. Although well screened the boathouse would likely be visible to users of the loch and visitors to other loch shore areas such as Proposal Beach. In addition residents of five properties on Old Luss Road would have heavily screened views of the proposed service building within the western extents of Drumkinnon Wood.

Significant Landscape Effects

- 12.12.10 In summary, the LVIA has identified the following adverse significant landscape effects that would be likely to arise from the proposed development:
- The site itself (i.e. within the red line boundary) would experience localised Major effects during construction work and localised Moderate effects (from the removal of woodland and change of land use) during operation; and
 - The Loch Shore Fringe, River Valley Farmland with Estates and Rolling Farmlands with Estates Landscape Character Types would experience localised Moderate effects during construction work.

Significant Visual Effects

- 12.12.11 In summary the LVIA has identified the following adverse significant visual effects that would be likely to arise from the proposed development:
- Balloch Castle Garden and Designed Landscape would experience Moderate effects during construction work at the loch shore and Moderate effects during operation, with little opportunity to mitigate the changes in view;
 - A small number of properties on Old Luss Road would experience Major effects during construction work at Woodbank House (and the service building within Drumkinnon Wood) and Moderate effects during operation;
 - Properties and walkers at Upper Stoney-mollan would experience Moderate effects during construction work at the loch shore and Moderate effects during operation, with little opportunity to mitigate the changes in view;
 - A small number of properties on Pier Road and Balloch Road would experience Major effects during construction work at Station Square and Moderate effects during operation;
 - Road users on Pier Road would experience Moderate effects during construction and operation resulting from the proximity of the proposed monorail;
 - Receptors, within 500m of the loch shore development, on Loch Lomond would experience Moderate effects during construction work at the loch shore development;
 - Receptors on the River Leven would experience Moderate effects during construction work at Station Square;

- Receptors at Loch Lomond Shores would experience Major effects during construction work and during operation at the loch shore development, with little opportunity to mitigate the changes in view;
- Users of the John Muir Way and The Three Lochs Way would experience localised Major effects during construction and localised Moderate effects during operation, as they approached and walked through the development area; and
- Road users of Ben Lomond Way would experience transient Moderate effects during construction work of the loch shore development.

Loch Lomond and The Trossachs National Park

- 12.12.12 In summary it is considered that due to the site's location on the boundary of the LLTTNP and in an area already impacted by development, coupled with its lack of perceptibility from the wider area, the proposed development would only cause Negligible long term landscape and visual effects on the LLTTNP, its Special Landscape Qualities and users.

13 Archaeology and Heritage

- 13.1.1 This ES Addendum chapter provides an assessment of the likely significant effects on the historic environment with particular regard to the Category A-listed Woodbank House and its grounds, and the Category A-listed Winch House and Slipway. The assessment is based on the characteristics of the site and surrounding area and the key parameters of the proposed development detailed in **Chapter 3 – The Proposed Development**. This chapter has been prepared by Headland Archaeology Ltd.
- 13.1.2 The aims of this chapter are to add further detail to the existing setting assessments of Woodbank House and the Winch House and Slipway in response to a request from the Loch Lomond and Trossachs National Park (LLTNP) Conservation Officer (**Sections 13.3.5 to 13.3.8**).
- 13.1.3 This Addendum is intended to complement, not to supersede, the conclusions of the existing EIA **Chapter 13 – Cultural Heritage**. The original assessment has been revised where alterations to the design of the proposed development, or consultee requests, have deemed it necessary. Those revisions are detailed below.

13.2 Legislative and Policy Context

- 13.2.1 The legislative and policy frameworks applicable to the original EIA were discussed in detail in **Chapter 5 – Legislative and Policy Context** and in **Section 13.2 of Chapter 13**. They remain unchanged and are applicable to this addendum.

13.3 Methodology

- 13.3.1 The methodology employed and outlined in **Chapter 13** of the EIA remains broadly unchanged and is applicable to this addendum. Revisions and updates to the methodology specific to this addendum are detailed below in 'Approach to Assessment' (**Section 13.3.12 to 13.3.13**).

Scope of Assessment

- 13.3.2 The ES Addendum presents a re-examination of two particular Category A Listed Buildings, with the intention of considering and defining in more detail;
- The historical curtilage, key views and key approaches of Woodbank House,
 - The areas of highest sensitivity within the Woodbank estate, and areas of least sensitivity that might be suited to development,
 - The influence of particular landscape characteristics on the above, and
 - The Winch House and its curtilage.
- 13.3.3 This work has been undertaken in response to a request from the LLTNP Conservation Officer.

Overall Approach

Overview

- 13.3.4 In undertaking the assessment presented in this Addendum, the following activities have been carried out:
- Desk-based study of maps and documents relating to Woodbank House and estate, and the Winch House,
 - Site visit to Woodbank House and estate,
 - Site visit to the Winch House and Slipway.

Consultation

- 13.3.5 Following submission of the EIA, the LLTNP Conservation Officer requested (phone calls with Mark Johnstone of PBA and Tom Janes of Headland Archaeology, 28th Feb 2019, email from Vivien Emery of LLTNP, 4th March 2019) that further analysis be undertaken of the setting of Woodbank House and estate, and the setting of the Winch House and slipway.
- 13.3.6 The Conservation Officer requested Heritage Statements for Woodbank House, Stables and outbuildings and for Winch House, Slipway. These are to comprise;
- An assessment and description of historical curtilage and setting of these sites;
 - A brief summary of architectural special interest of all these buildings
 - Identification of areas of high to low sensitivity for proposed development within and adjacent to these settings and heritage protection zones (i.e. areas of no development);
- 13.3.7 The Heritage Statements are to be accompanied by Heritage Impact Assessments for both Listed Buildings. These are to comprise;
- An objective assessment of the relative heritage impact/effects of the proposed zones, numbers and indicative massing of development within, and adjacent to the curtilage and setting of Woodbank House, Stables & Outbuildings (i.e. all proposed lodges, residential and associated parking zones to fore and rear of Woodbank House and Stables) and Winch House & Slipway (i.e. all proposed Pierhead development proposed).
 - Proposed enhancements and mitigation to address any residual adverse impacts/effects of the proposed development.
- 13.3.8 No other consultees have requested further information following submission of the EIA.

Study Area

- 13.3.9 The Study Area remains that as used in the EIA **Chapter 13** and extends 1km from the site boundary. However, assessment will be focused upon only two designated heritage assets and their immediate surroundings.

Information Sources

Desk Top Study

- 13.3.10 Information sources consulted during the compilation of the 2017 desk-based assessment and the 2018 EIA Chapter remain applicable to this Addendum.

Fieldwork

- 13.3.11 A visit to Woodbank House and estate and the Winch House and slipway was undertaken on 25th March 2019. This was to inform the identification of the historical curtilages and settings of Woodbank House and the Winch House, as well as key views and key approaches of Woodbank House, areas of high/low sensitivity within the estate, and influence of topography upon these elements.

Approach to Assessment

- 13.3.12 The approach to assessment with regard to the identification of heritage assets, and assessment of impacts upon them remains almost unchanged from that used in **EIA Chapter 13** and is applicable to this Addendum.
- 13.3.13 Headland Archaeology's assessment methodology has been amended slightly since the EIA was submitted; the criteria for assessing the magnitude of impacts upon heritage assets have been updated. The revised criteria are outlined in **Table 13.1** below.

13.3.14 The sensitivity of areas within Woodbank estate has also been determined with reference to the criteria outlined in **Table 13.1**. An area of high sensitivity is one in which change is likely to result in impacts of high or medium magnitude, and an area of low sensitivity is one in which change is likely to result in impacts of low or negligible magnitude, or no impacts at all.

Table 13.1 - Criteria for Assessing Magnitude of Impacts

Magnitude of Impact	Guideline Criteria
High beneficial	Changes to an asset and/or its setting resulting in considerable enhancement of cultural significance. <i>Or:</i> Preservation of an asset and/or its setting where it would otherwise suffer considerable loss of cultural significance in the do-nothing scenario.
Medium beneficial	Changes to an asset and/or its setting resulting in moderate enhancement of cultural significance. <i>Or:</i> Preservation of an asset and/or its setting where it would otherwise suffer moderate loss of cultural significance in the do-nothing scenario.
Low beneficial	Changes to an asset and/or its setting resulting in a slight enhancement of cultural significance. <i>Or:</i> Preservation of an asset and/or its setting where it would otherwise suffer slight loss of cultural significance in the do-nothing scenario.
Negligible beneficial	Changes to an asset and/or its setting resulting in a very slight enhancement of cultural significance. <i>Or:</i> Preservation of an asset and/or its setting where it would otherwise suffer very slight loss of cultural significance in the do-nothing scenario.
No Impact	The asset's cultural significance is not altered.
Negligible adverse	Changes to an asset and/or its setting resulting in a very slight loss of cultural significance.
Low adverse	Changes to an asset and/or its setting resulting in a slight loss of cultural significance.
Medium adverse	Changes to an asset and/or its setting resulting in a moderate loss of cultural significance.
High adverse	Changes to an asset and/or its setting resulting in a considerable loss of cultural significance.

13.4 Baseline Conditions

13.4.1 The baseline conditions defined within the 2017 DBA and the 2018 EIA **Chapter 13** remain unchanged. However, the descriptions of Woodbank House and estate, and the Winch House and slipway are included here for ease of reference and have been expanded upon where appropriate.

Heritage Statement: Woodbank House and garden buildings, Category A, LB1125

- 13.4.2 Woodbank House and garden buildings (LB1125) comprise a Category A-listed building consisting of a modest eighteenth-century mansion (**Plate 1**), and an associated gazebo. Built on the site of an earlier seventeenth-century house, the present building dates to the 1770s with a nineteenth-century extension added to the south (**Plate 2**). As the listing entry only refers to Woodbank House and the gazebo, the historical curtilage of the listed building is considered to be restricted to the footprint of the house (and extension), and formal garden area within which the gazebo is located. The setting of Woodbank House is considerably wider than the curtilage and is considered to extend at least to the boundaries of the estate.
- 13.4.3 Occupied until the 1980s, Woodbank House was most recently in use as a hotel, and minor alterations relating to this use are apparent in the building's fabric. Following the hotel's closure, the building has gradually fallen into disrepair, and is currently in a ruinous and unsafe state as a result of vandalism and exposure to the elements. The roof has fallen in, causing the collapse of the upper floors and staircases, and the ground floors and cellars are dilapidated, rubble-strewn and overgrown.
- 13.4.4 Also included in the listing is a small garden building approximately 25m from the south-eastern façade of the house. This gazebo is described in the HES listing as a '*small octagonal timber gazebo. Chevron joinery; pagoda style roof; gablets breaking eaves to alternate facets. Door on S elevation, gablet over with trefoil louvred ventilation; broad window to left. Terracotta fishscale tiles; broad terracotta ridge tiles; terracotta finialled cap; gablets with finials.*' The listing entry was last updated in 1995. At the time of the site visit, only the octagonal base of the gazebo survived *in situ* and was heavily overgrown with vegetation.
- 13.4.5 A stable block and garages (just visible on **Plate 3**) to the north of the house are not listed but are included on the HER and are also considered to be assets of high importance (EIA **Technical Appendix 13.2, Section 4.2**). The stables and garages are also in a ruinous condition, with the roofs collapsed and walls surviving only to gable height in some places. The outline of a walled garden also survives on the slopes above the house to the west. This comprises a small, levelled area, enclosed with low brick walls, with the outlines of two brick-walled buildings adjacent to it along the western edge of the estate. The southern-most of these two buildings represents the remains of a modest glasshouse – during the site visit some ironwork and timber window frames were noted amongst the rubble and vegetation. This garden is depicted on the OS maps of 1899 (**Plate 5**) and 1923 (**Plate 6**), but not on the 1st Edition mapping of 1864 (**Plate 4**).
- 13.4.6 The changes between the 1864 and the 1899 OS maps indicate that extensive redevelopment took place on the Woodbank estate in the late nineteenth century; it is reasonable to assume that this work was contemporary with the addition of the extension to the house. On the earlier map (**Plate 4**), a rectangular area of formal planting is depicted at the north-western end of the estate; by 1899 this had been removed and the walled garden had been built west of the house (**Plate 5**). The three separate stable blocks shown on the 1864 map were extended and connected by 1899, and a small bothy had been built in the woods to the north-west. A small network of paths had been created, looping through the wooded slopes in the north-west of the estate. A second driveway was also built curving round from the Lower Stoney-mollan Road to the new front of the house, where an extensive formal rose garden was created (**Plate 2**). The increased popularity of motor cars in the early twentieth century resulted in the further extension of the stable block to add a garage. This is shown on the 1923 OS map (**Plate 6**).
- 13.4.7 Woodbank House is in the south-western corner of the Site and stands at the top of a low ridge on the western edge of pasture on the Old Luss Road. Mature woodland surrounds the house, and the historic mapping indicates that the borders and footprint of this woodland, and the surrounding fields, appear largely unchanged since the mid-eighteenth century (**Plates 4 to 6**). Immediately west of the house, the land slopes steeply up towards the walled garden, beyond the garden trees form a shelter belt which defines the edge of the grounds. North-west of the house and garden, the grounds are wooded, and the traces of paths can be discerned winding through the trees and along the slopes towards the northern end of the estate. The historic mapping depicts this area of the estate as having been wooded since at least 1864, and it

remains heavily overgrown with mature pines, broadleaf trees, and rhododendrons (**Plate 7**). The underlying topography along the western edge of the estate comprises steeply sloping ground and small ridges, crossed by two heavily silted streams flowing from west to east. The wooded areas depicted on the historic maps broadly correspond to the steepest land within the estate (**Plates 4 to 6**).

- 13.4.8 In the north-east and east of the estate, between the wooded slopes and the Old Luss Road, the steep slopes become much gentler and the woods are replaced by open fields. Although currently under rough pasture, the original ornamental parkland (as shown in **Plate 3 to 6**) can be discerned either side of the straight driveway leading from the road to the stable block (**Plate 8**). Another ornamental belt of mature trees defines the north-eastern edge of the estate along the Old Luss Road (**Plate 9**).
- 13.4.9 The house is most easily approached from the Old Luss Road along the original straight driveway, now a rough track, gravelled in places; the avenue of trees depicted in Roy's map (EIA **Appendix 13.1 Plate 13.2**) does not survive. The original 1775 eastern façade of the house can be glimpsed through the trees, but the full extent of the house is not visible (EIA **Appendix 12.1 Viewpoint 6**). As the drive enters the woodland, it begins to curve to the south whilst climbing the low ridge, and winds along the eastern edge of the woodland, giving the impression of a long approach to the house through the trees. From the curving drive, there are views across the lower fields east towards houses on the Old Luss Road, and the low hills south-east of Balloch and Jamestown. The existing developments on the shore of Loch Lomond are not visible in these views. Although now in an overgrown state, it is clear the tree planting was intended for the house to be partially concealed yet still visible; with the house glimpsed from the road on the south-easterly approach but hidden from view on approach along the driveway from the north-east.
- 13.4.10 The driveway curves round to the southern front of the house, a nineteenth-century addition which now constitutes the main entrance. Again, partially hidden by woodland (depicted on the historic OS mapping), the house can only be glimpsed from the Lower Stoney-mollan Road approximately 100m to the south across an area of open pasture (EIA **Appendix 12.1 Plate I**). This careful screen planting appears designed to ensure privacy for the house at the centre of what is a very small estate. From the southern elevation of the house, outward views are largely limited by the trees, and the overall impression is of a house designed to be relatively secluded within a small woodland setting. The nineteenth-century extension of the drive continues southward towards a gate onto Lower Stoney-mollan Road.
- 13.4.11 Built by a wealthy Glasgow merchant as a modest country house, Woodbank House is Category A-listed for its architectural and historical interest. It appears to have been originally designed to provide views to the east and north-east, over the grounds and fields to the hills beyond Balloch – at the time, a small village. However, the nineteenth-century extension appears to have made the southern façade the main entrance to the house, with a new driveway from the Lower Stoney-mollan Road. This changed the focus of views, moving them away from the new quarries and piers in the fields north of Balloch, round towards the Tullichewan Estate to the south and south-east.
- 13.4.12 As requested by the LLTNP Conservation Officer, areas of differing sensitivity to development within the vicinity of Woodbank House have also been identified. It is clear from the study of historical maps of the estate, and from the site visits, that there are three zones of varying sensitivity within the Woodbank Estate (the methodology used to define these areas is outlined above in **Section 13.3.4**). These are depicted on **Figure 13.1** and comprise an area of High sensitivity, an area of Low sensitivity, and three heritage protection zones.
- 13.4.13 Two Heritage Protection Zones (HPZs) are proposed. These encompass the curtilage of the Category A-listed building of Woodbank House and Gazebo, and the footprint of the former stable block and garages. It is recommended that no new development (excluding renovation and restoration of existing buildings) outside historic building footprints should take place within these HPZs.
- 13.4.14 The area of High sensitivity comprises the former walled garden, the immediate grounds of the house and most of the landscaped parkland north, east and south of the house. Views between these areas and Woodbank House, and views across these areas towards the house are

considered to be of most relevance to understanding and appreciating the contribution made by setting to the cultural significance of the house and estate, and it is desirable to preserve and/or enhance these views as much as possible. Furthermore, it is also desirable to preserve the footprint of the walled garden, and to maintain its relationship with the house.

- 13.4.15 The remainder of the Woodbank estate, comprising the wooded slopes to the north-west, and the remainder of the landscaped parkland to the north-east of the stables, is considered to be of Low sensitivity. The wooded slopes to the west and north-west are characterised by short-range views restricted by ornamental woodland and undulating topography, and were intended to create an enclosed, secluded feel in this area of the estate. Long-range views from within the woodland can only be obtained in incidental glimpses, and there is no intervisibility (intentional or otherwise) between this area and the house. Towards the north-east of the estate, although the parkland is open and unforested, the topography and tree planting around the house ensures that there is no intervisibility between Woodbank House and this area.

Heritage Statement: Loch Lomond, Drumkinnon Bay, Winch House including Slipway, LB46721

- 13.4.16 Drumkinnon Bay Winch House and Slipway is a Category A-listed Building (LB46721). As the listing entry only refers to the Winch House and the slipway, the historical curtilage of the listed building is considered to be restricted to the footprint of the Winch House and the slipway immediately adjacent to the north-west.
- 13.4.17 Built in 1900-01 by the Dumbarton & Balloch Joint Line Committee, it is first depicted on Bartholomew's Map of 1902. It consisted of a 2-track 'patent slip', with a wooden cradle and iron outriggers supported on a double central rail, with ratchet in the centre, and single side rails. At the head of the slipway was a single-storey harled winding-engine house, containing a large steam winch (Hume 1976). The slipway was built to assist in servicing and maintaining the steam packets which ferried tourists and travellers along Loch Lomond in the late nineteenth and early twentieth century. Balloch Pier, approximately 80m to the north-east was a terminus for trains from Glasgow via Dumbarton Junction, and passengers could easily alight from the train to embark on the steamers. This traffic gradually declined and by the 1920s the Balloch to Dumbarton was very limited and passenger traffic ceased entirely in 1934 (<http://www.west-dunbarton.gov.uk/leisure-parks-events/museums-and-galleries/collections/transport/rail/>). The winch house fell into disuse and disrepair and remained abandoned for the remainder of the twentieth century. In 2006 the winch house was restored with Heritage Lottery funding and opened as a visitor attraction to complement the ongoing restoration of the paddle steamer 'Maid of the Loch'. The winch house machinery has been restored to working order, and the 'Maid' is currently berthed at Balloch Pier where she is undergoing restoration.
- 13.4.18 The Winch House and Slipway is on the southern shore of Loch Lomond, adjacent to but outside the north-eastern corner of the Site boundary. Historic mapping depicts it as being one of a number of boat houses and jetties when it was first built, and a small jetty is still in use immediately adjacent to the slipway. The 1923 OS map (**Plate 10**) depicts a footpath leading to the winch house from the centre of Balloch, and Balloch Pier (and railway line) immediately to the north-east. The land around the winch house has been developed and now comprises a number of car parks serving Loch Lomond Shores visitor centre and the ticket office for the cruises leaving from Balloch Pier. The area to the south, occupied by a curling pond and other boat houses in 1923, was quarried for sand and gravel until the 1980s, before being converted into a small lagoon for Loch Lomond Shores. There are areas of woodland planting which border the car parks and act as a natural screen between the developed shore and the northern suburbs of Balloch. The car parks have largely obscured the historic landward approach to the winch house, although the course of the railway line is still preserved as a footpath along the riverbank. Consequently, the inland/onshore setting of the Winch House is considered to be of Low sensitivity to further change.
- 13.4.19 Views inland, and across the lagoon to the south-west, are of limited relevance to understanding and appreciating the building's cultural significance, which largely derives from its historical and architectural characteristics. The aspects of the Winch House's setting which are of some relevance relate to its continued position on the shore of the loch, and its

relationship with Balloch Pier and the course of the former railway line. Together these features represent the history of tourism and travel to and across Loch Lomond.

13.5 Baseline Evolution

- 13.5.1 As stated in the EIA (**Chapter 13, Section 13.5.1**) conditions affecting the survival of archaeological remains within the site and Study Area are likely to remain unchanged in the absence of the proposed development.

13.6 Embedded Mitigation

- 13.6.1 As detailed in EIA **Chapter 3 – The Proposed Development**, a number of design features and embedded mitigation measures have been incorporated into the design and construction of the proposed development to avoid, prevent or minimise significant adverse environmental effects and to enhance beneficial effects. Embedded mitigation measures of relevance to cultural heritage are summarised in the EIA (**Chapter 13, Section 13.6.1**).

13.7 Heritage Impact Assessment

Woodbank House and garden buildings, Category A, LB1125

- 13.7.1 The impact of the proposed development on Woodbank House has already been discussed in the EIA Chapter (**Section 13.7**). However, the introduction of the areas of sensitivity, and the amendments to the design of the proposed development mean that an update to the impact assessment is required. The following impact assessment has been undertaken with reference to three studies produced by produced by Anderson Bell and Christie in early 2019; Massing and Height Information: West Riverside (ABC, 2019a), Woodbank House, Balloch: Structural and Conservation Summary (ABC, 2019b), and Woodbank House: Ancillary Buildings Feasibility Study (ABC, 2019c).
- 13.7.2 Within the HPZs it is proposed to stabilise and restore the stables, garages and Woodbank House in order to convert them into self-catering units. This work would retain the existing footprint and fabric (as far as possible) of the stable block (ABC, 2019c), whilst restoring the upper floors and roof to their original profile as seen in historic views of the stables (**Plate 3**). The surviving façade of Woodbank House would be stabilised and restored, and the historic footprint will be infilled with residential units (ABC, 2019b). The roof would be restored to its original height and profile as seen in historic views of the building (**Plate 1, 2 and 3**).
- 13.7.3 The renovation of Woodbank House and the stable block, preventing their continued decay and decline, and restoring it to use would comprise a beneficial impact. Although not being restored exactly to their original (late nineteenth-century) condition or use, the house would be preserved from eventual collapse, and would once again be a residential building – albeit one divided into multiple residences. The stable block would be re-opened as a residential building, but the fabric, footprint and relationship to Woodbank House would be preserved. It is considered that this would be a beneficial direct impact of medium magnitude. This would result in a direct effect of major significance upon both buildings.
- 13.7.4 Within the area of High sensitivity, it is proposed to build six residential buildings along the south-eastern edge of the Woodbank Estate on Lower Stonymollan Road and five Luxury Accommodation lodges immediately north-west of the eastern driveway (along the Old Luss Road). This will introduce development into a previously undeveloped area of the estate, reducing the extent of the landscaped parkland and appearing in views from Woodbank House, it is also proposed to construct six Woodland Lodges within the footprint of the walled garden and its associated buildings. Car parking spaces are proposed for the land between the house and the stable block (ABC, 2019a).
- 13.7.5 The borders of the estate, and the existing driveways and woodland plantings would be retained. The enclosing wall around the walled garden will be retained, as will the course of the woodland path leading north through and from the garden. The area intended for car parking spaces currently comprises overgrown gravel and a former stable yard. Although the extent of the landscaped parkland would be reduced, it will remain possible to understand and appreciate

the contribution made by setting to the cultural significance of the house and its grounds. It is considered that these developments would, in the absence of mitigation, result in adverse setting impacts of medium magnitude, resulting in adverse effects of moderate significance.

- 13.7.6 Within the area of Low sensitivity, it is proposed to build ten Woodland Lodges in the south-western corner of the estate, and 15 Bothies in the woodland in the north-western corner of the estate. Eleven Lodges are also to be built in the northern corner of the estate. These elements of the proposed development will preserve the forest paths and existing woodland will be retained where possible. New tree planting will also take place (ABC, 2019a).
- 13.7.7 The topography and woodland will screen these buildings from all but the closest views, and the secluded, enclosed feel of this part of the estate will be retained. It is considered that these developments would, in the absence of mitigation, result in adverse setting impacts of negligible magnitude, resulting in adverse effects of negligible significance.

Loch Lomond, Drumkinnon Bay, Winch House including Slipway, LB46721

- 13.7.8 Elements of the redesigned proposed development in the north-eastern corner of the site entail the reconfiguration of existing car parking to increase capacity, retention of most of the existing woodland, and the construction of a hotel, water park and restaurants on the shore of the lagoon to the south-west of the winch house.
- 13.7.9 Although the redesigned hotel and water park would still appear in views to the south-west from the winch house, the redesign of the car parks would not substantively alter inland views. Views in these directions are of limited relevance to the cultural significance of the winch house and slipway. It would remain possible to appreciate and understand the contribution made by setting to the Winch House and Slipway's cultural significance.
- 13.7.10 There would be no impact upon Drumkinnon Bay Winch House and Slipway.

13.8 Mitigation and Enhancement

Woodbank House and garden buildings, Category A, LB1125

- 13.8.1 The mitigation and enhancement measures proposed in the EIA (**Section 13.8**) remain applicable to these amended proposals. However, as a result of the amended proposals for Woodbank House and stables, the original proposals for conservation and retention of the buildings' facades will be extended to include the renovation of the buildings to enable their re-opening as residential units.
- 13.8.2 As stated in the EIA, the detailed scope and timing of these measures will be developed and designed according to advice and guidance received from HES and the LLNTP Conservation Officer, but broad proposals are outlined below:
- A programme of historic building recording (HBR) will be undertaken in connection with Woodbank House and its associated structures and estate grounds (including the walled garden),
 - The results of the HBR work will be used to inform the design of a flexible approach to the preservation of remaining facades of Woodbank House and the restoration where viable of associated listed structures; and,
 - Conservation work will pay particular attention to the east and south facades of Woodbank House, the stable block and the walled garden, and their restoration and incorporation within the proposed development.
 - The results of the EIA, HBR and conservation work will also be used to inform the production of interpretive materials for public dissemination. Such materials could take the form of information panels and/or a heritage trail around the grounds of Woodbank House describing and illustrating the history of the house and estate, whilst also providing information on the preservation and renovation process.

Loch Lomond, Drumkinnon Bay, Winch House including Slipway, LB46721

- 13.8.3 There will be no impact upon the Winch House and Slipway and no mitigation is proposed in respect of these assets.

13.9 Residual Effects

- 13.9.1 Taking account of proposed mitigation and enhancement measures, the residual potential effects from the construction and operation of the proposed development are identified in **Table 13.2: Residual Effects**.

Table 13.2: Residual Effects

Asset	Impact	Mitigation	Residual effect	Significance (EIA Terms)
Woodbank House and garden buildings (LB1125)	Beneficial, medium magnitude	Programme of historic building recording, followed by preservation/restoration of Woodbank House and stable block to enable re-use as residential units.	Beneficial, high magnitude, major significance	Significant
Woodbank Estate – areas of High Sensitivity	Adverse, medium magnitude	Public dissemination of research into the Woodbank Estate, creation of interpretive materials and/or a heritage trail	Adverse, negligible magnitude, negligible significance	Not significant
Woodbank Estate – areas of Low Sensitivity	Adverse, negligible magnitude	Public dissemination of research into the Woodbank Estate, creation of interpretive materials and/or a heritage trail	Beneficial, low magnitude, minor significance	Not significant

14 Socio-economics, Tourism, Recreation and Public Access

14.1 No Changes

15 Impact Interactions

15.1 No Changes

16 Schedule of Proposed Further Mitigation and Enhancement Measures

16.1.1 Table 16.1 below provides a new schedule of all further mitigation and enhancement measures now proposed in respect of the proposed amended scheme. This incorporates relevant further mitigation and enhancement previously identified within the original ES where this remains valid, combined with all newly proposed further mitigation and enhancement measures identified within Chapters 6 – 14 of this ES Addendum above. As such, **Table 16.1** fully replaces the original schedule of further mitigation provided in **Table 16.1** of the original ES. However, it should be noted that this schedule addresses further mitigation and enhancement only and does not account for all proposed embedded mitigation measures.

Table 16.1 – Schedule of Proposed Further Mitigation and Enhancement Measures

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
Chapter 6 – Ecology and Woodland	Construction Phase
	1. Appointment of Environmental/Ecological Clerk of Works (ECoW) team to monitor compliance, produce auditable records and provide onsite advice (different environmental constraints may require ECoWs of differing specialisms).
	2. Pre-construction and regular protected species surveys.
	3. Provision of information regarding ecological sensitivities as part of site induction.
	4. Seasonal working checks and restrictions: where vegetation (including woodland, grassland, hedgerow, scrub and trees) clearance is to be undertaken in March to August inclusive, a pre-works nesting bird check would be carried out by a suitably qualified ecologist. If nesting birds are found an appropriate works exclusion area would be put in place to protect the nest until the young have fledged.
	5. Implementation of 10mph speed limit for all site traffic.
	6. Safeguarding of protected species: In the event that a protected species is discovered on site, the contractor will be expected to comply with relevant legislation and guidance. Where necessary all work in that area would stop immediately and the site ECoW contacted.
	7. Site compounds/material and plant storage areas to be located as far as possible from watercourses.

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	8. Commitment to site and design working areas and building footprints (at detailed design stage) with the objectives of minimizing habitat disturbance/loss and safeguarding important ecological features (IEF).
	9. Undertaking an early flowering plants survey prior to the detailed design of the proposed development.
	10. Any trenches or pits made during construction (for example that may be present to lay infrastructure) to be covered at the end of each working day or a wooden plank placed inside to allow any mammal species to escape, should it fall in. Any temporarily exposed open pipe system to be capped in such a way as to prevent wildlife gaining access.
	11. Use of geoweb to protect adjacent tree rooting systems from development within woodland.
	12. Porous gravel or similar for proposed parking.
	13. Turf translocation if required.
	14. Tree survey to be undertaken of focused areas of the development to provide information on individual trees in relation to design and construction. This would informing the production of method statements for particular construction activities within woodland habitats.
	15. New planting to compensate for any tree loss within the development footprint shall comprise native species trees reflecting the desired semi-natural oak woodland of Drumkinnon and Woodbank woodland features; and the alder dominated riparian woodland of the River Leven. New planting shall also include a mix of appropriate understory trees and shrub species particular to these woodland types such as birch, hazel, rowan, holly and willow species.
	Operational Phase
	16. Retention of the riparian woodland edge to the River Leven;
	17. Riverside lodges which appear to be positioned on or close to the existing open grassland at this location followed by infill planting which would increase woodland cover in this zone;
	18. Retention and development of a tree lined avenue along Pier Road;

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	19. Drumkinnon's woodland glades and existing pathways dictating lodge and access locations;
	20. Woodbank's grassland field receiving generous infill planting surrounding the lodge locations;
	21. British Standard tree protection barriers installed at the following locations in order to protect retained nearby trees. Pier Road car park; Drumkinnon Entrance Buildings; Woodland Lodge (WL)11-16 at Woodbank; and Service area and Deliveries;
	22. A change from 'Luxury Accommodation', at the northern section of Drumkinnon Bay, has been altered to 'Boat House'. This change should not fundamentally alter the woodland use and management in this area as these woodland are already extensively accessed for recreational purposes;
	23. Commitment for street lighting and other lighting associated with the development to be designed (at detailed design stage) in consideration with habitat use by nocturnal species. Where possible lighting to be positioned upon or around the completed development so it would not illuminate surrounding woodland and watercourses.
	24. An appropriate speed limit (20mph or less) to be applied to all traffic.
	25. Visitor management facilities/entrance area to incorporate suitably sized and located waste and recycling receptacles, to be combined with appropriate collection and transportation regimes.
	26. Management of the riparian and shoreline habitats, including the removal of invasive plant species and encouraging appropriately vegetated banks comprising native woodland species, to enhance the composition of vegetated connectivity between woodland and watercourses.
	27. A selection of bat and bird boxes to be installed throughout woodland habitats at the site.
	28. An infusion of native, berry producing, shrub species to be planted within existing woodlands and along connective linear vegetated features to enhance the foraging and sheltering resource for a variety of mammal and bird species which may frequent the site in the future.
	29. Integrated bat roost and bird nesting provisions to be installed into new structures on site to increase roosting provisions for these species.
	30. Annual vegetation and protected species surveys

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
Chapter 7 – Traffic and Transport	Construction Phase
	31. None required
	Operational Phase
	An Outline Travel Plan 32. Contained within the Transport Assessment an Outline Travel Plan incorporates actions and incentives and an ongoing programme of delivering sustainable travel options for the proposed development site. This includes several potential measures which could be implemented to support sustainable travel choices for future employees, through both induction processes and provision of a travel information pack for new starts. This would also include the provision of a Residential Travel Information Pack for the residential component of the site, which will be issued at point of occupation.
	Monorail 33. A monorail is incorporated in to the development proposals to provide better connectivity between Zone A (Station Square) and Zone C (Pierhead). This will provide better connectivity between Balloch Village and Loch Lomond Shores, through provision of a safe, direct and convenient means of transport. During the winter months/ dark nights the existing Pier Road and walking routes adjacent to the River Leven (Riverfront area) are not conducive to walking as function of reduced personal security, and the overall distance. As such, the monorail will help support an evening economy at the existing and with-development scenarios;
	Public Transport 34. The proposed WDC plans for the Station Square enhancements on Balloch Road between the proposed new Station Square development (Zone A) and Balloch Railway Station, will help deliver enhanced access between the station and the proposed development site as well as the wider village of Balloch. It is also understood that revised parking arrangements are being considered for Balloch Rail Station as part of the wider “Balloch Village Parking Proposals” which are hoped to alleviate parking issues in the locality as well as encourage an uptake in rail usage; 35. Discussions have been undertaken with ScotRail Abellio to seek to agree in principle the mutual benefits of promoting access to the development site by rail. Whilst any interventions are still in early developmental stages, these are presently anticipated to include: 36. Shared-ticketing: whereby rail and attraction-tickets can be purchased simultaneously, incorporating some form of discount for the passenger/ visitor;

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>37. The opportunity to promote the new West Riverside development as a destination, where branding/ wrapping the trains can be used as a marketing/ promotional incentive; and</p> <p>38. The potential for further studies into the need for enhanced rail services either by frequency and/ or selective station stopping to improve journey times.</p>
	<p>Remote Lodge Accommodation Parking</p> <p>39. For accommodation land uses, except for the Woodbank House site, the arrivals and parking for this element can be managed from the point of booking, whereby visitors can be advised of the intended arrival and check-in arrangements. The intention is that accommodation-based-visitors and associated parking will be segregated from other land-uses and that parking will be provided remotely from the accommodation. Small buggies will be used to transport visitors and baggage to their holiday accommodation. This will reduce both unnecessary vehicular circulation at arrival and departure times but is also expected to reduce the use of cars for short-trips by guests throughout their stay: it will be more convenient to walk, cycle or use the mono-rail for shorter local and site-internal trips.</p>
Chapter 8 – Noise and Vibration	Construction Phase
	<p>40. As part of the masterplan design process EnviroCentre used CadnaA noise modelling software to inform the design of any mitigation measures if necessary for the year of development opening scenario (2020). The results were assessed in accordance with TAN 2011. Exceedances of the Council's noise criteria were identified in one of the garden/terraces of the most exposed properties.</p>
	<p>41. The level of significance of any TAN 2011 exceedance within the current masterplan is now slight. The design mitigation features incorporated into the final masterplan design is of one stretch of 2m high close boarded timber garden fencing at the garden /terrace boundary of NSR 19.</p>
	Operational Phase
	<p>42. Daytime external noise levels are predicted to meet West Dunbartonshire Council's noise target of 55dB(A) in the majority of properties. Noise exceeds the target noise criteria in some locations by up to 2.9dB(A). The TAN 2011 level of significance of the exceedances is Slight. In line with consultation carried out with West Dunbartonshire Council, the daytime external noise, when incorporating the site design mitigation features, has been found to be within acceptable limits and does not need to be reduced further.</p>
	Construction Phase

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
Chapter 9 – Air Quality	43. Taking account of proposed embedded mitigation measures, the assessment provided in Section 9.7 predicts that no significant effects on air quality are considered likely. No further mitigation, compensation or enhancement measures are therefore required or proposed.
	Operational Phase
	44. Not Required
Chapter 10 – Water, Hydrology and Flood Risk	Construction Phase
	General Mitigation measures
	45. A CEMP will be in place during the construction phase and will detail surface water management, pollution prevention measures, and construction method statements. The CEMP will remain a live document throughout the construction phase and will be continually updated as work progresses. All mitigation measures will be incorporated into the CEMP. The CEMP will be submitted to the Council for approval prior to commencement of the construction works, in consultation with SEPA and other agencies such as SNH.
	46. The CEMP will include as a minimum measures relating to: construction traffic routing, site access/deliveries, parking, contractor management, parking, fuels and materials storage, standard dust and noise suppression techniques and standard pollution presentation and control techniques.
	47. Any construction activities within a 5m strip along waterfronts will be subject to specific consideration within the CEMP to be agreed with the National Park Authority (NPA) prior to commencement.
	48. An Environmental Clerk of Works (ECOW) will ensure that the CEMP and associated mitigation measures are implemented effectively. Best practice will be adopted throughout the construction phase following current guidance.
	49. A pollution prevention and response plan will be set out in the CEMP. This will provide site spill response procedures, emergency contact details and equipment inventories and their location. All staff will be made aware of this document and its content during site induction. A copy will be available in the site office at all times.
	50. All activities with potential to impact on the water environment require to be authorised under the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). The level of authorisation required is dependent on the anticipated environmental risk posed by the activity to be carried out. Liaison with SEPA operations team will be undertaken at an early stage to further confirm this. These activities could include construction drainage, dewatering, storage of oil and the three watercourse crossings.

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	51. Revised levels of authorisation, including amendments to the General Binding Rules (GBR), came into effect on January 1st 2018. These include the need for CAR authorisation for drainage of construction sites over four hectares in size, as well as a change to the size of development that will require authorisation for the permanent surface water drainage. The below summarises the requirements of these regulations.
	52. For the construction SuDS associated with a site of this size, a complex CAR licence will be required, as detailed in the CAR Practical Guide (SEPA, 2018).
	Surface Water Management
	53. Surface water drainage arrangements for the construction phase will be in line with SuDS principles, incorporating appropriate treatment and attenuation prior to discharge to the water environment in accordance with the required CAR authorisation and relevant GBR. It is proposed to replicate natural drainage around construction areas and to use source control to deal with rainwater in proximity to where it hits the ground.
	54. The implementation of a given SuDS measure will be dependent upon detailed site and hydrological investigations. Detailed surface water drainage proposals and methodology for the construction phase will be detailed within a Pollution Prevention Plan (PPP) which will be included within the CEMP. The SuDS features will be installed prior to the main construction activities (including removal of vegetation and any earthworks). Suitable measures will be in place at all times for treatment of runoff from construction areas, to prevent the release of pollutants including sediment to adjacent surface water features and GWDTEs.
	55. Clean runoff from vegetated areas or offsite will be kept clean and diverted around works to prevent mixing with silt-laden water.
	56. Surface water management measures employed during the construction phase should be regularly inspected and maintained to check that they are working effectively and that there are no blockages or unexpected discharges.
	57. The risk of oil contamination will be minimised by good site working practice (further described below) but should a higher risk of oil contamination be identified then an oil separator will be considered.
	58. A minimum buffer zone of 5m will be maintained along the waterfronts. No construction activities will take place within this buffer zone, including movement of construction machinery, stockpiling and construction of SuDS features, unless they have been specifically considered and permitted within a CEMP
	Earthworks

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	59. Areas stripped of earth and vegetation will be kept to a minimum at any one time. Soil loss and erosion will be minimised through careful storage, reinstatement and re-vegetation. Stockpiles will be placed in areas of minimal risk of slippage or erosion from drainage and will not be located within 20m of any watercourses or ditches.
	60. Any runoff from earthworks and stockpiles will be passed through appropriate construction SuDS measures prior to discharge to the water environment.
	61. The time excavations are kept open for will be kept to a minimum to avoid ingress of water, minimise erosion and the need for dewatering. Drainage or pumping from excavations will be minimised through appropriate design. Temporary cut-off drains will be installed if required to prevent surface water runoff entering excavations.
	62. Any dewatering will comply with GBR2 and GBR5. If abstraction exceeds 10m ³ per day a CAR registration or licence will be required, which will be obtained prior to the commencement of the abstraction. Any water pumped out of excavations will be treated by passing through a SuDS feature prior to discharge to the water environment.
	Construction tracks
	63. Access tracks used during construction (i.e. not the final road layout) will incorporate appropriate drainage measures including ditches, camber to shed water to the edges, frequent cross drains and trackside grips/offlets to prevent the tracks acting as a preferential drainage route and to protect the water environment. Any trackside discharge will be passed through appropriate construction SuDS measures prior to discharge to the water environment. Water will not be allowed or encouraged to pond in the track where possible.
	Oils, Fuels, Site Vehicles and Welfare facilities
	<p>64. The mitigation measures to minimise risk of contaminant release will be in line with the updated Controlled Activities (Scotland) Regulations which will come into force on 1st January 2018. These new General Binding Rules (GBRs) consolidate the provisions of the Water Environment (Oil Storage)(Scotland) Regulations 2006 into CAR, and extend the application of those provisions. The relevant PPGs will also be used to guide the embedded mitigation. This includes the following:</p> <ol style="list-style-type: none"> 1. Storage of oil and fuels on site will be designed to be compliant with GBRs 26-28 and any bunds will provide storage of at least 110% of the largest tank's maximum capacity; 2. The storage of oil in a portable container with a capacity of greater than 200 litres on site will not be permitted; 3. Multiple spill kits will be kept on site; 4. Drip trays will be used while refuelling; and

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	65. Regular inspection and maintenance of vehicles, tanks and bunds will be undertaken.
	66. Welfare facilities will include closed-system toilets, with disposal of foul drainage at a suitable off-site facility.
	67. Concrete and cement mixing should be sited on an impermeable designated area and at least 10m away from a watercourse or surface water drain, to reduce the risk of run-off entering a watercourse. Equipment will be washed out in a designated area, specifically designed to contain wet concrete and wash water. Wash waters should be discharged to the foul sewer with prior permission from Scottish Water or disposed off-site at an authorised facility.
	68. All chemicals and hazardous substances will be stored safely, away from watercourses and drains in line with current best practice. They should be disposed of in line with duty of care requirements.
	Operational Phase
	69. The proposed surface water and SuDS scheme (see Section 11.6) will require regular maintenance. This maintenance will include the regular debris clearing and cutting of grass of surface SuDS features, and the inspection and repairs to underground features if necessary. The responsibility for the maintenance of the drainage network will lie with the organisation that adopts the network. Details of the proposed drainage strategy for the site are covered in Appendix 11.3 .
	70. During the operational phase there should be no requirement for groundworks. However, should groundworks be required mitigation highlighted in the construction sections above will be adopted as appropriate.
Chapter 11 – Ground Conditions and Geology	Construction Phase
	71. None required
	Operational Phase
Chapter 12 - LVIA	72. None Required
	Construction Phase
	73. No further construction stage mitigation proposed
	Operational Phase
	74. Commitment to the use of sensitive materials, to be specified at detailed design stage.
	75. Commitment to the implementation of a landscape scheme that ensures enough compensatory planting that there is no overall loss of woodland, to be specified at detailed design stage; and

ES / ES Addendum Chapter and Topic	Proposed Further Mitigation and Enhancement Measures
	<p>76. Commitment to the retention of a woodland buffer to separate properties on Old Luss Road with the proposed site of the service area. To be confirmed at detailed design stage.</p>
Chapter 13 – Historic Environment	Construction Phase
	<p>77. A programme of programme of historic building recording (HBR) will be undertaken in connection with Woodbank House and its associated structures and estate grounds (including the walled garden),</p>
	<p>78. The results of the HBR work will be used to inform the design of a flexible approach to the preservation of remaining facades of Woodbank House and the restoration where viable of associated listed structures; and,</p>
	<p>79. Conservation work will pay particular attention to the east and south facades of Woodbank House, the stable block and the walled garden, and their restoration and incorporation within the proposed development.</p>
	Operational Phase
	<p>80. The results of the EIA, HBR and conservation work will also be used to inform the production of interpretive materials for public dissemination. Such materials could take the form of information panels and/or a heritage trail around the grounds of Woodbank House describing and illustrating the history of the house and estate, whilst also providing information on the preservation and renovation process.</p>
Chapter 14 - Socio-Economics, Tourism, Recreation and Public Access	Construction Phase
	<p>81. None required</p>
	Operational Phase
	<p>82. None Required</p>

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All of our work, from the engineering of landmark buildings and critical infrastructure to the spatial planning and economic evidence in support of development, is evidence based and informed by a deep understanding of what it takes to deliver construction.

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Geotechnical
Planning, Development
and Economics

West Riverside and Woodbank House

Environmental Statement Addendum: Volume 2 – Technical Appendices

On behalf of **Flamingo Land Ltd and Scottish Enterprise**



Project Ref: 35854 | Rev: 01 | Date: March 2019



Document Control Sheet

Project Name: West Riverside and Woodbank House

Project Ref: 35854

Report Title: Environmental Statement Addendum: Volume 2 – Technical Appendices

Date: March 2019

	Name	Position	Signature	Date
Prepared by:	Various Technical Authors			February – March 2019
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Approved by:	Mark Johnston	Senior Associate Planner	MJ	March 2019
For and on behalf of Peter Brett Associates LLP				

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Appendix 1 – Introduction

There are no appendices associated with **Chapter 1 – Introduction** of ES (Addendum Report, March 2019) Volume 1.

Appendix 2 – Site and Surrounding Area

There are no appendices associated with **Chapter 2 – Site and Surrounding Area** of ES (Addendum Report, March 2019) Volume 1.

Appendix 3 – The Proposed Development

There are no appendices associated with **Chapter 3 – The Proposed Development** of ES (Addendum Report, March 2019) Volume 1.

Appendix 4 – Assessment Methods

There are no appendices associated with **Chapter 4 – Assessment Methods** of ES (Addendum Report, March 2019) Volume 1.

Appendix 5 – Legislative and Policy Context

There are no appendices associated with **Chapter 5 – Legislative and Policy Context** of ES (Addendum Report, March 2019) Volume 1.

Appendix 7 – Traffic & Transport

There are no appendices associated with **Chapter 7 – Traffic & Transport** of ES (Addendum Report, March 2019) Volume 1.

Appendix 8 – Noise

There are no appendices associated with **Chapter 8 – Noise** of ES (Addendum Report, March 2019) Volume 1.

Appendix 9 – Air Quality

There are no appendices associated with **Chapter 9 –Air Quality** of ES (Addendum Report, March 2019) Volume 1.

Appendix 11 – Geology and Ground Conditions

There are no appendices associated with **Chapter 11 – Ground Conditions** of ES (Addendum Report, March 2019) Volume 1.

Appendix 14 - Socio-Economics, Tourism, Recreation and Public Access

There are no appendices associated with **Chapter 14 – Socio-Economics, Tourism, Recreation and Public Access** of ES (Addendum Report, March 2019) Volume 1.

Appendix 15 – Impact Iterations

There are no appendices associated with **Chapter 15 – Impact Iterations** of ES (Addendum Report, March 2019) Volume 1.

Appendix 16 – Schedule of Proposed Further Mitigation and Enhancement Measures

There are no appendices associated with **Chapter 16 – Schedule of Proposed Further Mitigation and Enhancement Measures** of ES (Addendum Report, March 2019) Volume 1.

Appendix 10 – Water, Hydrology and Flood Risk

Appendix 10.1 – Flood Risk Clarifications

Riverside West: Flood Risk Clarifications – Briefing Note 01

Introduction

- This briefing note has been produced to summarise the analysis undertaken to establish the extent of flooding from Loch Lomond affecting the Pier Head area of the West Riverside masterplan (Area C). This note is intended to inform a meeting with SEPA to discuss clarifications requested in relation to the above areas.
- The development extents shown on the masterplan are indicative at this stage and do not represent a detailed design, purely the general area where activities are proposed.

Area C - Pier Head

- A review of existing information has been undertaken to establish the zones of flooding influence from Loch Lomond and the River Leven flooding to inform the masterplan layout.
- A key element of the masterplan is providing a hotel with loch frontage that can be appropriately sited without any negative impacts on flood risk.
- A detailed modelling study of the River Leven was undertaken for West Dunbartonshire Council by Jacobs in 2002 and the hydrological inputs were updated 2009. This model extended from Loch Lomond to the Firth of Clyde and has been used to inform design flood levels for the masterplan.
- Consultations with SEPA resulted in an updated review of the hydrological conditions, with projected 1 in 200 year return period flows increasing by between 2% - 9% depending on the method of analysis (single site analysis and pooling group respectively). The Jacobs 2009 report included model scenarios for the 1 in 200 year, 500 year (equivalent to 1 in 200 year + %) and 200 year future climate scenario (1 in 200 year plus %). These three model scenarios were considered to remain appropriate to inform the masterplan development.
- The 2009 model has three cross sections around the Pier Head area (XS_16, XS_27 & XS_33) along with an upstream water level (XS_) and remaining model sections XS_412 onwards downstream along the River Leven. The model cross sections around the Pier Head area extend to the high points of the right bank of the river channel and the 2009 mapping projected these levels to surrounding areas using a sparse coverage of topographic data in this area.
- Review of the model results across the range of modelled flows show that the water levels adjacent to the pier head area are essentially level, with a variation of 0.01 m over the three cross sections spanning a distance approximately 250 m, a pattern that occurs under all modelled flow scenarios. From XS_338 downstream there is a consistent drop in water levels downstream through all modelled flow scenarios. The model section plan and results are enclosed again for ease of reference.
- Possible changes in model channel cross sections in the vicinity of the site since the original model development are considered to be low given that there will be a negligible sediment input from the loch and the channel banks are well vegetated and relatively stable. West Dunbartonshire Council were consulted and they did not have the original model sections used in the study.
- The 2009 study included an extreme value analysis on the water levels recorded on Loch Lomond at Ross Priory, approximately 6 km from the site (1978-2008). This analysis included the highest recorded loch level

to date, which was on 14/ / 06 and taken to be . 223 mAOD, while the SEPA record notes this as being . 374 mAOD, a difference of 0.15 m. The 2009 study predicts a 1 in 200 year return period loch level of 1. 1 mAOD. A loch level – river flow relationship was derived between the gauged loch and river data. This had good agreement between measured events, however at the more extreme events, the estimates were slightly lower than that of the extreme value analysis.

- . The enclosed layered pdf (Drawing 169659_ 1) contains individual layers with the flood levels noted in paragraphs 5 and 7 above than can be turned on and off. The flood extents for the 2009 model are included as the extents shown in the original 2009 report and also as the predicted flood levels plotted against the detailed 2017 topographic survey (Sheets 1-3 of this survey are enclosed for reference). The 2009 model sections, existing site details and proposed masterplan zones are also provided as individual layers for reference, however these are based on a sparse topographic dataset and are only considered indicative. Some points to note from this are:
 - a. The 1 in 100 year return period event (10.08 mAOD) is confined to the margins of the River Leven. When these levels are extrapolated around the model sections back into the loch, these show the south western car park area also being inundated, but from the loch.
 - b. The 1 in 200 year return period event (. 24 mAOD) extends from the loch into the Pier Head area and into the wider car park area. The river remains within bank at XS_227 and XS_338.
 - c. The 1 in 500 year return period event – 1 in 200 year + 1% (10.45 mAOD) extends from the loch and covers the majority of the existing car park area. The river remains within bank at XS_ 27 and XS_338, however a spill commences from the loch area to the river between the sections where the low point is 10.34 mAOD from the topographic survey.
 - d. The 1 in 200 year return period event +20% (10.57 mAOD) extends across a very similar area to that of the 1 in 500 year with slight increases in extent around the margins.
 - e. The 1 in 200 year return period level for Loch Lomond (10.51 mAOD) extends across the majority of the Pier Head area, indicating this area would be influenced by loch flooding during this event. The extents are very similar area to that of the 1 in 500 year model run, with slight increases around the margins.
- . The points set out above confirm that the flood progression across the Pier Head area initiates from the loch into the lower lying south western car park area. As water levels rise, the loch continues to inundate the site from the north west, with the loch and river at a similar level. At levels above 10.34 mAOD the hydraulic connection extends further to the south east towards XS_3, however levels upstream of XS_338 remain essentially level.
- . It is recognised that the interactions between river and loch flooding a closely interlinked at this location where the river flows out from the loch. However, given the review of design event water levels and flood propagation, it is considered that the south western zone of the Pier Head area is predominantly at risk from loch flooding as shown through the extent of the 1 in 100 year return period levels. As events become more extreme, loch levels rise as they drive the flows in the river, and closer to the river and toward the south eastern zone of this area, river flooding will become more predominant.
- . The masterplan development retains the existing car park use in the Pier Head area and introduces a Visitor Hub, Hotel and Water Park, as shown in Drawing 1696_ 061. It should be noted that at this stage the layout is that of a notional masterplan and not a detailed design.
- . Adopting the 1 in 200 year return period event +20% future climate scenario as the design flood extent, and the 1 in 100 year return period event as an indicator of loch flooding influence, only the reconfiguration of the

existing car parking lies within the flood risk zone of the River Leven. The Water Park lies within the flood risk zone of Loch Lomond and is considered a water compatible development, while a small proportion of the Hotel is shown to also encroach into the Loch Lomond flood risk zone. The Visitor Hub remains outwith the flood risk zones. A long section showing the ground levels through the elements presently shown in the Loch Lomond flood zone is shown in Drawing 169659_ 1 and is plotted in Figure 1 along with modelled water levels which is appended to this note.

- . For any aspects of the masterplan development that may encroach into the flood risk zone of Loch Lomond, two zones of potential compensatory storage have been identified and are shown on Drawing 169659_ 1. These are in areas that would only influence water levels on Loch Lomond and would not influence conveyance of flows to or from the River Leven.
- . The above demonstrates that development as shown indicatively by the masterplan layout can be accommodated within the Pier Head area without adversely impacting flood risk. Final designs would require to confirm that this remained the case through the detailed design phase supported by an updated flood risk assessment.

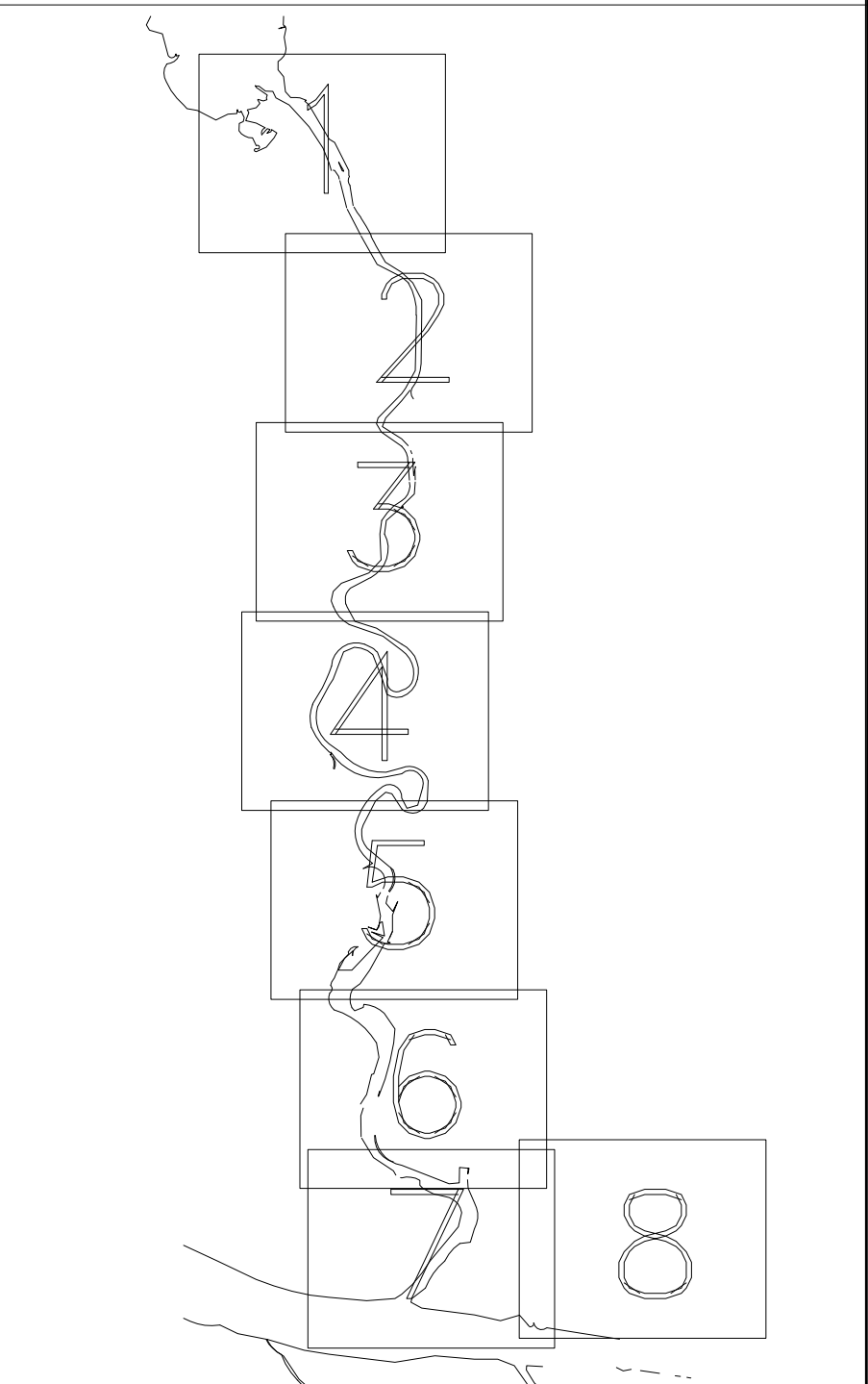
Jacobs 2009 River Leven Model Results



Key

- 1% AEP (100 year return period)
- 0.5% AEP (200 year return period)
- 0.2% AEP (500 year return period)
- New Flood Wall
- New Flood Embankment
- 0.5m Depth of water for 1%AEP

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- The extent of inundation is indicative only, and is based on limited ground level survey information.



0	DEC 08	REVIEW OF FIRST ISSUE	DL	JS	BS
Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
<div>JACOBS</div> <div>95 Bothwell St, Glasgow, G2 7HX</div> <div>Tel:+44(0)141 204 2511 Fax:+44(0)141 226 3109</div> <div>www.jacobs.com</div>					
Client	WEST DUNBARTONSHIRE COUNCIL				
Project	RIVER LEVEN FLOOD STUDY REVIEW & UPDATE OF ORIGINAL WORK				
Drawing title	LOCATION PLAN AND INDICATIVE EXTENT OF INUNDATION AND LOCATION OF POSSIBLE FLOOD DEFENCES SHEET 1 OF 8				
Drawing status					
Scale	1:2500 @ A1		DO NOT SCALE		
Jacobs No.	B1888300				
Client no.					
Drawing number	B1888300-LP-001				Rev
				0	
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.					

Predicted Peak Water Level (mAOD)

Node	50%AEP Q&T	20%AEP Q&T	10%AEP Q&T	4%AEP Q&T	2%AEP Q&T	1%AEP Q&T	0.5%AEP Q&T	0.2%AEP Q&T	0.5%AEP+CC Q&T	0.5%AEP+ Narrow Channel	0.5%AEP Q&T
XS_0	9.17	9.45	9.62	9.81	9.96	10.11	10.27	10.48	10.61		10.27
XS_116	9.15	9.43	9.59	9.78	9.93	10.08	10.23	10.44	10.56		10.23
XS_227	9.15	9.43	9.59	9.78	9.93	10.08	10.24	10.45	10.57		10.24
XS_338	9.14	9.42	9.58	9.77	9.92	10.07	10.23	10.44	10.57		10.23
XS_412	9.13	9.41	9.57	9.76	9.91	10.06	10.22	10.43	10.55		10.22
XS_486	9.12	9.40	9.56	9.75	9.90	10.05	10.20	10.41	10.54		10.20
XS_579	9.11	9.38	9.55	9.74	9.89	10.03	10.19	10.40	10.53		10.19
XS_658	9.10	9.37	9.53	9.73	9.87	10.02	10.18	10.39	10.51		10.18
XS_749	9.08	9.36	9.52	9.71	9.86	10.01	10.16	10.37	10.50		10.16
XS_841US	9.07	9.34	9.50	9.69	9.84	9.99	10.14	10.35	10.48		10.14
XS_841DS	9.06	9.33	9.49	9.68	9.83	9.98	10.13	10.34	10.46		10.13
XS_968	9.04	9.31	9.47	9.66	9.80	9.94	10.10	10.31	10.43		10.10
XS_1039U	9.01	9.29	9.44	9.63	9.77	9.91	10.06	10.26	10.39		10.06
XS_1039D	9.01	9.28	9.43	9.62	9.76	9.90	10.05	10.25	10.38		10.05
XS_1136	8.98	9.25	9.41	9.59	9.73	9.87	10.02	10.22	10.34		10.02
XS_1136U	8.91	9.19	9.34	9.53	9.67	9.80	9.95	10.15	10.27		9.95
XS_1136D	8.90	9.17	9.32	9.51	9.65	9.78	9.92	10.12	10.22		9.94
XS1	8.89	9.16	9.31	9.49	9.63	9.76	9.91	10.10	10.20		9.91
XS2	8.85	9.14	9.30	9.48	9.62	9.76	9.91	10.10	10.21		9.91
XS3	8.63	8.90	9.05	9.22	9.35	9.47	9.61	9.78	9.88		9.61
XS4	8.52	8.81	8.96	9.14	9.27	9.40	9.54	9.72	9.82		9.54
XS5	8.38	8.68	8.84	9.03	9.16	9.30	9.44	9.63	9.73		9.44
XS6	8.27	8.57	8.74	8.92	9.06	9.20	9.34	9.53	9.63		9.34
XS7	8.16	8.46	8.63	8.81	8.95	9.09	9.24	9.42	9.53		9.24
XS8	8.03	8.32	8.50	8.68	8.82	8.96	9.10	9.28	9.37		9.10
XS9	7.89	8.18	8.36	8.55	8.70	8.84	8.98	9.16	9.25		8.98
XS10	7.83	8.10	8.28	8.47	8.62	8.76	8.90	9.08	9.17		8.90
XS11	7.76	8.05	8.23	8.43	8.58	8.72	8.87	9.06	9.16		8.87
XS12	7.69	7.97	8.15	8.35	8.50	8.64	8.79	8.97	9.06		8.79
XS13	7.65	7.93	8.11	8.32	8.46	8.61	8.76	8.94	9.04		8.76
XS14	7.61	7.89	8.07	8.27	8.42	8.57	8.72	8.91	9.00		8.72
XS15	7.52	7.79	7.96	8.15	8.29	8.43	8.57	8.74	8.82		8.57

Extracts from 2017 Topographic Survey (sheets 1-3)



LEGEND	
	Air Valve
	Bombholes
	Bus Stop
	Cable T-V
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CONTROL STATION COORDINATES			
STN	EASTING	NORTHING	LEVEL
ST1	238933.238	681892.505	11.354
ST2	238889.834	682002.526	10.655
ST3	238779.390	682231.971	14.413
ST4	238689.573	682321.028	12.104
ST5	238507.020	682212.872	11.836
ST6	238322.125	685168.275	12.231
ST7	238163.690	681997.329	18.189
ST8	238326.035	681851.711	15.735
ST9	238249.188	682027.115	11.290
ST9A	238202.256	681749.828	17.836
ST8B	238603.404	681724.364	17.481
ST8C	238722.896	681779.390	13.581
ST8D	238822.784	681842.403	11.897



INDICATIVE OF NORTH

Note:
All levels shown are relative to the Ordnance Survey active GPS network.

The co-ordinates shown on this plan are relative to a LOCAL GRID.
The survey is orientated approximately to grid north.



Client : PETER BRETT
2nd FLOOR, 160 WEST GEORGE STREET
GLASGOW
G2 2HG

Project Title:

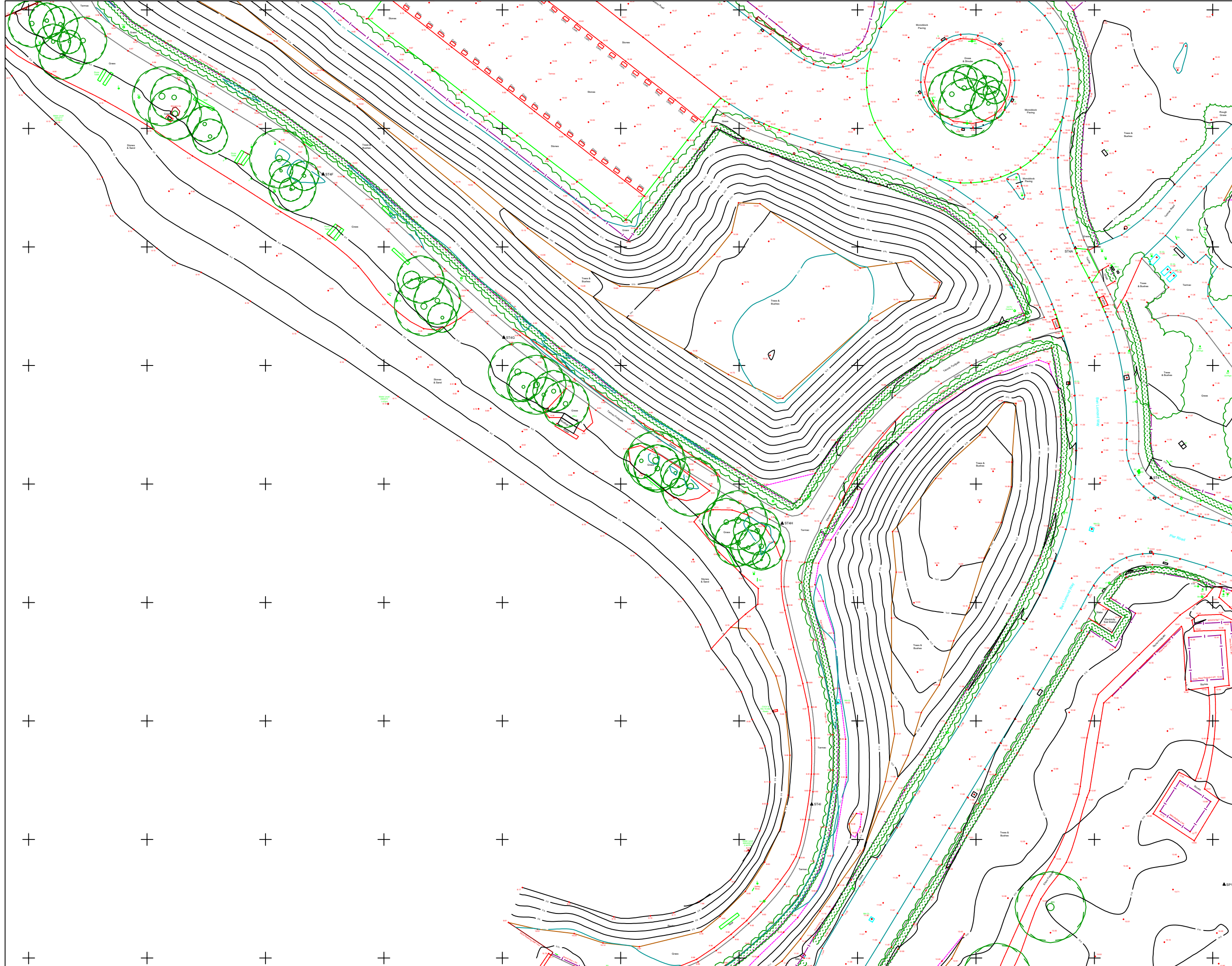
TOPOGRAPHICAL SURVEY

LAND AT BEN LOMOND WAY

BALLOCH

LOCH LOMOND

Sheet Title : SHEET 1 OF 25		Scale : 1:200	
Surveyed date : 30/05/17	Issued date : 31/05/17	Enquiry No : 19353	Project No : 12063
Surveyed by : SF/P.McL	Processed by : DJ	Checked by : KRJA	Approved by : JMK



LEGEND			
	Kids		Air Valve
	Low Kids		Bonhole
	Safety Kids		Rubbish Bin
	Verge		G.S. Landmark
	Footway		Ballpost
	Crash Barrier		Bus Stop
	Wall		British Telecom
	Wall (2/3 scale)		Cable T.V.
	Track (2/3 scale)		Culvert
	Railway		Down Pipe
	Pavement		Drain
	Top of bank		Electricity Pole
	Bottom of bank		Earth Road
	Ditch		Fire Hydrant
	Channel (2/3 scale)		Foot Level
	Water Line		Flag Pole
	Drain		Gully
	Overhead Line		Gas Pipe
	Rock Outcrop		Gate Post
	Building		Gas Valve
	Building Wall		Small IC
	Building Foundation		Inspection Cover
	Building Overhang		Transformer IC
	Hedge (2/3 scale)		Island Level
	Foliage		Roundabout Road Sign
	Town Area		Kick Outlet
	Tree		Leak
	Bush		Lamp Post
			Masonry IC
			Mixer
			Circular Manhole
			Manhole
			Transformer Manhole
			Monitor
			Moving Post
			Marker Post
			Post
			Post Box
			Pipe
			Tall Pit
			Rolling Gate
			Reference Mark
			Road Sign
			Spot Level
			Star Clock
			Stop
			Tree Stump
			Trip
			Trunkroad Level
			Trunkroad Pole
			Trough
			Traffic Signal
			Vent
			Water Level

CONTROL STATION COORDINATES			
STN	EASTING	NORTHING	LEVEL
ST1	238933.238	681882.506	11.354
ST2	238987.834	682002.526	10.605
ST3	238779.390	682231.921	14.413
ST4	238699.573	682221.028	12.104
ST5	238637.620	682213.872	11.836
ST6	238522.146	682158.275	12.231
ST7	238163.690	681997.329	18.189
ST8	238368.053	681851.711	15.735
BTSA	238461.108	682227.115	11.290
STBA	238502.256	681749.828	17.836
STBB	238603.404	681724.364	17.481
STBC	238722.896	681739.390	13.881
STBD	238822.784	681842.403	11.897



INDICATIVE OF NORTH

Notes:

All levels shown are relative to the Ordnance Survey active GPS network.

The co-ordinates shown on this plan are relative to a LOCAL GRID.
The survey is orientated approximately to grid north.



LAND SURVEY SERVICES
Newcastle
The Grainger Suite, Dobson House,
The Regent Centre, Newcastle, NE3 3PQ
Tel: 0191 233 6314 Fax: 0191 233 6337
Email: newcastle@msurveypartners.com

PETER BRETT
2nd FLOOR, 160 WEST GEORGE STREET
GLASGOW
G2 2HG

Project Title:

TOPOGRAPHICAL SURVEY

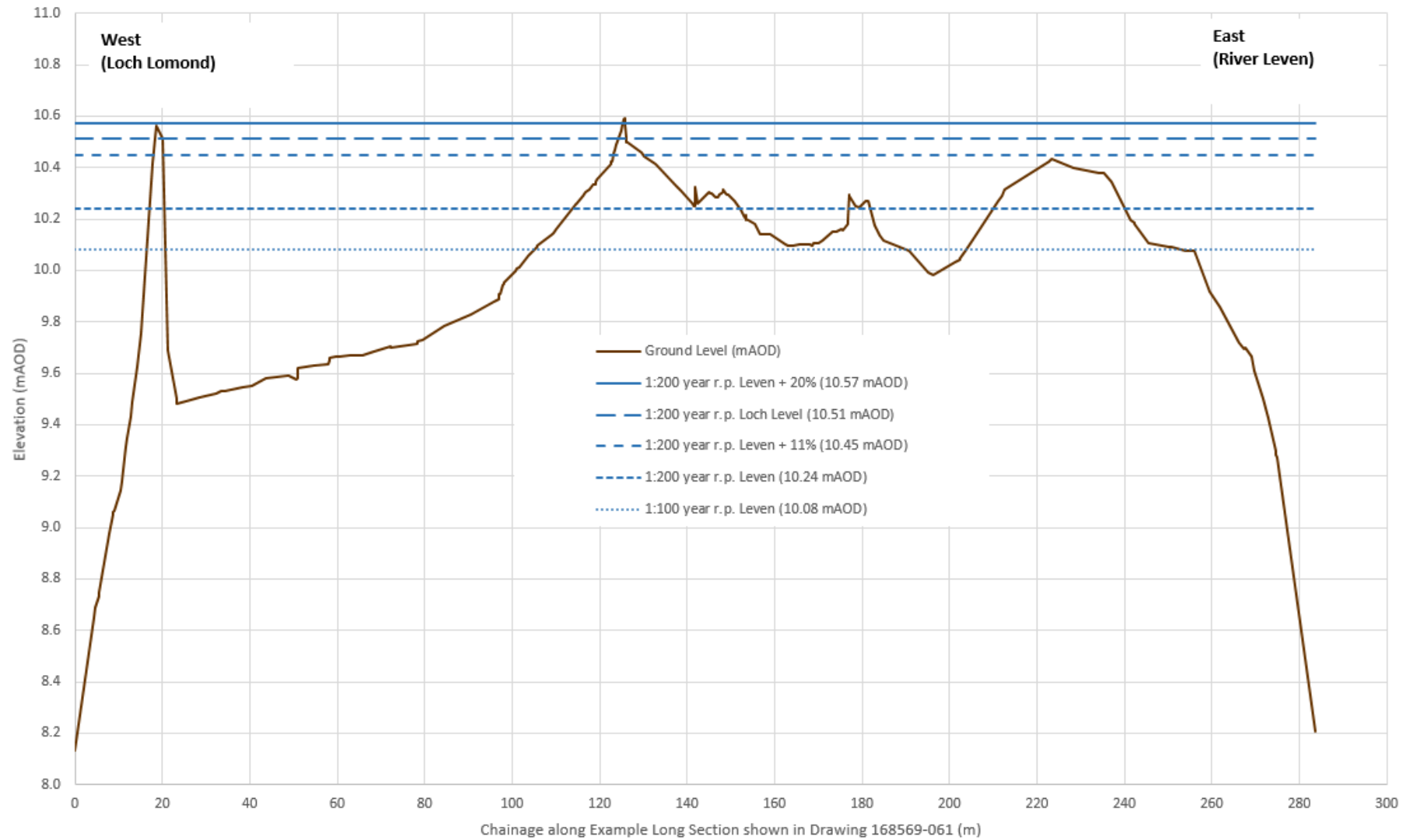
LAND AT BEN LOMOND WAY

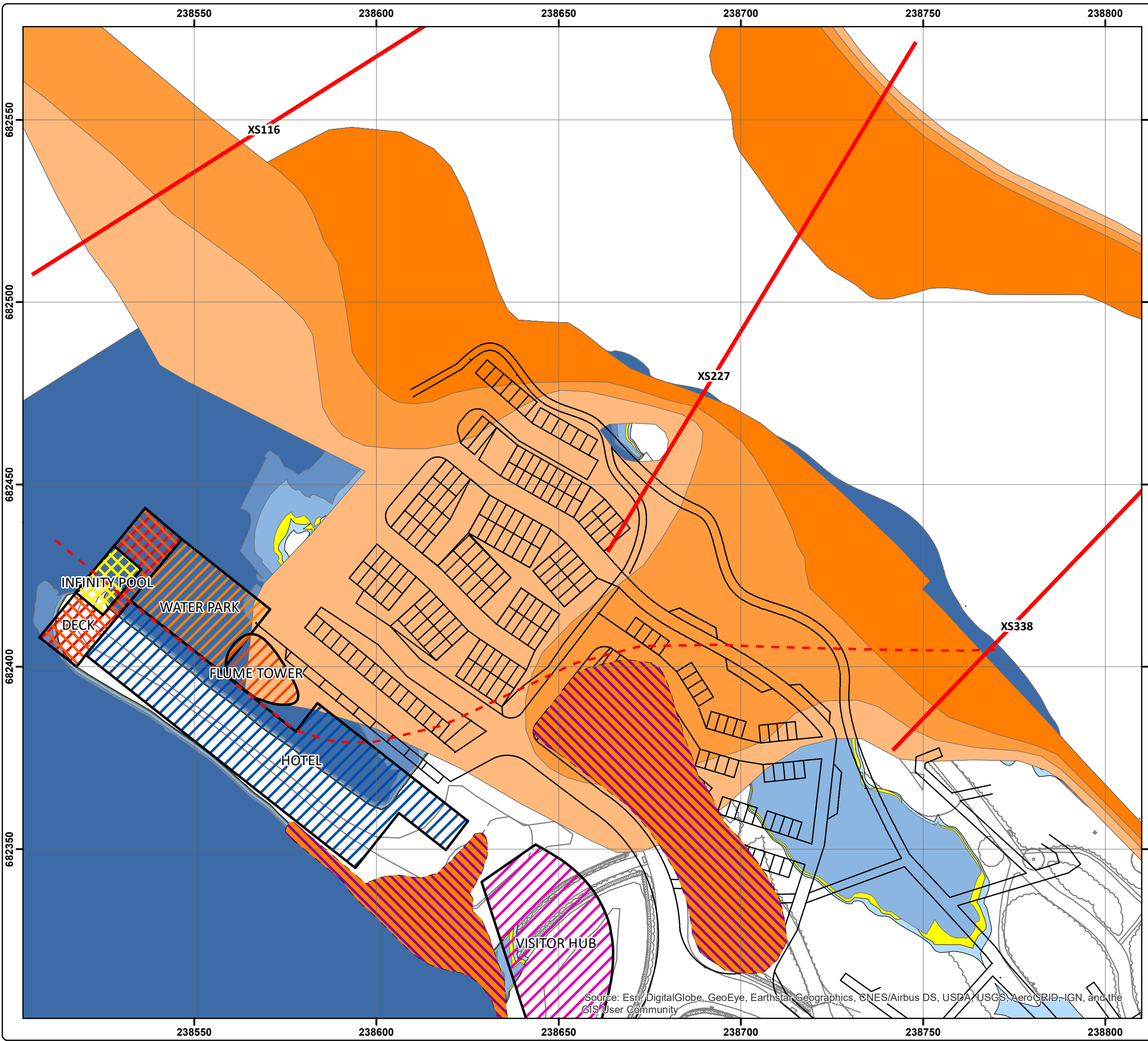
BALLOCH

LOCH LOMOND

Sheet Title : SHEET 3 OF 25		Scale : 1:200	
Surveyed date : 30/05/17	Intstad date : 31/05/17	Enquiry No : 19353	Project No : 12063
Surveyed by : SF/P.McL	Processed by : DJ	Checked by : KRJA	Approved by : JMK

Figure 1: Example long section through Pier Head area (alignment shown in Drawing 168569-061)





Legend

- Jacobs 2009 Model Sections
- Example Long Section
- 2017 Topographic Survey
- 1:100 Year Event - 10.08 mAOD (2009 Topo)
- 1:200 Year Event - 10.24 mAOD (2009 Topo)
- 1:500 Year Event - 10.45 mAOD (2009 Topo)
- 1:100 Year Event - 10.08 mAOD (2017 Topo)
- 1:200 Year Event - 10.24 mAOD (2017 Topo)
- 1:500 Year Event - 10.45 mAOD (2017 Topo)
- 1:200 Year Event + Climate Change - 10.57 mAOD (2017 Topo)
- 1:200 Year Loch Event - 10.51 mAOD (2017 Topo)
- Potential Compensatory Storage Areas

Development Footprint

- Deck
- Flume Tower
- Hotel
- Infinity Pool
- Visitor Hub
- Water Park

Do not scale this map

Client

TSL Contractors Limited

Project

West Riverside Balloch

Title

Flood Extents 2009 and 2017 Topo

Status

WORKING

Drawing No.

168659-061

Revision

Scale

1:1,000

A3

Date

5 Dec 2018

Drawn

JS

Checked

KMD

Approved

KMD

Craighall Business Park, Eagle Street, Glasgow, G4 9XA
Tel: 0141 341 5040
Fax: 0141 341 5045

Riverside West: Flood Risk Clarifications – Briefing Note 02

Introduction

- . This briefing note has been produced to summarise the analysis undertaken to establish the extent of flooding associated with the West Riverside masterplan (Area E).
- . Clarifications have been requested by the Scottish Environment Protection Agency (SEPA) in their response letter, reference: PCS/159219 dated 22 June 2018, to the Planning Application: 2018/0133/PPP, to confirm the floodplain and the associated developable area in relation to Area E.
- . The development extents shown on the masterplan are indicative at this stage and do not represent a detailed design, purely the general area where activities are proposed.

Area E - Woodbank

- . EnviroCentre Limited, in its submitted Flood Risk Assessment (FRA) report of March 2018, stated that detailed Ordnance Survey (OS) mapping indicated that there are 4 watercourses which run through this part of the site, however during the site walkover only two were noted as having significant flows. For the purposes of this FRA, the two watercourses are referred to as Unnamed Watercourse 1 (UW) and Unnamed Watercourse 2 (UW2).

Unnamed Watercourse 1 (UW1)

- . It was noted that UW1 flows along the north of the Woodbank site and runs in a steeply sloping channel through a stone culvert under the Old Luss Road. Any potential flooding arising from UW1 is likely due to the small culvert becoming blocked with debris. In such a scenario, the floodwater inundate the area surrounding the culvert inlet until it overtops onto the road above. It also stated that a stone wall is located above the right bank, along the northern boundary of the Woodbank site, which would prevent flows from routing onto the development site, and would direct flows onto Old Luss Road. There is effectively no floodplain associated with UW1 which would impact the development site.

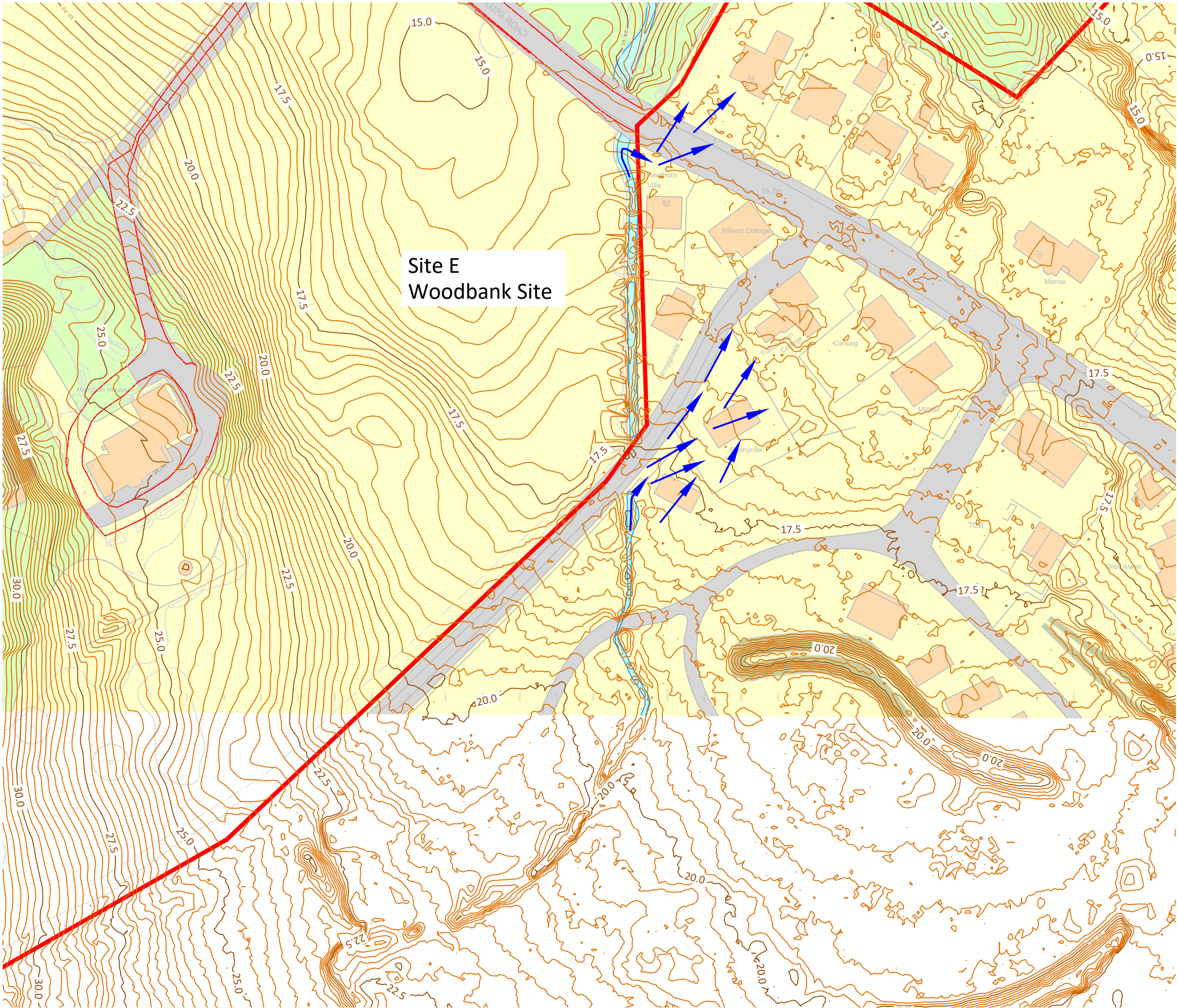
Unnamed Watercourse 2 (UW2)

- . This small burn flows through the south east corner of the Woodbank site, in a northerly direction. The watercourse routes from the caravan park to the east, and is culverted beneath Lower Stoney-mollan Road in a twin pipe arrangement, estimated to be approximately 0.5 – 0.6 m in diameter (each barrel). The burn then flows in a straightened canalised section with stone walls on either bank until it reaches Old Luss Road. It should be noted that it is left bank of this canalised stretch of UW that forms the effective boundary with Area E.
- . Whilst during the site walkover the inlet(s) to the culvert(s) under Old Luss Road were submerged, we have since obtained more information, through the photos taken by a resident and provided to SEPA. One of the photographs that have been made available to SEPA is reproduced as Figure 1.
- . It is evident from the photographs that there are 3 No. culverts with estimated diameters of at 0.6 m.



Figure 1: The two photographs of the 3 culverts viewed from downstream of Old Luss Road

- Based on this information, all flow emerging on the downstream side of the 2 No. similarly sized (. 5 – 0.6 m dia.) culverts under Lower Stoney-mollan Road would be conveyed by the 3 culverts under Old Luss Road as their hydraulic conveyance capacity is larger, as long as the capacity is maintained. Any flooding due culvert capacity exceedance will first occur at the inlet to culverts under Lower Stoney-mollan Road with the floodwater being conveyed overland in the north-easterly direction, away from the development site. To appreciate the topography in the surrounding area of UW2 in the vicinity of Woodbank Site, a topographic contour map developed from a 2017 topographic survey of the site supplemented by LiDAR ground model data outwith the site boundary is enclosed as Drawing 1686- 062.
 - However, as the photos show the culverts under Old Luss Road are presently partially blocked due to sediment build up and therefore their conveyance capacity is significantly reduced. This clearly is a maintenance issue. Assuming the scenario of restricted capacity within the culverts persisted, it is anticipated that flood flows would accumulate around the inlet and potentially spill onto both the Woodbank site and also onto the existing residential gardens to the east. The available topographic survey for Woodbank Site (Sheet 16 of 25 enclosed), includes only a small part of the left bank (of UW around the Old Luss Road culvert inlet. A review of this topographic survey shows that ground levels on the rise up to . 00 mAOD close to the inlet. Thereafter, as one moves away from the UW2 in the north-westerly direction, close to Old Luss Road, onto the site the levels drop forming a small depression-like feature.
 - Despite this drop in ground levels, no fluvial floodwater is expected to spread further onto the site until the . 00 mAOD level is breached. However, before this breach could occur parts of the right bank and the road level will have already been topped. Therefore, a larger amount of the overtopping floodwater would flow in the north-easterly direction over the road and through the residential gardens as dictated by the relatively flatter topography as shown in Appendix A, where the level on Old Luss Road adjacent to Hillend Cottage is shown as . 70 mAOD.
 - On the left bank, due to the relatively steeper sloping nature of the Woodbank site, as one moves eastwards/ south-eastwards, it is not considered that flooding would extend far onto the site and so only a small corner of the development area may potentially be affected. As noted above, if a reasonable maintenance regime of culverts is implemented, it is unlikely there would be any flooding to the site. To account for the uncertainty in implementing such a maintenance regime by allowing a sufficient buffer of at least 5 m wide will ensure that no part of the proposed development will be at medium – high likelihood of flood risk.
- 13.** The above demonstrates that development as shown indicatively by the masterplan layout can be accommodated without adversely impacting flood risk. Final designs would require to confirm that this remained the case through the detailed design phase supported by an updated flood risk assessment.



- Notes
- Site Boundary
 - 0.25m Contours
 - 2.50m contours
 - Spill Overland Flow Paths

Do not scale this drawing

Rev	Date	Amendment	Initials



Craighall Business
Park, Eagle Street,
Glasgow, G4 9XA
Tel: 0141 341 5040
Fax: 0141 341 5045

Client
TSL Contractors Limited

Project
West Riverside Balloch

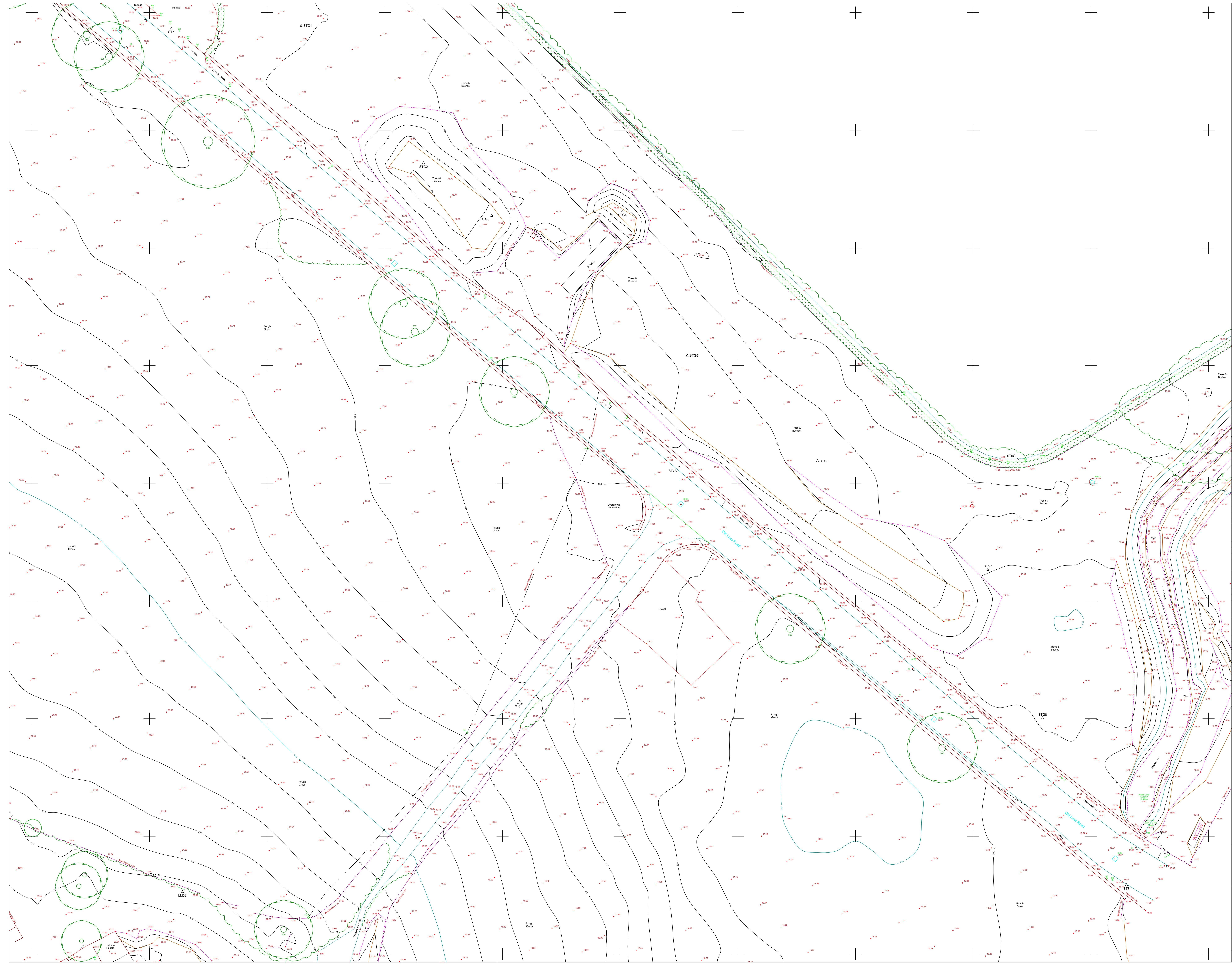
Title
Flood Risk Assessment at Site E
Woodbank Site from the
Unnamed Watercourse 2 (UW2)

Status
FOR INFORMATION

Drawing No. 168659-062	Revision
---------------------------	----------

File path:k:\168659j riverside west\drgs\cad

Scale 1:1000	A3	Date 10 Dec 2018
Drawn JS	Checked RCH	Approved KMD

[illegible]

Kenneth MacDougall

From: Kenneth MacDougall
Sent: 15 January 2019 13:44
To: 'brian.fotheringham@Sepa.org.uk'
Cc: 'Nick Gair (nicholas.gair@sepa.org.uk)'; Campbell Fleming; Ian Buchan
Subject: 168659: West Riverside - Area C
Attachments: 1139_SK20 A3 Pierhead Hotel Footprint Updated.pdf

Brian

Following on from our earlier phone call, attached is the proposed revised layout that brings the hotel development out of the flood risk zone.

From our understanding at the meeting last week, the Water Park is considered 'Least Vulnerable' consistent with 'assembly and leisure' use and a re-development of similar existing use, so would be appropriate in the location shown.

We assume that with a footprint of ~850 m² in the flood risk zone (existing ground levels range between 9.5 – 10.2 mAOD, design flood 10.57 mAOD), the Water Park would require appropriate compensatory storage as part of the detailed design stage?

The Flume Tower is an open structure and the Deck and Infinity Pool are shown at a level of 15 mAOD on the masterplan, expected to project out above the existing ground.

Prior to agreeing this revised layout, we would seek your confirmation that the above is acceptable to SEPA.

I'm happy to be contacted to run through any queries (0141 341 5040 /).

Kind regards
Kenny

Dr Kenneth A. MacDougall
Projects Director

Email: kmacdougall@envirocentre.co.uk



-  Contaminated Land & Sediment
-  Ecology
-  Environmental Impact Assessment
-  Water Management & Engineering



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charity for 2018

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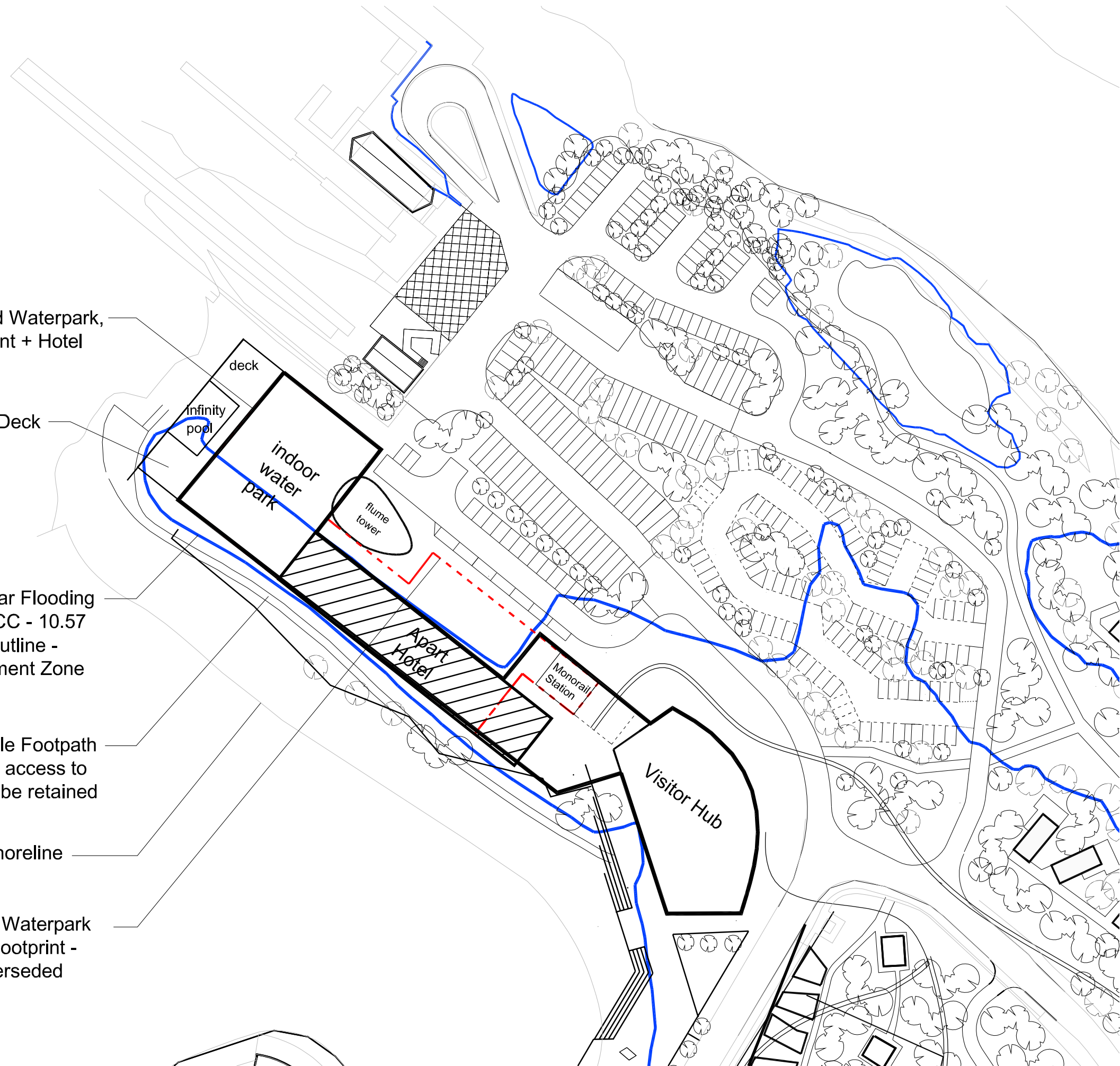
Regional Offices:

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Inverness: Alder House, Cradlehall Business Park, Inverness IV2 5GH
Edinburgh: Suite 114, Gyleview House, 3 Redheughs Rigg, Edinburgh, EH12 9DQ

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Proposed Waterpark,
Restaurant + Hotel
Footprint

Outdoor Deck

1:200 Year Flooding
Event + CC - 10.57
mAOD Outline -
Development Zone

Accessible Footpath
providing access to
beach to be retained

Beach Shoreline

Previous Waterpark
+ Hotel Footprint -
now superseded

Rev	Date	By	Notes

RISK REGISTER		
No.	Date	Description

NOTES

DO NOT SCALE
The Contractor must check & verify all Site & Building Dimensions, Levels & Sewer Inverts at DCM's before commencing work.
This Drawing must be read with the NBS Contract Specification and any related Structural Engineer or Specialist Contractors Drawings.

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INFORMATION ONLY			
Project West Riverside			
Client TSL/Flamingo Land			
Drawing Pierhead Hotel Footprint within Flood Development Zone			
Job No. 1139		Drg No. SK020	
Scale 1:2000	Sheet A3	Scale	Sheet
Drawn by ABL	Date Created 11/12/2018	Scale	Sheet
Checked by RS			

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CAD Ref.
INFORMATION ONLY

Our ref: PCS/162833
Your ref: 168659

If telephoning ask for:
Brian Fotheringham

Mr K MacDougall
EnviroCentre Ltd
Craighall Business Park
8 Eagle Street
Glasgow
G4 9XA.

01 February 2019

By email only to: kmacdougall@envirocentre.co.uk

Dear Sir

The erection and operation of a tourism and leisure led mixed use development including hotel, bunkhouse accommodation and self-catering holiday lodges, self-catering boathouse accommodation, residential development, leisure and recreational facilities including swimming pool, water park, visitor reception and education/interpretation facilities, hot food/café restaurant uses, brewery; ancillary uses including retail, facade retention of Woodbank House and conversion of existing outbuildings, public realm enhancements including public square improvements, footpaths and cycleways, external activity areas including forest adventure rides, tree top walkway, monorail, events/performance areas, picnic areas and play areas, staff and service areas; landscaping, new access from Ben Lomond Way and Pier Road; and site development infrastructure (including SUDS, and parking).

Land At Pier Road, Ben Lomond Way And Old Luss Road, Known As West Riverside And Woodbank House, Balloch.

I refer to the recent email consultation emails which SEPA in December 2018 and January 2019, in respect of the above proposed development.

The additional information provided by the applicant is seeking to address the terms of our outstanding flood risk objection, with particular reference to the location of the hotel and the associated structures in the Pierhead area of the site (Area C), as detailed in SEPA's response PCS/159219 – 22 June 2018.

We have as requested given due consideration to the supplementary information provided and would offer the following revised comments for your information.

Please note that our advice at this stage is based on emerging proposals and we cannot rule out potential further information requests as the project develops.



Chairman
Bob Downes

Chief Executive
Terry A'Hearn

Angus Smith Building

6 Parklands Avenue, Eurocentral,
Holytown, North Lanarkshire ML1 4WQ
tel 01698 839000 fax 01698 738155

www.sepa.org.uk • customer enquiries 03000 99 66 99

1. Flood risk

- 1.1 We would confirm that if we were to be formally consulted on the amended site layout, as shown on Drawing No 1139 – SK020 we would be able to **remove our objection** to the proposed development on flood risk grounds. Notwithstanding this we would expect Loch Lomond & The Trossachs National Park to consult the relevant council to undertake their responsibilities as the Flood Risk Management Authority.
- 1.2 Our pre-application advice relies on the accuracy and completeness of the information supplied with this consultation. Should finalised development proposals differ in any future planning application we reserve the right to alter our position if we are of the opinion that such proposals would not meet with the principles of Scottish Planning Policy.

Technical Report

- 1.3 We have previously commented on this proposal, raised a flooding objection and requested further information or modification to the site layout. A revised proposal has now been submitted and we would make the following comments.
- 1.4 Review of planning drawing 1139 SK020 indicates that the proposed hotel development has been moved outwith the floodplain which was the main reason for our flood risk objection. We are satisfied with the revised location of the hotel with the caveat that some uncertainty remains with the flood hazard. We do however accept that this risk has partly been mitigated by using climate change levels to inform the functional floodplain.
- 1.5 It is also agreed that given the nature of the site that the water park is a least vulnerable use and provided any loss of floodplain is subject to appropriate compensatory storage the proposal should have an overall neutral effect on flooding. Therefore based on the revised proposal we are satisfied that it is compliant with the principles of Scottish Planning Policy (SPP).
- 1.6 The SEPA Flood Maps have been produced following a consistent, nationally-applied methodology for catchment areas equal to or greater than 3km² using a Digital Terrain Model (DTM) to define river cross-sections and low-lying coastal land. The maps are indicative and designed to be used as a strategic tool to assess flood risk at the community level and to support planning policy and flood risk management in Scotland. For further information please visit <http://www.sepa.org.uk/environment/water/flooding/flood-maps/>.
- 1.7 We refer the applicant to the document entitled: "Technical Flood Risk Guidance for Stakeholders". This document provides generic requirements for undertaking Flood Risk Assessments and can be downloaded from <http://www.sepa.org.uk/media/162602/ss-nfr-p-002-technical-flood-risk-guidance-for-stakeholders.pdf>. Please note that this document should be read in conjunction Policy 41 (Part2).
- 1.8 Please note that we are reliant on the accuracy and completeness of any information supplied by the applicant in undertaking our review, and can take no responsibility for incorrect data or interpretation made by the authors.

If you have any queries relating to this letter, please contact me by telephone on 01698-839336 or by e-mail to planning.sw@sepa.org.uk

Yours faithfully

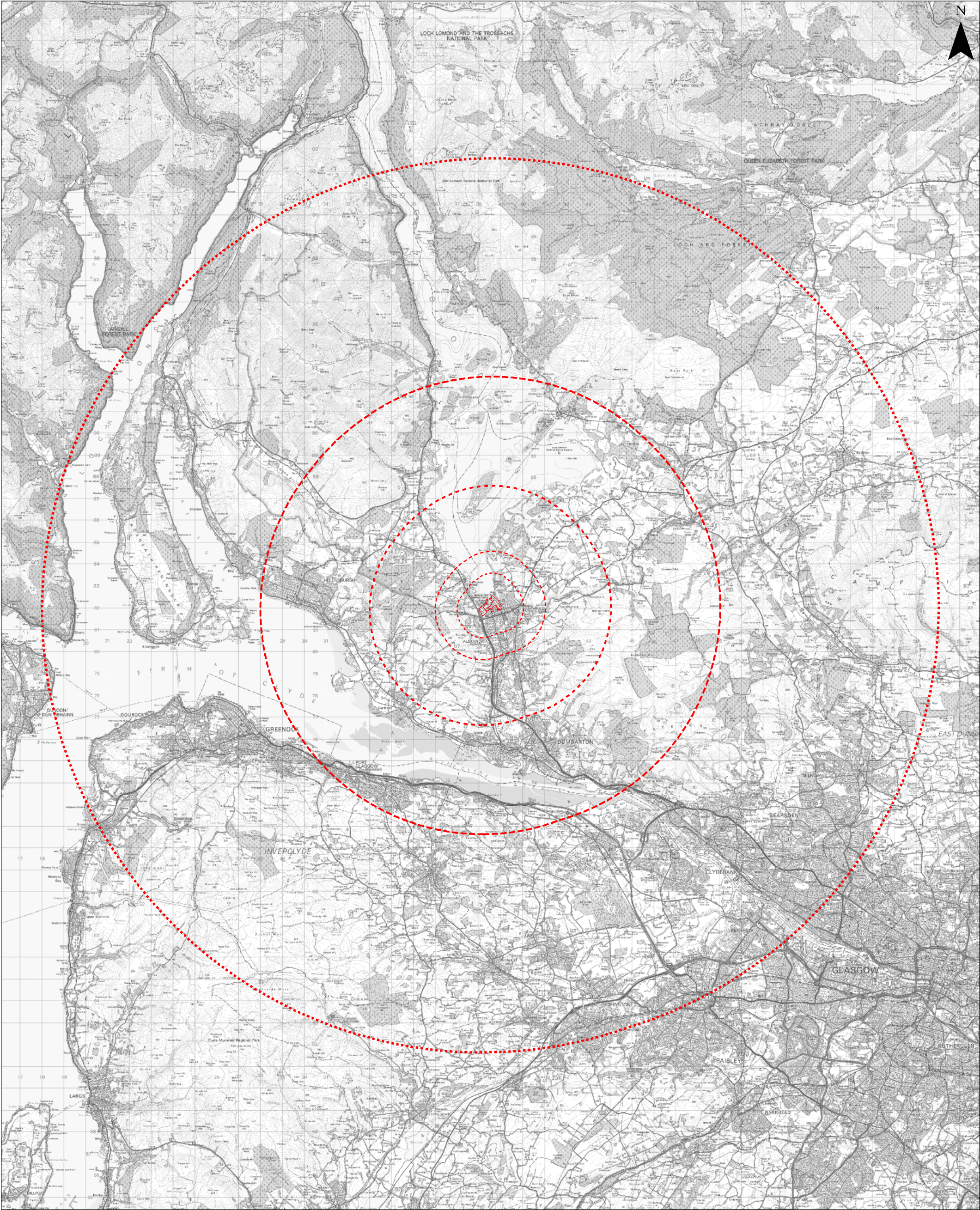
Brian Fotheringham
Senior Planning Officer
Planning Service

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications, if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [website planning pages](#).

Appendix 12 – Landscape and Visual

Appendix 12.1 – Figures



Key:

SITE BOUNDARY

1KM BUFFER

2KM BUFFER

5KM BUFFER

10KM BUFFER

20KM BUFFER



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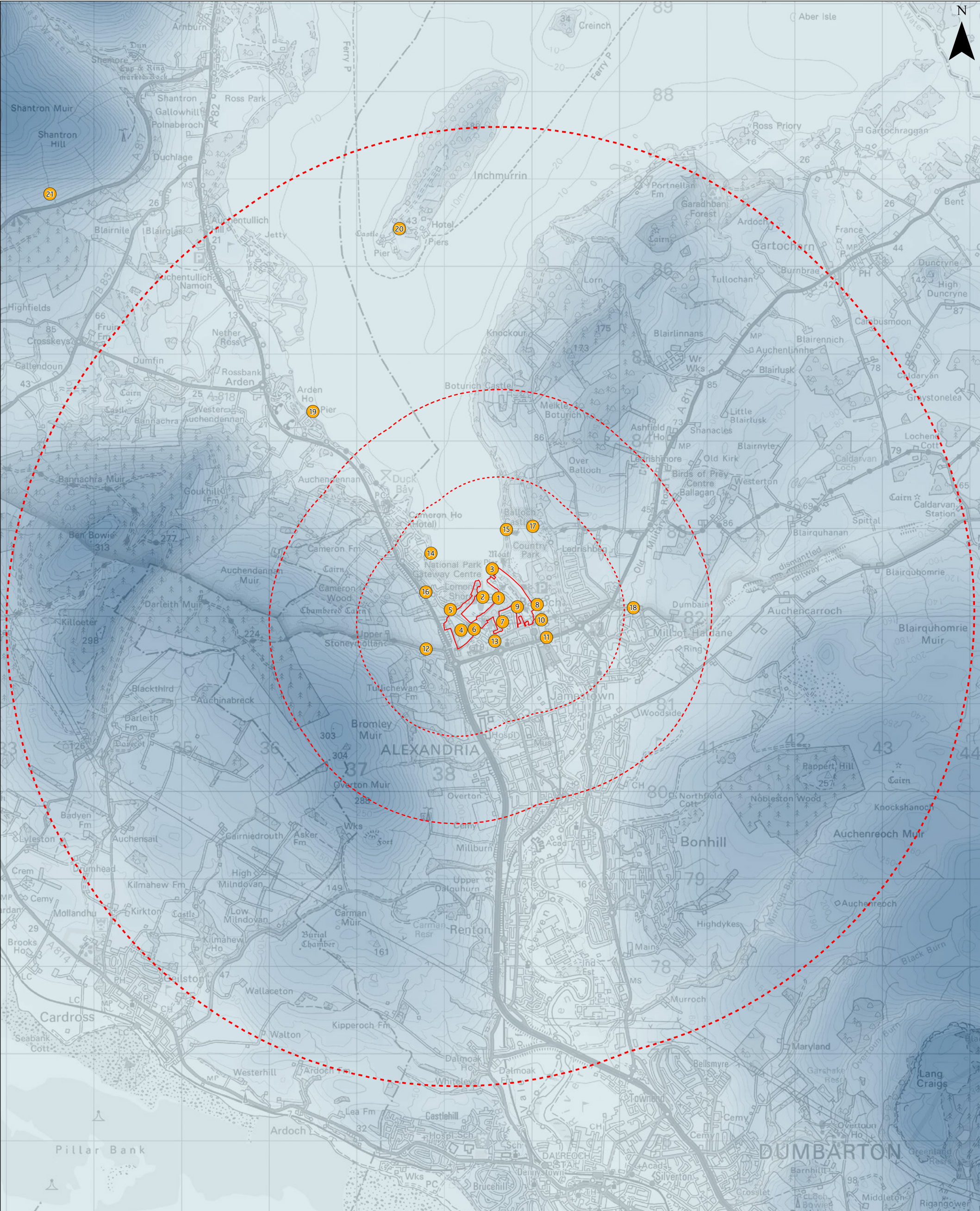
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0	06/03/2018	LVIA	KC	ZF	SG
Rev	Date	Description	Made	Chk'd	App'd

GILLESPIES

Scheme Name:
P11263-00 001
WEST RIVERSIDE LVIA

Title:
FIGURE 12.1
SITE LOCATION AND STUDY AREAS

Scale: 1:160,000	Sheet: SHEET 1 of 1	Sheet Size: A3 (297 mm x 420 mm)	Rev: 1
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Key:







































SITE BOUNDARY

1KM BUFFER

2KM BUFFER

5KM BUFFER

VIEWPOINTS

ELEVATION (AOD)			40 - 50		120 - 130		200 - 210		280 - 290
METRES			50 - 60		130 - 140		210 - 220		290 - 300
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	-10 - 0		70 - 80		150 - 160		230 - 240		310 - 320
	0 - 10		80 - 90		160 - 170		240 - 250		320 - 330
	10 - 20		90 - 100		170 - 180		250 - 260		330 - 340
	20 - 30		100 - 110		180 - 190		260 - 270		340 - 350
	30 - 40		110 - 120		190 - 200		270 - 280		350 >



00.250.51Kilometres

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Scheme Name:
P11263-00 001
WEST RIVERSIDE LVIA

Title:
FIGURE 12.2
TOPOGRAPHY

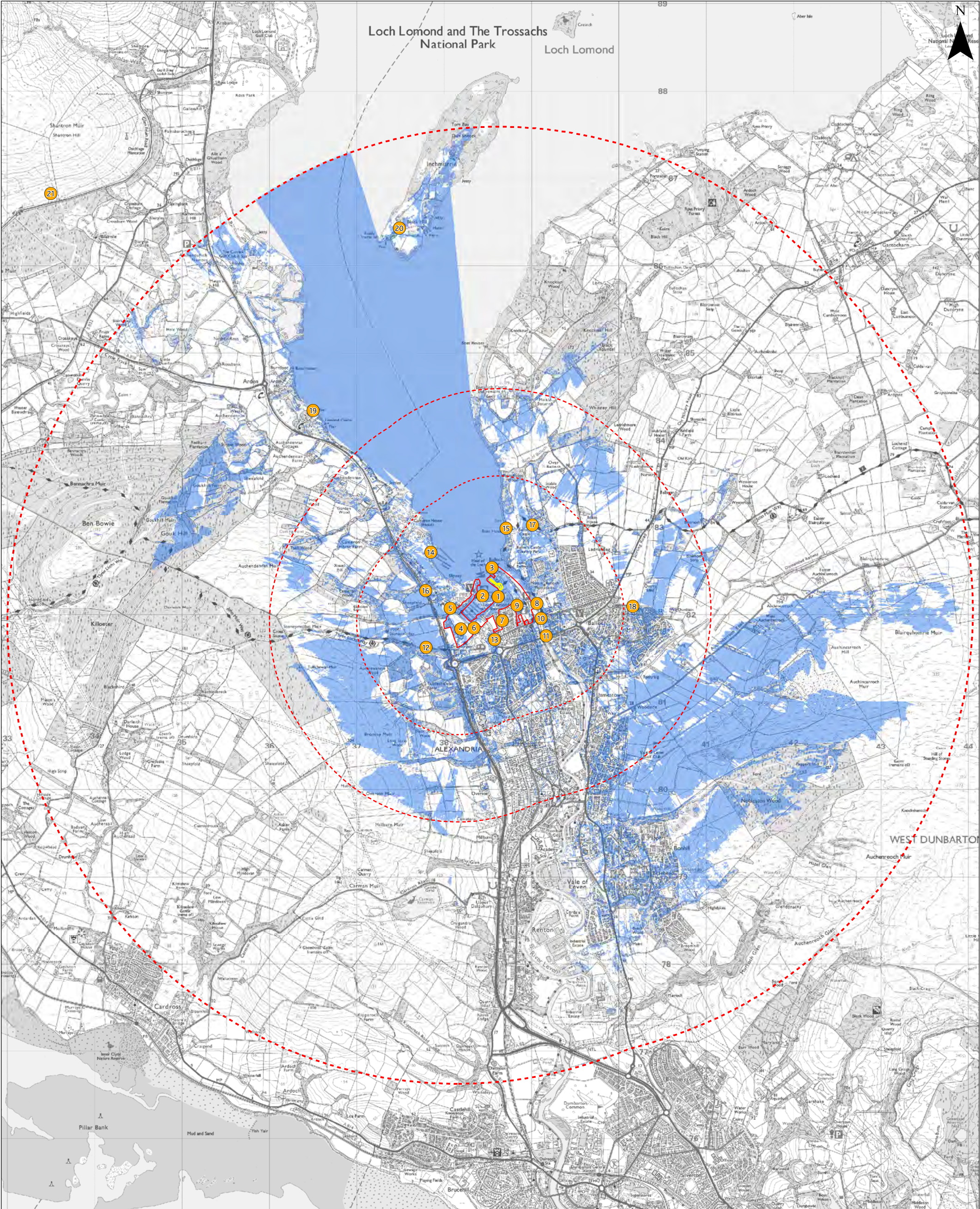
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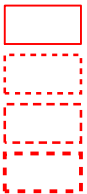
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SHEET 1 of 1

Sheet Size:
A3 (297 mm x 420 mm)

Rev:
1



Key:



SITE BOUNDARY

1KM BUFFER

2KM BUFFER

5KM BUFFER



VIEWPOINTS



APART-HOTEL AND WATERPARK



ZONE OF THEORETICAL VISIBILITY FOR
APART-HOTEL AND WATERPARK

HEIGHTS OF THE PROPOSED DEVELOPMENT HAVE BEEN TAKEN FROM THE WEST RIVERSIDE MASSING AND PRECEDENT STUDIES PROVIDED BY ANDERSON BELL + CHRISTIE. THE HEIGHT OF THE PROPOSED DEVELOPMENT AT THIS SITE VARIES BETWEEN 9M AND 24M.

THIS ZTV HAS BEEN GENERATED USING ARCGIS AND IS BASED ON A 5M RESOLUTION DSM (DIGITAL SURFACE MODEL) WITH AN OBSERVER HEIGHT OF 1.5M USED. THIS TOPOGRAPHIC MODEL IS COMPRISED OF ELEVATION MEASUREMENTS DERIVED FROM RETURN SIGNALS RECEIVED BY THE RADAR ANTENNAE ON THE AIRCRAFT. THE SIGNALS BOUNCE OFF THE FIRST SURFACE THEY HIT, SO ANY OBJECT LARGE ENOUGH TO BE RESOLVED WILL BE REPRESENTED IN THE DSM. THIS INCLUDES BUILDINGS, ROADS AND VEGETATION, AS WELL AS ANY NATURAL TERRAIN FEATURES.



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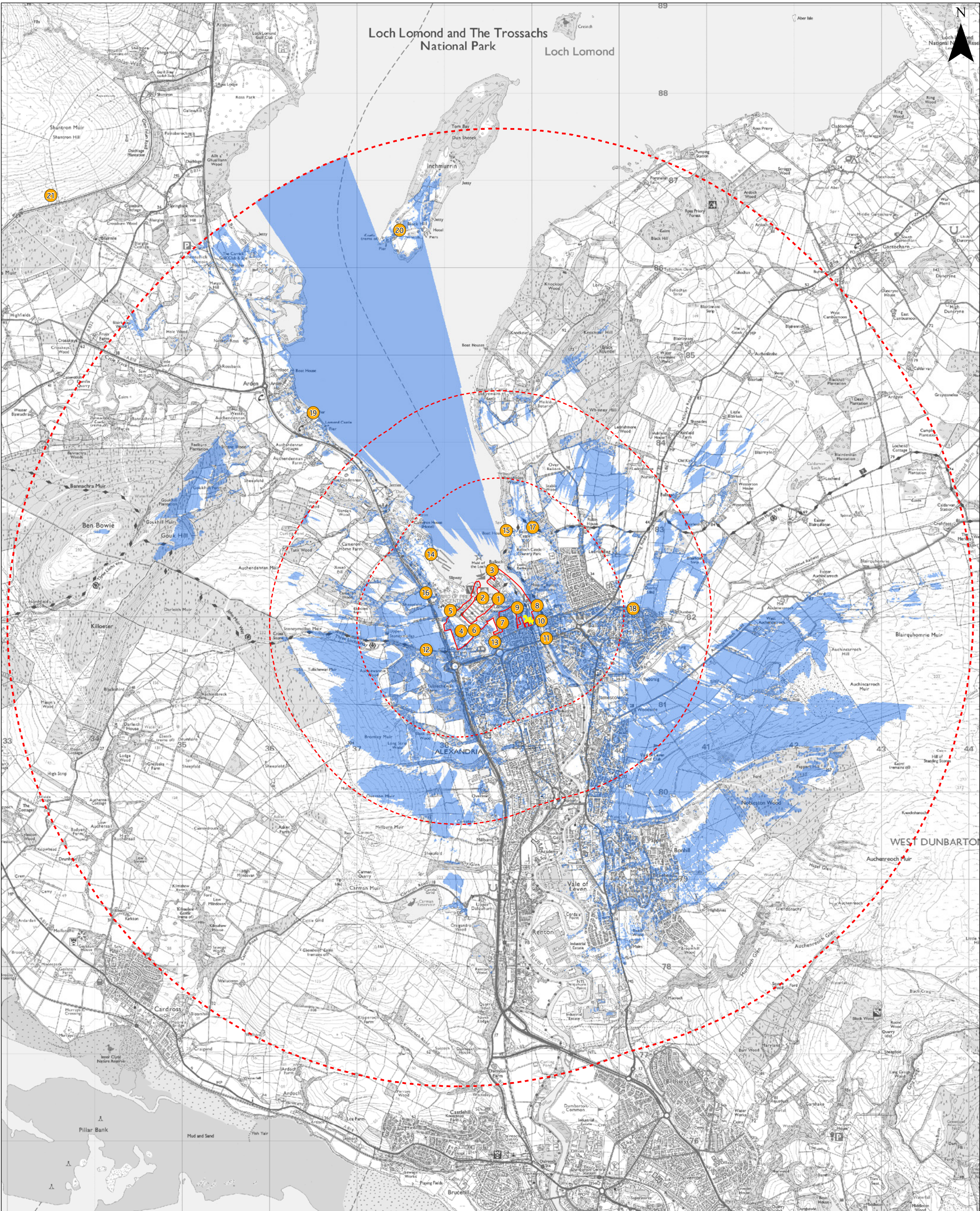
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0	06/03/2018	LVIA	KC	ZF	SG
Rev	Date	Description	Made	Chk'd	App'd

GILLESPIES

Scheme Name:
**P11263-00 001
WEST RIVERSIDE LVIA**

Title:
**FIGURE 12.3A
APART-HOTEL AND
VISITOR CENTRE ZTV**

Scale: 1:40,000	Sheet: SHEET 1 of 1	Sheet Size: A3 (297 mm x 420 mm)	Rev: 1
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Key:

SITE BOUNDARY

VIEWPOINTS

1KM BUFFER

STATION SQUARE

2KM BUFFER

ZONE OF THEORETICAL VISIBILITY FOR STATION SQUARE

5KM BUFFER

HEIGHTS OF THE PROPOSED DEVELOPMENT HAVE BEEN TAKEN FROM THE WEST RIVERSIDE MASSING AND PRECEDENT STUDIES PROVIDED BY ANDERSON BELL + CHRISTIE. THE HEIGHT OF THE PROPOSED DEVELOPMENT AT THIS SITE VARIES BETWEEN 15.2M AND 3M.

THIS ZTV HAS BEEN GENERATED USING ARCGIS AND IS BASED ON A 5M RESOLUTION DSM (DIGITAL SURFACE MODEL) WITH AN OBSERVER HEIGHT OF 1.5M USED. THIS TOPOGRAPHIC MODEL IS COMPRISED OF ELEVATION MEASUREMENTS DERIVED FROM RETURN SIGNALS RECEIVED BY THE RADAR ANTENNAE ON THE AIRCRAFT. THE SIGNALS BOUNCE OFF THE FIRST SURFACE THEY HIT, SO ANY OBJECT LARGE ENOUGH TO BE RESOLVED WILL BE REPRESENTED IN THE DSM. THIS INCLUDES BUILDINGS, ROADS AND VEGETATION, AS WELL AS ANY NATURAL TERRAIN FEATURES.



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0 0.25 0.5 1
Kilometres

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0	06/03/2018	LVIA	KC	ZF	SG
Rev	Date	Description	Made	Chk'd	App'd

GILLESPIES

Scheme Name:
P11263-00 001
WEST RIVERSIDE LVIA

Title:
FIGURE 12.3B
STATION SQUARE
ZTV

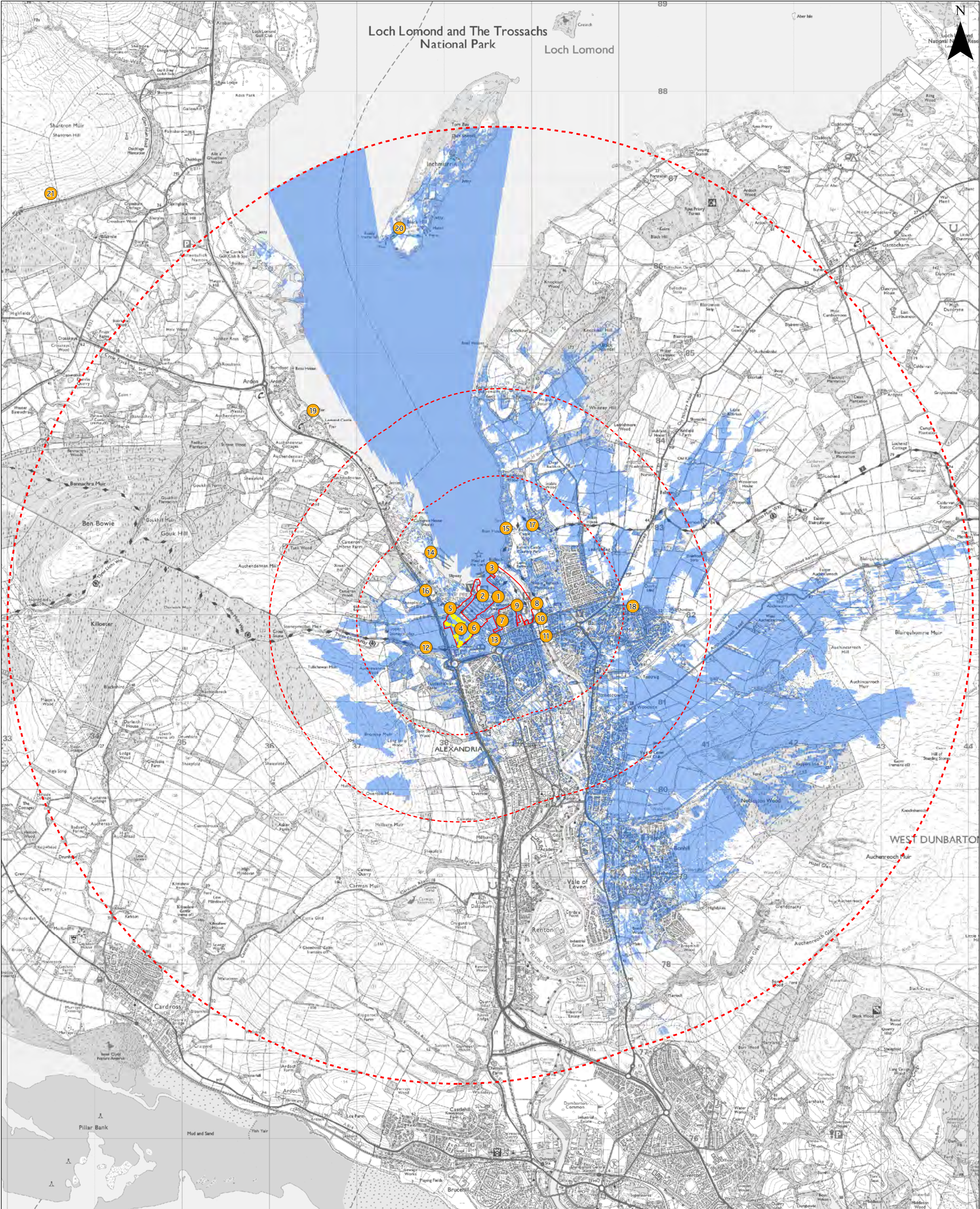
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Sheet:
SHEET 1 of 1

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Key:

SITE BOUNDARY

VIEWPOINTS

1KM BUFFER

WOODBANK HOUSE

2KM BUFFER

ZONE OF THEORETICAL VISIBILITY FOR WOODBANK HOUSE

5KM BUFFER

HEIGHTS OF THE PROPOSED DEVELOPMENT HAVE BEEN TAKEN FROM THE WEST RIVERSIDE MASSING AND PRECEDENT STUDIES PROVIDED BY ANDERSON BELL + CHRISTIE. THE HEIGHT OF THE PROPOSED DEVELOPMENT AT THIS SITE VARIES BETWEEN 3.5M AND 9.8M.

THIS ZTV HAS BEEN GENERATED USING ARCGIS AND IS BASED ON A 5M RESOLUTION DSM (DIGITAL SURFACE MODEL) WITH AN OBSERVER HEIGHT OF 1.5M USED. THIS TOPOGRAPHIC MODEL IS COMPRISED OF ELEVATION MEASUREMENTS DERIVED FROM RETURN SIGNALS RECEIVED BY THE RADAR ANTENNAE ON THE AIRCRAFT. THE SIGNALS BOUNCE OFF THE FIRST SURFACE THEY HIT, SO ANY OBJECT LARGE ENOUGH TO BE RESOLVED WILL BE REPRESENTED IN THE DSM. THIS INCLUDES BUILDINGS, ROADS AND VEGETATION, AS WELL AS ANY NATURAL TERRAIN FEATURES.



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0 0.25 0.5 1

Kilometres

0	01/03/2019	UPDATED MASTERPLAN	KC	ZF	SG
0	06/03/2018	LVIA	KC	ZF	SG
Rev	Date	Description	Made	Chk'd	App'd

GILLESPIES

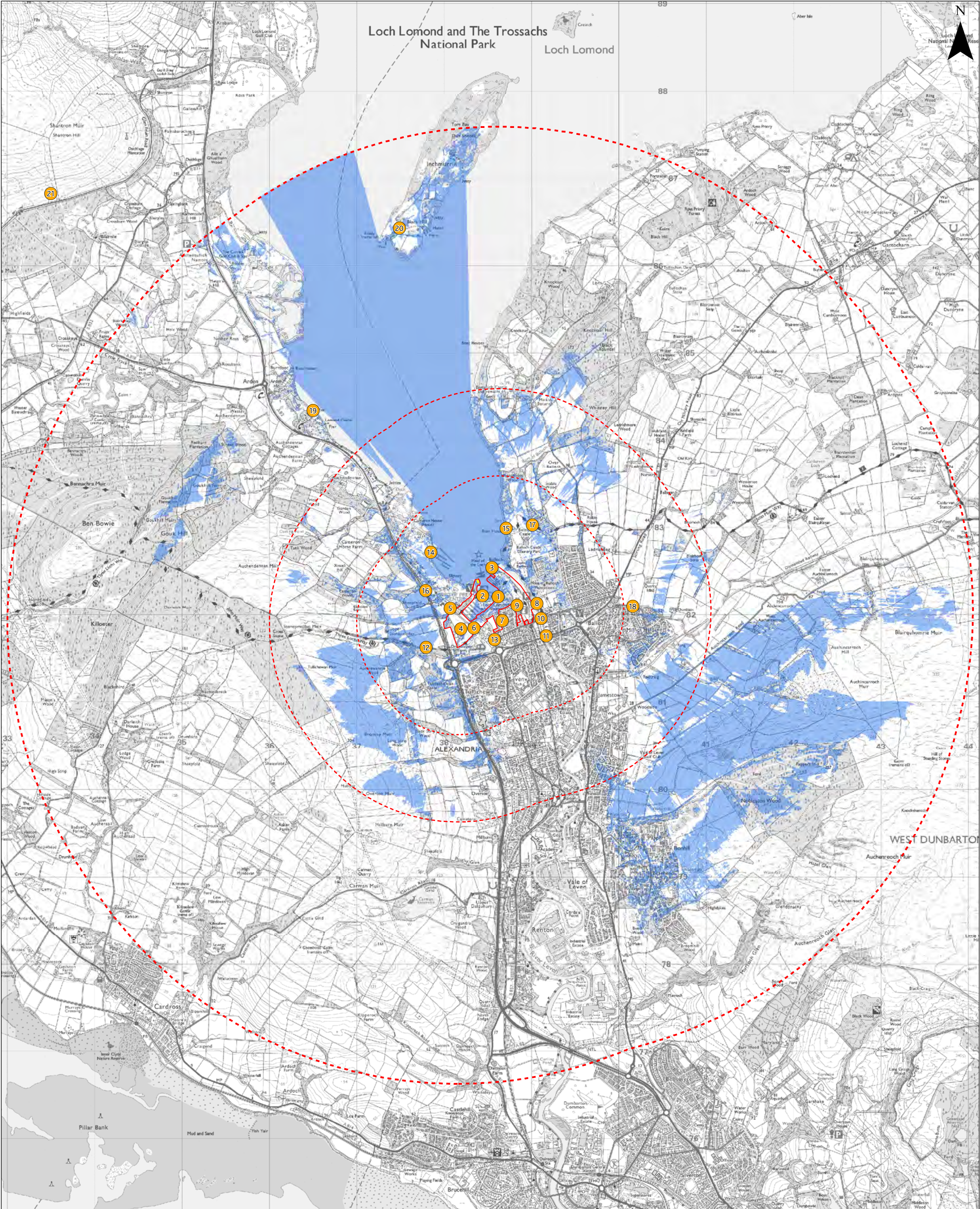
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WEST RIVERSIDE LVIA

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FIGURE 12.3C
WOODBANK HOUSE
ZTV

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Key:



SITE BOUNDARY

1KM BUFFER

2KM BUFFER

5KM BUFFER



VIEWPOINTS



WOODBANK HOUSE BOATHOUSE



ZONE OF THEORETICAL VISIBILITY FOR
WOODBANK HOUSE BOATHOUSE

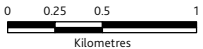
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THIS ZTV HAS BEEN GENERATED USING ARCGIS AND IS BASED ON A 5M RESOLUTION DSM (DIGITAL SURFACE MODEL) WITH AN OBSERVER HEIGHT OF 1.5M USED. THIS TOPOGRAPHIC MODEL IS COMPRISED OF ELEVATION MEASUREMENTS DERIVED FROM RETURN SIGNALS RECEIVED BY THE RADAR ANTENNAE ON THE AIRCRAFT. THE SIGNALS BOUNCE OFF THE FIRST SURFACE THEY HIT, SO ANY OBJECT LARGE ENOUGH TO BE RESOLVED WILL BE REPRESENTED IN THE DSM. THIS INCLUDES BUILDINGS, ROADS AND VEGETATION, AS WELL AS ANY NATURAL TERRAIN FEATURES.



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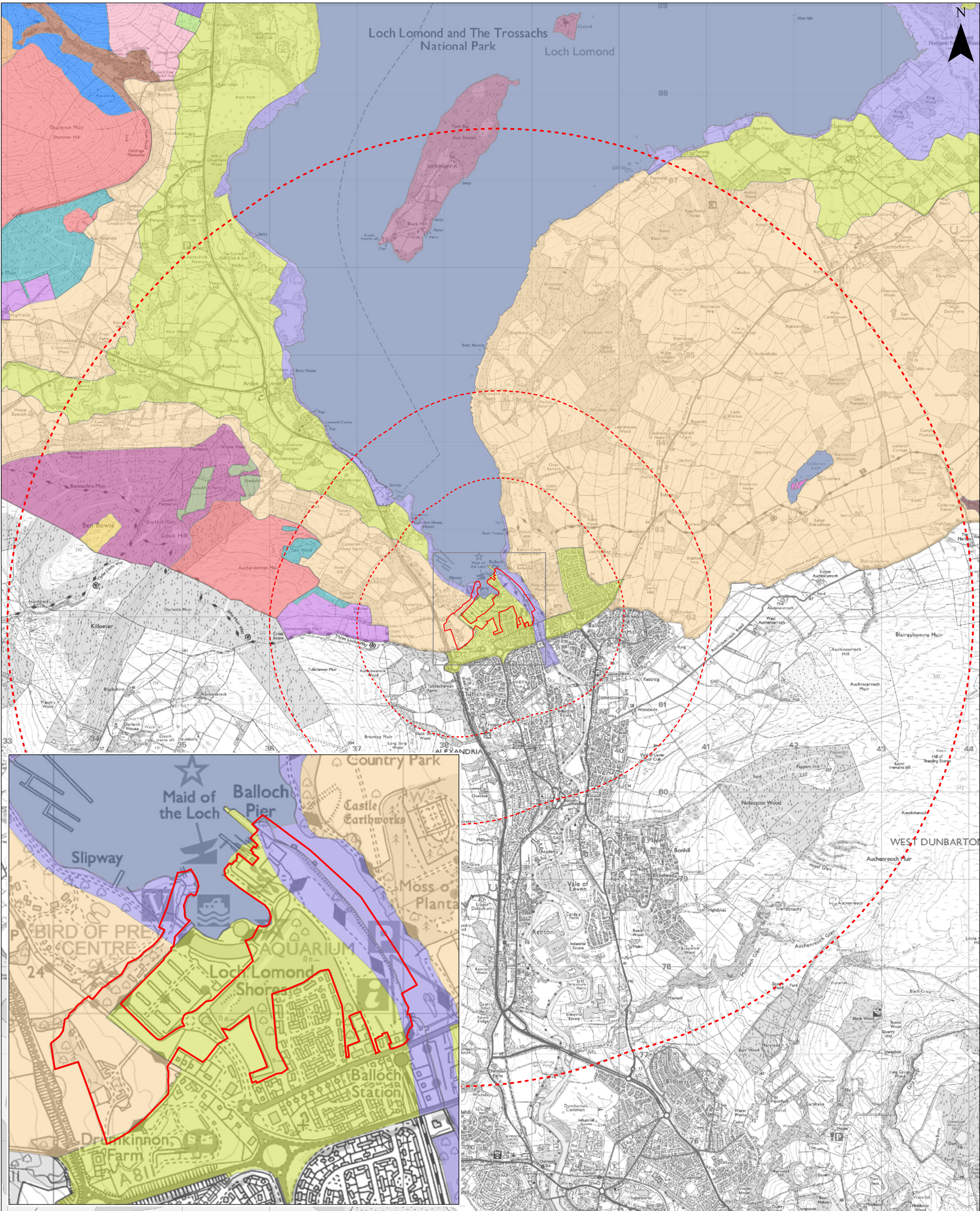
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Scheme Name:
**P11263-00 001
WEST RIVERSIDE LVIA**

Title:
**FIGURE 12.3D
WOODBANK HOUSE BOATHOUSE
ZTV**

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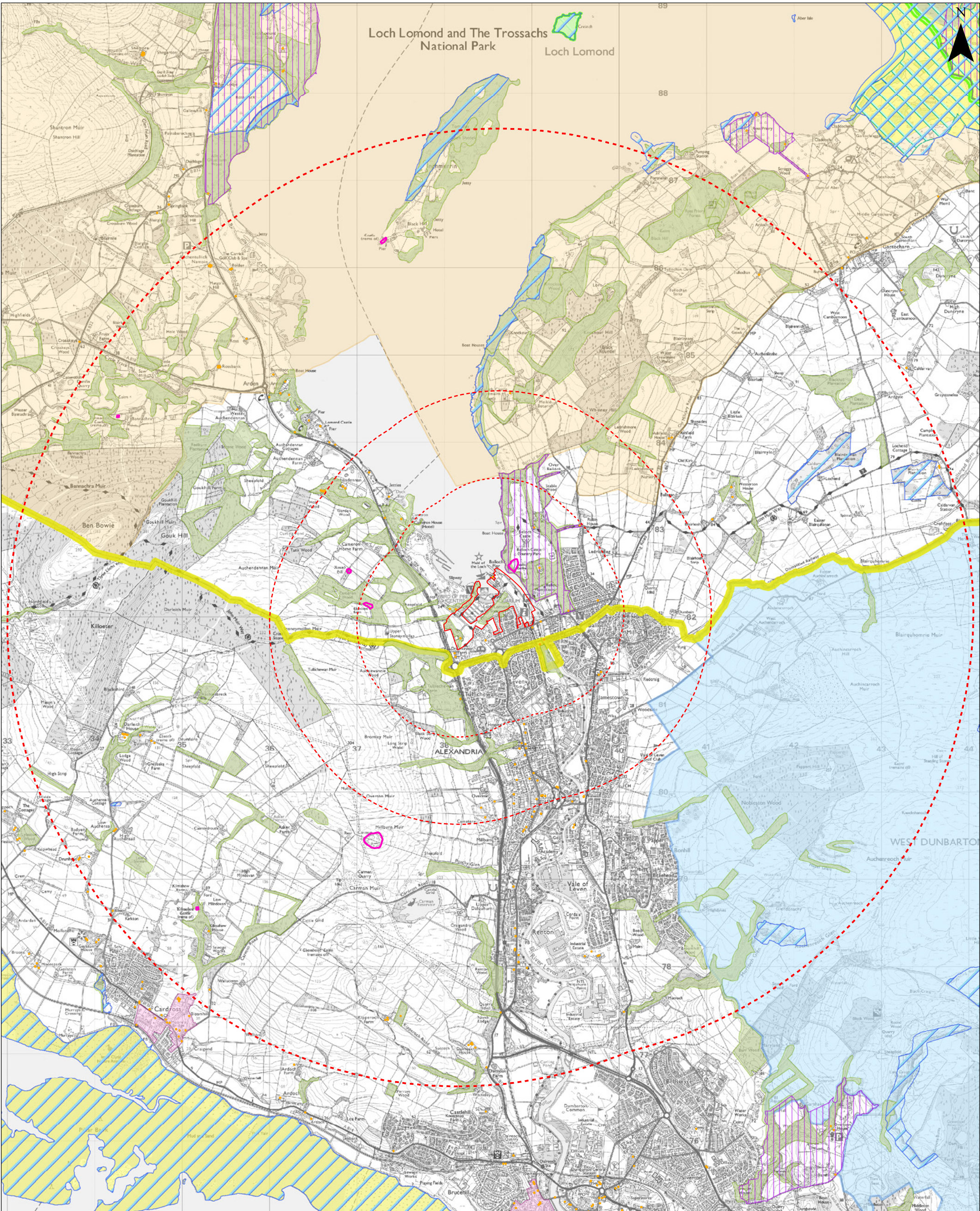


Key:

	SITE BOUNDARY		FARMED PARALLEL RIDGE		LOWLAND LOCH		WOODED GLEN SIDE
	1KM BUFFER		FORESTED GLEN SIDE		OPEN HILL		WOODED MOORLAND
	2KM BUFFER		FORESTED MOORLAND		OPEN MOORLAND		WOODED UPLAND GLEN
	5KM BUFFER		FORESTED PARALLEL RIDGE		OPEN PARALLEL RIDGE		
	LOCH LOMOND & THE TROSSACHS LCAS		LOCH ISLAND		OPEN UPLAND GLEN		
	FARMED GLEN SIDE		LOCH LOMOND ISLAND		RIVER VALLEY FARMLAND WITH ESTATES		
	FARMED MOORLAND		LOCH SHORE FRINGE		ROLLING FARMLAND WITH ESTATES		



0 0.25 0.5 1 Kilometres			
1	06/04/2018	LVIA	KC ZF SG
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GILLESPIES			
Scheme Name: P11263-00 001 WEST RIVERSIDE LVIA			
Title: FIGURE 12.4 LOCH LOMOND & THE TROSSACHS LANDSCAPE CHARACTER AREAS			
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Key:

SITE BOUNDARY

1KM BUFFER

2KM BUFFER

5KM BUFFER

LISTED BUILDINGS

SCHEDULED MONUMENTS

GARDENS AND DESIGNED LANDSCAPES

CONSERVATION AREAS

SITE OF SPECIAL SCIENTIFIC INTEREST

SPECIAL PROTECTION AREAS

NATIONAL NATURE RESERVES

SPECIAL AREAS OF CONSERVATION

ANCIENT WOODLAND INVENTORY

NATIONAL PARK

KILPATRICK HILLS LOCAL LANDSCAPE AREA

NATIONAL SCENIC AREAS



0 0.25 0.5 1 Kilometres			
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Scheme Name: P11263-00 001 WEST RIVERSIDE LVIA			
Title: FIGURE 12.5 LANDSCAPE DESIGNATIONS			
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GILLESPIES <small>Landscape Architects Urban Design Landscape Planning</small>		Project Title	Document Title		Client
		West Riverside	LVIA Methodology Appendix 12.2 P11263-00-001-702		Flamingo Land
Rev.	Date	Detail	Made By	Checked By	Approved By
00	30/11/17	Initial Draft for comment	SG		
01	26/01/18	Draft for comment	ZF	SG	
02	16/03/18	Final	ZF	SG	SG
03	06/04/18	Final (Re-numbered from 13.x to 12.x)	ZF	SG	SG
04	20/03/19	Minor formatting changes	ZF	HJ	TW

12 Landscape and Visual Methodology

12.1 Introduction

12.1.1 This appendix supplements the methodology provided in **Chapter 12 – Landscape and Visual Impact Assessment** of the Environment Impact Assessment (EIA). In particular it provides detailed tables setting out the different criteria for making judgments about the sensitivity of receptors and the likely effect they will experience due to the proposed development. The criteria set out in the individual tables follows accepted best practice and guidance provided by the Landscape Institute.

12.2 Guidance and Relevant Technical

12.2.1 The following guidance and technical standards have informed this assessment:

- Guidelines for Landscape and Visual Impact Assessment Third Edition¹ (GLVIA3);
- Landscape Character Assessment: Guidance for England and Scotland²;
- Advice Note 01/11 'Photography and Photomontage in Landscape and Visual Assessment'³; and
- The State of Environmental Impact Assessment Practice in the UK⁴.

12.3 Methodology

Scope of Assessment

- 12.3.1 This ES chapter presents an assessment of likely significant effects on the landscape, views and visual amenity arising from the proposed development.
- 12.3.2 The assessment presented in this ES chapter has been prepared in accordance with the 2011 EIA Regulations.
- 12.3.3 The principal aspects considered within this assessment are landscape effects and visual effects, which are related but different concepts.
- 12.3.4 Landscape effects are on the fabric, character and quality of the landscape. In line with the European Landscape Convention⁵ and the SNH guidelines, the assessment takes a comprehensive view of landscape where historical and cultural associations and the total experience of landscape through all the senses and through knowledge are all considered integral to understanding landscape character. This means that all the key features and characteristics are considered, including:

¹ Landscape Institute and Institute of Environmental Management and Assessment (2013), Guidelines for Landscape and Visual Impact Assessment

² Scottish Natural Heritage (2002), Landscape Character Assessment: Guidance for England and Scotland

³ Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment

⁴ Institute of Environmental Management and Assessment, The State of Environmental Impact Assessment Practice in the UK (2011)

⁵ The European Landscape Convention (ELC) was the first international convention to focus specifically on landscape, and is dedicated exclusively to the protection, management and planning of all landscapes in Europe. The ELC became binding from 1 March 2007.

- Visible, physical, objective, tangible components, e.g. landform, buildings, woodland;
- Visible, spatial (rather than physical), more subjective, intangible components, e.g. scale, pattern, colour, texture, etc; and
- Non-visible components that cannot be seen, e.g. tranquillity, remoteness, wildness, sound and cultural associations;
- Special interest e.g. designations⁶, special qualities, conservation sites, cultural associations.

12.3.5 The components of the landscape combine to create landscape character, which is the combination of all the components, and the way they come together and interact to give a place its sense of place and identity. Some components will be more significant than others. The significant ones may contribute to the character of the landscape or may form conspicuous features within the landscape that are not typical.

12.3.6 Visual effects are the effects on specific views and on the general visual amenity⁷ experienced by people at different places.

12.3.7 Landscape and visual effects do not necessarily coincide. Landscape effects can occur in the absence of visual effects, for instance where a development is wholly screened from available views, but nonetheless results in a loss of landscape elements, and landscape character within the site boundary. Similarly, some developments, such as a new communications mast in an industrial area, may have significant visual effects, but insignificant landscape effects. However, such cases are very much the exception, and for most projects both landscape and visual impacts have to be assessed.

12.3.8 At the request of the Landscape Officer of the LLTTNP a key consideration of this assessment was the need to understand how the Special Landscape Qualities (SLQ)⁸ of the LLTTNP ('the Park'), are experienced and how they may be affected by the proposed development. SLQ are linked to the type, range and composition of the physical components of the landscape, as well as to the less tangible experiential aspects of landscape as recognised and valued by people. SLQ do not necessarily have to be rare qualities, but simply what makes an area important and valued.

12.3.9 Within the Scoping Opinion it was detailed that the SLQ likely to be affected by the proposals are the Park's general qualities and the area based qualities of Loch Lomond. Therefore these are the qualities that have been considered within this assessment. During further consultation with the Park it was also agreed that localised risks to the SLQ would be considered as well as likely risks to the SLQ as a whole.

Temporal Scope

12.3.10 The assessment takes account of the effects of the proposed development at the following points in time:

- Construction – the point at which the construction works would be visible;

⁶ In landscapes designated or valued for their scenic or landscape quality, changes can affect the perceived value of the landscape or the purpose of the designation.

⁷ Visual amenity is the overall pleasantness of the views people enjoy of their surroundings.

⁸ As identified in Scottish National Heritage and Loch Lomond and The Trossachs National Park Authority (2010). The special landscape qualities of the Loch Lomond and The Trossachs National Park. Scottish Natural Heritage Commissioned Report No. 376

- Operation Year 1 – the point at which the proposed development would first be visible in its entirety; and
- Operation year 15 – the point in time at which the proposed development would be visible, following further growth of any existing or new vegetation within the landscape.

12.3.11 Short-term effects are typically those which would arise during the construction phase of the proposed development. Construction of the proposed development is anticipated to take place in different phases and currently a time period for construction operations is not yet known. The intensity and scale of construction will vary during construction operations.

12.3.12 Medium and long-term effects are typically those which would arise during the operational phase of the proposed development. The opening year will be used as the basis for assessing operational effects. This is currently anticipated to be 2020.

12.3.13 Long-term residual effects of the proposed development are typically those which would remain after a minimum fifteen years. When assessing landscape effects this includes the establishment of any planting within the design and mitigation proposals and further growth of existing vegetation.

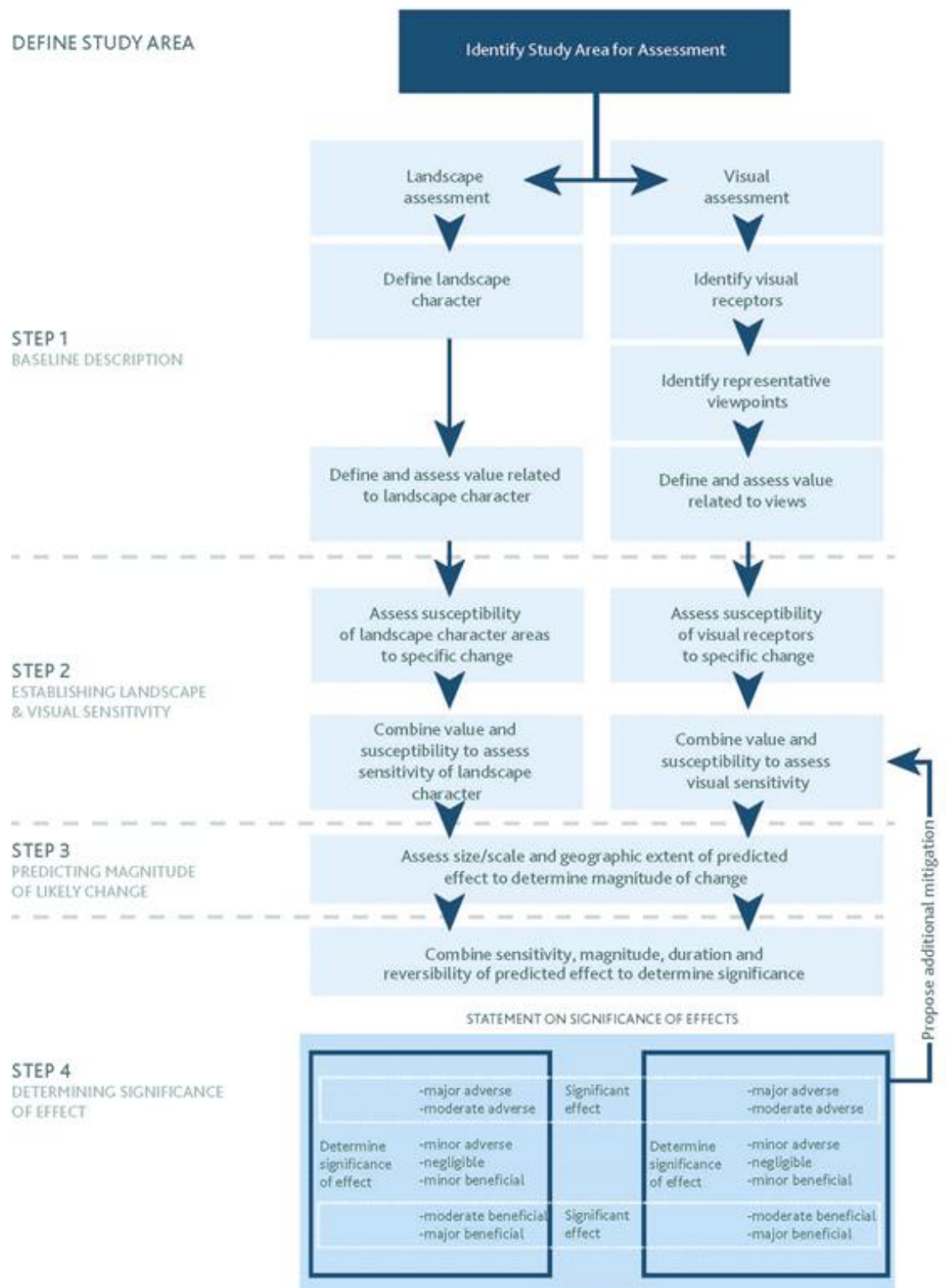
Overall Approach

12.3.14 The process for the LVIA is illustrated in **Diagram 12.1** below. A key principle is that the landscape and visual baseline should be identified and understood before the assessment take place. The assessment of significant effect is a judgement based on a combination of receptor sensitivity and the predicted magnitude of change.

12.3.15 In undertaking the assessment presented in this ES chapter, the following activities have been carried out:

- Landscape observation and description of the baseline landscape and visibility across the Study Area. This includes a narrative on the special qualities the National Park as well as a description of the relationship between the people and landscapes of the southern extents of the Park;
- Identification of the landscape and visual receptors with judgements as to their sensitivity to the type of development proposed (defined in terms of the relationship between value and susceptibility to change);
- Prediction of the nature of the change likely to arise, i.e. the magnitude of change (defined in terms of its scale, geographical extent, duration and reversibility);
- Assessment as to whether a receptor would experience a likely significant effect, by considering the predicted magnitude of change together with the sensitivity of the receptor, taking into account any proposed mitigation measures; and
- Drawing together of the results of the assessment to provide a final statement on any likely significant landscape or visual effects.

Diagram 12.1 LVIA Process



Source: Gillespies LLP

Study Area

- 12.3.16 The site location and Study Area adopted for this assessment are shown in **Figure 12.1** at **Appendix 12.1**.
- 12.3.17 A 20km radius Study Area from the site was proposed in the EIA Scoping Report. As noted above, following the decision to remove the viewing tower from the proposed development, and with agreement from LLTNPA, this was reduced to a 5km radius, from the site boundary, for the LVIA. The 5km Study Area which has been adopted in this assessment is larger than would normally be used for projects of this type, however due to the site's location within a National Park and the local topography it was decided that 5km would be an appropriate distance to ensure any noticeable landscape and visual effects were identified.
- 12.3.18 Due to the scale of the proposed development and the lack of perceptibility of the site from the wider area, it is unlikely that any prominent effects would be identified from further afield than 5km. However, it was agreed with the National Park Authority that one viewpoint would be included from high ground outside of the Study Area (approximately 7km from the site boundary) to demonstrate that the effect on views from distant high ground would not be significant in EIA terms.
- 12.3.19 Three digital ZTV (Zone of Theoretical Visibility – see below paragraph 12.3.30 for a definition) maps have been produced to explore an equivalent visual Study Area of 5km. At the request of the National Park Authority, one viewpoint located at 7km from the site boundary i.e. outside of the Study Area, is included in the assessment to demonstrate that the effect on views from distant high ground would not be significant.
- 12.3.20 In identifying visual receptors, three ZTV (**Figure 12.3a, b and c** in **Appendix 12.1 - Figures**) have been prepared for the proposed development:
- **Figure 12.3a** – ZTV based on apart-hotel and visitor centre at the loch shore (this relates to Zone C: Pierhead of Figure 3.1 – Parameters Plan);
 - **Figure 12.3b** – ZTV based on the 'Station Square' development (this relates to Zone A: Station Square of Figure 3.1 – Parameters Plan); and
 - **Figure 12.3c** – ZTV based on the proposed residential development at Woodbank House (this relates to Zone E: Woodbank of Figure 3.1 – Parameters Plan); and
 - **Figure 12.3d** – ZTV based on the proposed boathouse on the site of the former Woodbank House boathouse (this relates to a single location in Zone D: Drumkinnon Wood and Bay, of Figure 3.1 – Parameters Plan).
- 12.3.21 A ZTV has not been produced for the proposed woodland lodges and other structures within Drumkinnon Woods (relating to Zone B: Riverfront and Zone D: Drumkinnon Wood and Bay, of **Figure 3.1 – Parameters Plan**). By definition these developments would be substantially screened from visual receptors in the wider Study Area and would therefore not give rise to significant visual effects. A ZTV for development within the woodland would not be a useful assessment tool.

Information Sources

Desk Top Study

- 12.3.22 The assessment has been informed by an initial desktop study, including a review of relevant documents, Ordnance Survey (OS) data, aerial photography and Google Earth Pro.
- 12.3.23 Documents which helped define LCAs across the Study Area include:

- Loch Lomond and The Trossachs National Park Landscape Character Assessment⁹;
- Glasgow and Clyde Valley Landscape Character Assessment¹⁰;
- Argyll and the Firth of Clyde Landscape Character Assessment¹¹;
- Special Landscape Qualities of the Loch Lomond and The Trossachs National Park¹²; and
- Kilpatrick Hills Local Landscape Area Statement of Importance¹³.

Fieldwork

12.3.24 A site survey was undertaken on the 29th and 30th November 2017. Its purpose was to gain further understanding and appreciation of the landscape, the special qualities of the National Park and the landscape character areas within the Study Area, to undertake the viewpoint survey, and to understand the likely effects of the proposed development. A further site survey was undertaken on 30th January 2018 to complete this work.

Approach to Assessment

Identification of Relevant Receptors

12.3.25 Predicting the likely effects of the proposed development requires identification of the receptors who are likely to be affected. This includes both:

- Landscape receptors – including the constituent elements of the landscape, its specific physical, aesthetic or perceptual qualities and the character of the landscape in different areas (LCAs); and
- Visual receptors – that is the people, whether individuals or defined groups, who will be affected by changes in views or visual amenity at different places.

Landscape Receptors

12.3.26 As noted above, LVIA involves all the components of the landscape. Some of these components are objective some are subjective. Landscape observation, description and appreciation always involves objective and subjective matters but the subjective elements confine description to the components of the landscape and not peoples' responses¹⁴ to these components.

12.3.27 Landscape receptors can include any aspect of the landscape including physical and natural landscape, cultural and biological resources as these are fundamental to our appreciation of landscape character and its distinctiveness. Examples include:

⁹ Scottish Natural Heritage (2011), Loch Lomond and The Trossachs National Park Landscape Character Assessment

¹⁰ Scottish Natural Heritage (1998), Glasgow and Clyde Valley Landscape Character Assessment

¹¹ Scottish Natural Heritage (1996), Argyll and the Firth of Clyde Landscape Character Assessment

¹² Scottish National Heritage (2010), Special Landscape Qualities of the Loch Lomond and The Trossachs National Park

¹³ West Dunbartonshire Council (2015), Kilpatrick Hills Local Landscape Area Statement of Importance

¹⁴ People's responses to the landscape will vary as a result of their own personal aesthetic taste, tolerance of sound, preferences for smells and tastes, life experiences, philosophies, interests, education and knowledge. EIA should not try to consider people's responses to landscapes. One person's landscape of wild beauty and tranquillity is bleak and remote to another.

- Specific landscape components e.g. shoreline, hill or river;
- Areas of distinctive character, special qualities of designated landscapes;
- Valued landscapes such as local beauty spots or specific viewpoints; and
- Historic and designed landscapes.

12.3.28 This assessment focuses on the landscape character areas (LCAs), defined within the existing published landscape character assessments listed the LVIA chapter. The suitability and detailed descriptions of these LCAs for the assessment was verified in the field.

Visual Receptors

12.3.29 The first step in identifying visual receptors is to digitally map areas from where the proposed development would theoretically be seen using elevation data in ArcGIS to produce a Zone of Theoretical Visibility (ZTV) map (see **Figure 12.3 at Appendix 12.1**). This is generated to represent the maximum height of the proposed development. Three ZTVs have been produced using detailed LIDAR data. This shows the area from where the proposed development may be visible, but includes the screening effects of groups of buildings or woodlands in addition to landform. A ZTV was produced for the loch shore development (apart-hotel), Woodbank House site and Station Square site.

12.3.30 The ZTVs assume climatic visibility to be 100%. In reality, the combination of landscape features and poor weather conditions can reduce visibility to a considerable extent. ZTVs therefore represents the maximum theoretical potential visibility, i.e. the 'worst case' scenario. Site survey work was therefore essential to ensuring that the baseline assessment of visibility was accurate.

12.3.31 The next step is to identify the different groups of people who would potentially be affected by the proposed development - these are referred to as 'visual receptors'. They include people living and working in the area, people passing through on road, rail or other forms of transport, people visiting promoted landscapes or attractions, and people engaged in recreation of different types. Where possible an estimate is also made of the relative numbers of different types of people who might be affected in each case.

12.3.32 The final step is to identify and agree with the National Park Authority the viewpoints from where the proposed development would be seen as these form the basis for the visual assessment. Viewpoints are selected using information from the ZTVs and from site survey to provide a balanced representation of visual effects. They include both near and distant views and represent the full range of people who may be affected. In addition to fixed views, the viewpoints also represent sequential views along key routes and transport corridors.

12.3.33 Each viewpoint is carefully selected to be as representative as possible of the view likely to be experienced in each location. Public viewpoints are selected as they are more readily accessible and are likely to be witnessed by a greater number of people. Furthermore, public views are given greater weight than private views in planning decisions.

12.3.34 To record maximum visibility, baseline photographs for each of the identified viewpoints have been taken in winter using a Canon EOS 6D digital SLR with a full frame sensor (36x24mm) using a 50mm equivalent fixed focal length lens. The photographs are taken in accordance with best practice guidance and their location recorded using an on-site GPS. The resulting images have been merged together to create panoramic views. The time at which the photographs are taken and the prevailing weather conditions have been recorded for each viewpoint.

12.3.35 Data recorded for each viewpoint is presented in the viewpoint sheets at **Appendix 12.4** of this ES.

Visualisations

12.3.36 As requested within the EIA Scoping Opinion and discussed in subsequent consultation with LLTNPA, visualisations of the proposed development have been prepared for those viewpoints where significant visual effects are considered likely. They are presented in **Appendix 12.5 Viewpoint Massing Studies and Wirelines**. As this is currently only a Planning Permission in Principle the visualisations produced focus on the likely mass of the buildings within the Proposed Development and are not intended to be photo-realistic interpretations. These visualisations further help the landscape architect in assessing the likely magnitude of visual change.

Assessment Methodology (construction and operation)

12.3.37 The LVIA follows a four step process, which is set out below.

Step 1 – Baseline Description

Landscape Baseline

12.3.38 The objective of the baseline landscape study is to provide an understanding of the landscape within the Study Area – its components, character and the way this varies spatially, its history, condition, the way it is experienced and the value attached to it. The baseline describes the landscape as it appears now, together with any known changes which will arise with or without the proposed development. It also appraises the special qualities of the National Park which are listed in the Special Landscape Qualities of the Loch Lomond and The Trossachs National Park (2010), and how they are represented within the Study Area.

12.3.39 Landscapes or their component parts may be valued at the local, national or international level, for example the National Park is value at a national scale.

12.3.40 An important part of the baseline study is to establish the value of the different landscapes within the Study Area as these inform later judgements about the significance of effect. Value in this instance means the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different people for a whole variety of reasons. Judgements on value can apply to areas of landscape as a whole, or to the individual elements, features and aesthetic or perceptual dimension which contribute to the character of the landscape.

12.3.41 The quality of a valued landscape is often explained in a citation for a designation, but where this isn't available, value can be assessed through the application of a criteria based comparative landscape approach supported by published documentation such as tourist leaflets, art and literature. This is in line with the European Landscape Convention (Ref A7.1) which promotes an 'all-landscapes approach', founded on the recognition of value in all landscapes.

12.3.42 To ensure a systematic and consistent approach, the landscape value of each LCA was described with reference to seven criteria. These criteria are based on the key landscape characteristics identified within the Loch Lomond and The Trossachs National Park Landscape Character Assessment and consideration of GLVIA3 and the range of factors listed in Box 5.1 of GLVIA3 as helping the identification of valued landscapes. The seven criteria are: landscape features (i.e. landform, land use and land cover); settlement, development and leisure; access and recreation; biodiversity; cultural heritage and associations; aesthetic qualities and perceptual qualities (e.g. tranquillity or wildness).

12.3.43 Each LCA was therefore described in terms of:

- The existing situation, including a factual description of the existing landscape - its constituent elements, its character and the way this varies spatially, its geographic extent, its history, its condition and the way the landscape is experienced;
- The existing landscape character – the distinct recognisable and consistent pattern of elements in the landscape that makes one landscape different from another; and
- The value of the existing landscape – this informs later judgments about significance of effect.

12.3.44 Landscape value¹⁵ is the relative value that is attached to different landscapes by society. Landscape value is defined as the relative value that is attached to different landscapes by society, bearing in mind that a landscape may be valued by different stakeholders for a variety of reasons such as its quality, scenic beauty, tranquillity or remoteness, for its recreation opportunities, nature conservation or its historic and cultural associations. Development will not necessarily be incompatible with valued qualities of a landscape as this will depend on the nature of the proposal and the characteristics of the landscape. Nevertheless, whilst value does not necessarily equate with suitability or lack of suitability for a proposed development, it does help inform the wider judgments from which this evaluation can be derived.

12.3.45 For each criterion, the value of the landscape within each LCA is determined using a four-point scale from low to very high using professional judgement with reference to the site visits, consultation feedback, review of background documentation and consultation with other disciplines such as ecology and cultural heritage.

12.3.46 An overall level of value for each LCA is determined using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of value provided in **Table 12.2.1** below. In making judgements on landscape value, appropriate weight is given according to the factors which are considered to be making the most contribution.

¹⁵ Value in this instance means demonstrable features that elevate it above the ordinary.

Table 12.2.1: Indicators of Landscape Value

Landscape Value	Indicator
Very High	<p>Very attractive and rare landscape of outstanding scenic quality and very distinctive characteristics, features and elements. Presence of national or international landscape designations.</p> <p>Very good condition/very well-managed and intact.</p> <p>Habitats of international or national importance, with a substantial proportion of SSSI habitats/Biodiversity Action Plan (BAP) habitats. Large areas of connected/ cohesive habitats which are also linked to natural habitats in the wider area. Records of BAP species, protected species and species of international importance.</p> <p>High cultural heritage interest which contributes significantly to landscape character with sites of designated national or international importance.</p> <p>Very high recreational value and accessibility which contributes significantly to recreational/visitor experience.</p> <p>Rich and valued cultural associations.</p> <p>Unique sense of place with very positive perceptual responses.</p> <p>No detracting features.</p>
High	<p>Attractive landscape with some distinctive characteristics, features and elements. Presence of national landscape designations.</p> <p>Good condition/well-managed and largely intact.</p> <p>Habitats of national importance (SSSIs or national nature reserves). Good representation of BAP habitats. Good linkages between habitats and reasonable links to natural habitats in the wider area. Many records of local or national BAP species and of national importance.</p> <p>Cultural heritage interest which contributes to landscape character.</p> <p>Recreational value and accessibility which contributes to recreational/ visitor experience.</p> <p>Valued cultural associations.</p> <p>Strong sense of place with positive perceptual responses.</p> <p>Occasional detracting features.</p>
Medium	<p>Typical, commonplace and unremarkable landscape, which although scenically pleasing has limited variety or distinctiveness.</p>

Landscape Value	Indicator
	<p>Average condition with some intactness but scope to improve management for land use.</p> <p>Habitats of local importance. Some linkages and connectivity to natural habitats in the wider area. Reasonable proportion of BAP habitats although these may be fragmented.</p> <p>Limited historic interest.</p> <p>Limited recreational value, poor accessibility and few visitors.</p> <p>No or very few recorded cultural associations.</p> <p>Some features worthy of conservation.</p> <p>Unremarkable sense of place with neither particularly positive nor negative perceptual responses.</p> <p>Some dominant detracting features.</p>
Low	<p>Landscape degraded or in obvious decline, visually unattractive and with poor sense of place.</p> <p>Lack of management has resulted in degradation and poor condition.</p> <p>Limited ecological value, with little connectivity and few BAP or other natural habitats.</p> <p>Limited to no cultural heritage interest.</p> <p>Limited to no recreational value or public accessibility.</p> <p>No recorded cultural associations.</p> <p>Frequent dominant detracting features.</p> <p>Poor sense of place with negative perceptual responses.</p> <p>Disturbed or derelict land requires treatment.</p>

Visual Baseline

12.3.47 The assessment of the visual baseline within the Study Area considered the following:

- The area within which the proposed development may be visible – by use of the ZTVs prepared for the proposed development;
- The different groups of people who may experience views of the proposed development;
- The identification of specific viewpoints from which to conduct the viewpoint survey; and

- The nature of the views and visual amenity at the selected viewpoints.

12.3.48 All the viewpoints used for the assessment of visual effects are in publicly accessible locations and were chosen represent the range of visual receptors and types of view likely to be experienced within the surrounding area. The area around each broad viewpoint location is explored to find the most suitable (i.e. unscreened and representative) and safe location for the view to be recorded and photographed.

12.3.49 Judgements about the value attached to the view at each viewpoint take account of:

- Views which are important in relation to the special qualities of a designated landscape (in this case the National Park);
- Views recorded as important in relation to heritage assets (as recorded in the relevant citations accompanying the designation and taking account of Historic Scotland's guidance¹⁶ on the setting of heritage assets);
- Advertised viewpoints which appear in a guidebook or on tourist maps;
- Location with provision of facilities for enjoyment e.g. parking, picnic and interpretation facilities; and
- Professional judgements about the quality and condition of the view.

12.3.50 Each viewpoint was visited and an overall level of the value of the view experienced was determined using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of value provided in **Table 12.2.2** below. In making judgements on value, appropriate weight was given according to the factors which were considered to be making the most contribution.

Table 12.2.2: Assessing the Value of the View experienced at each Viewpoint

Value of View	Indicator
Very High	<p>Iconic views of national or international importance, which are important in relation to the special qualities of a designated landscape, the cultural associations of which are widely recognised in art, literature or other media.</p> <p>The view is widely known and well-frequented and often includes interpretation and other facilities.</p>
High	<p>The view is identified in the statutory development plan and / or is a view of national or regional importance or of particular local importance, is well known, well-frequented and/ or promoted as a beauty spot/ visitor destination and has cultural associations.</p>
Medium	<p>A view identified in a supplementary planning document, conservation area appraisal and/or views of local importance. The view is in an area of</p>

¹⁶ Historic Environment Scotland (2016), Managing Change in the Historic Environment: Setting

Value of View	Indicator
	ordinary landscape value, or reasonably good landscape value but with detracting elements or features. People are unlikely to visit the viewpoint to experience the view.
Low	Viewpoint is within an area of low or very low landscape quality (e.g. industrial estate/ busy main road) that has very few positive characteristics).

Step 2 – Establishing Landscape and Visual Sensitivity

12.3.51 The sensitivity of landscape and visual receptors is made up of judgements about susceptibility of the receptor to the type of change arising from the proposed development and the value attached to the landscape or view under consideration (as defined by the baseline study).

12.3.52 Susceptibility is the ability of a defined landscape or visual receptor to accommodate the proposed development without undue negative consequences for the maintenance of the baseline situation and/ or the achievement of landscape planning policies and strategies.

Landscape Sensitivity

12.3.53 In determining landscape sensitivity, judgements are first made about the susceptibility of each LCA to the type of change arising from the proposed development. Susceptibility varies depending on the character of the landscape and the nature of the development being proposed. Generally, proposals that fit well with the scale and character of the landscape are less likely to be adverse.

12.3.54 An important step in the assessment of susceptibility is to identify and understand the key characteristics of the landscape which are more likely to be affected by the proposed development, as it is these characteristics which influence susceptibility and judgements on how successfully the proposed development is likely to be accommodated in the landscape.

12.3.55 The most susceptible i.e. vulnerable or fragile landscape is one which has little scope to accommodate the changes from the proposed development without its key characteristics being fundamentally altered, potentially leading to a different landscape character and conflicting with planning policies and strategies. Conversely a robust landscape is one which is resilient to the changes arising from the proposed development. In such cases only individual elements and/ or features, or a particular aesthetic and perceptual aspect may be affected and the proposed development accords with planning policies and strategies.

12.3.56 The susceptibility of the landscape to the development was considered using the same criteria outlined above for assessing the landscape value and again each criteria was judged on a four-point scale from low to very-high using professional judgement with reference to site visits, consultation feedback, review of background documentation and consultation with other disciplines such as ecology and cultural heritage.

12.3.57 The landscape in each of the LCAs is systematically assessed against each of these criterion and judgements made on a four-point scale from low to very-high using professional judgement with reference to site visits, consultation feedback, review of background documentation and consultation with other disciplines such as ecology and cultural heritage.

12.3.58 These judgements are then considered together to inform an overall evaluation of the susceptibility of each LCA using professional judgement to assimilate the assessments made for each of the criteria and draw out the criteria most important to susceptibility in each case.

12.3.59 Finally the judgements on value (as defined in the baseline study) and susceptibility of the landscape within each LCA is combined into an overall judgement on sensitivity using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of landscape sensitivity provided in **Table 12.2.3** below. In making judgements on landscape sensitivity, appropriate weight is given according to the factors which were considered to be making the most contribution.

Table 12.3.3: Assessing the Sensitivity of Landscape Receptors to the Proposed Development

Sensitivity of Landscape Receptors	Indicator
Very High	<p>A landscape whose overall character, its individual elements/ features or particular aesthetic or perceptual aspects are extremely vulnerable to loss or change and offer little or no opportunities to accommodate the proposed development without its key characteristics being fundamentally altered, leading to a different landscape character. The proposed development conflicts with planning policies and strategies.</p> <p>Typically includes:</p> <ul style="list-style-type: none"> – Iconic landscapes which are very well known, well visited and distinctive ('honeypot locations' in statutorily designated landscapes); – Landscape containing large areas of elements/ features that are unique or nationally scarce, including mature vegetation such as ancient woodland or veteran trees; – Landscapes that are defined by very distinctive aesthetic or perceptual elements/ features; – Historic landscapes with heritage assets that make a strong contribution to landscape character and conversely where the landscape makes a strong contribution to the heritage asset; – Landscapes which offer a rich array of memories and cultural associations; – Intact landscapes with strong time depth; – Landscapes that are very well maintained with components in excellent condition; and – Landscapes which offer no realistic scope for substitution or positive enhancement.
High	<p>A landscape whose overall character, its individual elements/ features or particular aesthetic or perceptual aspects are very vulnerable to loss or change and offer only limited opportunities to accommodate the proposed development, without its key characteristics being substantially altered. The proposed development conflicts with planning policies and strategies.</p> <p>Typically includes:</p>

Sensitivity of Landscape Receptors	Indicator
	<ul style="list-style-type: none"> – Landscapes of distinctive and highly valued character and/ or scenic quality (including most statutorily designated landscapes); – Landscape containing elements/ features that are unique or nationally scarce, including mature vegetation such as ancient woodland or veteran trees; – Landscapes defined by very distinctive aesthetic or perceptual elements/ features that are a defining part of its character; – Landscapes that are well maintained with components mostly in very good condition; and – Landscapes which offer no or limited scope for substitution or positive enhancement.
Medium	<p>A landscape whose overall character, its individual elements/ features or particular aesthetic or perceptual aspects are reasonably robust, but may exhibit vulnerability to adverse effects from inappropriate or unsympathetic development that may lead to wider effects on character. There will be some consequences for the achievement of landscape planning policies and strategies.</p> <p>Typically includes:</p> <ul style="list-style-type: none"> – Landscapes of positive character but with some evidence of alteration/ degradation of elements/ features resulting in areas of more mixed character; – Landscapes that are valued by local communities; – Landscapes containing elements/ features that are commonplace; – Landscapes containing elements/ features that are rare or unusual locally but are in degraded or poor condition; and – Landscapes with components in reasonable condition and/ or with some scope for substitution or positive enhancement.
Low	<p>A landscape whose overall character, individual elements/ features, or particular aesthetic aspects are robust, resilient to change and offer good opportunities to accommodate the proposed development without undue negative consequences for the baseline situation. Only individual elements and/ or features, or a particular aesthetic and perceptual aspect may be affected. The proposed development accords with planning policies and strategies.</p> <p>Typically includes:</p> <ul style="list-style-type: none"> – Landscapes that are relatively bland or neutral in character with few or no distinctive elements/ features; – Landscapes in poor or degraded condition; – Landscapes containing elements/ features that are nationally or regionally ubiquitous or make little contribution to local distinctiveness;

Sensitivity of Landscape Receptors	Indicator
	<ul style="list-style-type: none"> – Landscapes containing intrusive elements/ features that detract from landscape character e.g. transport or power infrastructure; and – Landscapes whose key aesthetic or perceptual aspects are robust and unlikely to be affected by the development, or is in the main negative.

12.3.60 It is worth noting that the relationship between the value attached to a landscape and its susceptibility to change is often complex as noted by GLVIA3 (para.5.46):

- *‘An internationally, nationally or locally valued landscape does not automatically and by definition have high susceptibility to all types of change;*
- *It is possible for an internationally, nationally or locally important landscape to have relatively low susceptibility to change arising from the particular type of development in question, by virtue of both the characteristics of the landscape and the nature of the proposal; and*
- *The particular type of development may not compromise the specific basis for the value attached to the landscape’.*

Visual Sensitivity

12.3.61 In determining visual sensitivity, judgements are first made about the susceptibility of each visual receptor to the type of change arising from the proposed development. The susceptibility of visual receptors is typically a function of the occupation or activity of people experiencing the view at a particular locations and the extent to which their attention or interest may therefore be focused on the view and the visual amenity they experience. The most susceptible visual receptors include people with a particular interest in their surroundings and with prolonged viewing opportunities such as:

- Residents at home;
- People engaged in outdoor recreation whose interest is likely to be focused on landscape and views (e.g. users of land distance routes, country parks and PRoW;
- Visitors to heritage assets or other attractions where views are important to the experience; and
- Communities where views contributing to landscape setting are enjoyed by residents in the area.

12.3.62 The least susceptible visual receptors include people with a limited or passing interest in their surroundings or with limited viewing opportunities, such as:

- Commuters;
- People engaged in outdoor sport or recreation which does not involve an appreciation of view; and

- People at their place of work, whose attention is likely to be focussed on their activity rather than on the view.

12.3.63 For each viewpoint the judgements on value (as defined in the baseline study) and susceptibility of the visual receptors are combined into an overall judgement on visual sensitivity using a four-point scale from low to very high using professional judgement to assimilate the individual assessments and reference to the indicators of visual sensitivity provided in **Table 12.2.4**. In making judgements on sensitivity, appropriate weight is given according to the factors which are considered to be making the most contribution.

Table 12.2.4: Assessing the Sensitivity of Visual Receptors to the Proposed Development

Sensitivity of Visual Receptors	Indicators
Very High	<p>Locations which people might visit purely to experience a highly valued and iconic view and which typically offer a prolonged viewing experience. Typically includes:</p> <ul style="list-style-type: none"> – People visiting tourist, visitor and other destinations (marked on OS plans and providing interpretation and facilities) which are visited by high numbers of people and where the view is fundamental to the experience; – People visiting recreational destinations where the view is fundamental to the visitor experience; – People using nationally designated long distance routes (may be lower if setting is degraded); – People travelling along promoted scenic drives or tourist routes within a national park or national scenic area; and – People visiting heritage destinations affording a specific, important and highly valued view.
High	<p>Locations where people experience a valued, well composed view of regional or local value, with no or few detracting features and where change would be highly noticeable. People are likely to pause to appreciate the view which may be in a nationally designated landscape and/ or is experienced by people, whether residents or visitors, whose attention or interest is likely to be focused on the view. Typically includes:</p> <ul style="list-style-type: none"> – Residents at home (may be lower if in a degraded setting where expectations may be reduced); – People living and moving around their local community where views contribute to a high quality landscape setting; – General views and PRoWs within a national park or national scenic area; – Locally promoted walks and cycle routes; – Promoted scenic drives or tourist routes outside a national park or national scenic area; – Tourist, visitor and other destinations where the view is important but not fundamental to the experience;

Sensitivity of Visual Receptors	Indicators
	<ul style="list-style-type: none"> – Regionally promoted walks and cycle routes; and – People engaged in outdoor recreation whose interest is likely to be focused on the landscape, including users of local PRoWs.
Medium	<p>Locations where receptors experience a view of reasonably good landscape value and pleasing composition but with some detracting elements and features, where change would be less noticeable. People are likely to have a general interest in their surroundings but are unlikely to visit the viewpoint specifically to experience the view. Typically includes:</p> <ul style="list-style-type: none"> – People in rural offices and business parks; – Pedestrians and motorists on rural roads and lanes where their attention is likely to be focussed partly on their surroundings; – People walking along residential streets; – Rural outdoor workers and those engaged in marine surface based activities such as fishing; – People using urban PRoW and incidental footpaths; – Users of the residential, distributor and local road network; and – People using general public open space, greenspace, recreation grounds and play areas.
Low	<p>Locations where the view is incidental but not important to the receptors and the nature of the view is of limited value or poorly composed with numerous detracting features and is tolerant of a large degree of change. The viewpoint location may be transient and/ or experienced only in passing by people, whether residents or visitors, whose attention or focus is on other activities, not on their surroundings. Typically includes:</p> <ul style="list-style-type: none"> – Commuting pedestrians and motorists; – People at their place of work (industrial and commercial buildings) where the setting is not important to the quality of working life; – Users of indoor facilities; – People engaged in formal sports activities, the enjoyment of which does not depend on an appreciation of the view or surroundings; and – People travelling on high speed main roads/ rail routes (although sensitivity may be higher in scenic locations).

12.3.64 Depending on the individual circumstance of each receptor, the assessment of sensitivity in **Table 12.2.4** is adjusted up or down to fully reflect the viewer's expectations at a particular viewpoint and the nature of the development proposed in that location. For example, walkers on a national trail in an attractive rural location are likely to be more sensitive to a large scale commercial development than they would to a new property built in the local vernacular. Alternatively if a section of the trail passes through an industrialised or urban area, it is likely that the expectations of people using the trail (and therefore their sensitivity) would be reduced. Similarly, drivers within the urban area are typically considered of low sensitivity but

if a road is part of a scenic route, such as the A82 along the western banks of Loch Lomond, their sensitivity increases.

12.3.65 In formulating sensitivity categories, it is also important to acknowledge the special circumstances where peoples' expectations in relation to the view are particularly enhanced such as at widely known and promoted viewpoints, the cultural associations of which are typically recognised in art, literature or other media. Here the category of 'very high' sensitivity applies. If all receptors within the National Park were defined as having 'very high' sensitivity, then this would undervalue the primacy of iconic and highly valued viewpoints. Similarly, the rationale behind attributing a 'high' rather than 'very high' sensitivity for residents and people in local communities is because they do not have the highest level of sensitivity unless standing at a particularly valued viewpoint, in which case they are captured under that category of visitor.

Step 3 – Predicting the Magnitude of Likely Change

12.3.66 Prediction of the likely magnitude of landscape and visual change combines judgements about the size and scale of the likely effect and the geographical extent of the area over which it occurs. When predicting magnitude of likely change the embedded mitigation, listed in **Section 12.6 – Embedded Mitigation**, was taken into account.

Magnitude of Landscape Change

12.3.67 Prediction of the likely magnitude of landscape effect comprises judgements about the size and scale of the effect and the geographical extent of the area affected.

12.3.68 Paragraph 5.37 of GLVIA3 sets out the criteria which should be used in reaching a judgement on the nature or magnitude of effect. These include but are not necessarily restricted to:

- *'the degree to which the proposal fits with existing character; and*
- *the contribution to the landscape that the development may make in its own right, usually by virtue of good design, even if it is in contrast to existing character'.*

12.3.69 For each LCA the judgements on size/scale of effects and geographical extent were combined and an overall prediction of the likely magnitude of change made using a five-point scale of negligible to very-high based on professional judgement and the indicators set out in **Table 12.2.5**.

12.3.70 The magnitude of change is also assessed as being either beneficial or adverse where for:

- Beneficial change - the development, or part of it, would appear in keeping with existing landscape character and would make a positive visual and/ or physical contribution to the key characteristics. Removal of uncharacteristic or unsightly features would also be a beneficial change; and
- Adverse change - the development, or part of it, would be perceived as an uncharacteristic or intrusive component in the context of existing landscape character and would have a negative visual and/ or physical effect on key characteristics.

Table 12.2.5: Assessing the Likely Magnitude of Landscape Change

Likely Magnitude of Landscape Change	Indicators
Very High	Considerable change to the landscape over a wide area or intensive change over a limited area with severe negative consequences for the character, quality and integrity of the baseline landscape. Introduction of very uncharacteristic elements or features that completely alter the character and/ or a large part of the setting of the landscape character area. The development would be a dominant landscape feature and would fundamentally change the baseline landscape such that a new landscape character may be created. If designated, affecting the reasons for the designation.
High	Conspicuous change to the landscape over a wide area or considerable change over a limited area with undesirable consequences for the character, quality and integrity of the baseline landscape. Introduction of uncharacteristic elements or features that substantially alter the character and/ or a large part of the setting of the landscape character area. The development would be a prominent landscape feature and the baseline landscape would be substantially changed. If designated, affecting the reasons for the designation.
Medium	Noticeable change to the landscape over a wide area or conspicuous change over a limited area, with some undesirable consequences for the character, quality and integrity of the baseline landscape. Introduction of new elements or features that are prominent but largely characteristic of the landscape character area or its setting. The development would form a conspicuous landscape feature and the baseline situation may be noticeably changed. If designated, unlikely to affect the reasons for the designation.
Low	Very slight change to the landscape over a wide area or noticeable change over a limited area, with few or no undesirable consequences for the character, quality and integrity of the baseline landscape. Introduction of new elements or features that form inconspicuous components of the landscape character area or its setting. Largely characteristic of the character area or its setting. The development would be perceptible but the baseline landscape would remain largely unchanged. If designated, not affecting the reasons for the designation.
Negligible	Very minor loss of or alteration to key features or perceptual aspects of the baseline and/or the addition of new features that are not uncharacteristic with the surrounding landscape - approximating a 'no change' situation. The effects would be at the site level, within the development site itself. The effects would be very short term and/or reversible.

Magnitude of Visual Change

12.3.71 At each of the viewpoints, the likely change in the view was predicted in terms of its size or scale and the geographical extent of the area influenced based on consideration of the following factors:

- Extent – the extent of the baseline view that would be occupied by the proposed development – full (unobstructed by vegetation, topography or intervening structures) or partial (obstructed to some extent) or glimpsed;
- Proportion of the proposed development visible - full (all), most (more than 75%), half (50%), small amount (<25%) or none;
- Contrast – how would the visible parts of the proposed development would relate to the surrounding baseline features: high, medium or low levels of contrast;
- Angle of view – direct (head on or close to), oblique (45° to head on) or peripheral (>45° i.e. on the edge of vision);
- Distance – between the site and the receptor: close (0 -100m), middle (100 - 500m) and long (0.5km or more); and
- Duration and reversibility – the relative time over which the view would be experienced (short term < 12 months, medium term 1 - 15 years or long term 15 years plus), temporary or permanent, intermittent or continuous e.g. transient (views which are normally experienced when in motion) and seasonal (views which will be subject to seasonal leaf cover).

12.3.72 Other considerations which were taken into account included the level of activity in a scene, presence of noise or lighting, traffic movement, nature of scene (open and directionless, or closed and bounded) and any other elements that may affect peoples' perception of the view.

12.3.73 For each viewpoint the judgements on size/scale of effects and geographical extent were combined and an overall prediction of the likely magnitude of change made using a five-point scale of negligible to very-high based on professional judgement and the indicators set out in **Table 12.2.6**.

12.3.74 The magnitude of change is assessed as being either beneficial or adverse where for:

- Beneficial change - the development, or part of it, would be perceived as a positive addition in the context of the existing view; and
- Adverse change - the development, or part of it, would be perceived as an uncharacteristic or intrusive component in the context of the existing view.

Table 12.2.6: Assessing the Likely Magnitude of Visual Change

Likely Magnitude of Visual Change	Criteria
Very high	The balance of features and composition of the view would change markedly and fundamentally affect the appreciation of the view.

Likely Magnitude of Visual Change	Criteria
	<p>The proposed development would affect a substantial proportion of the view.</p> <p>The changes or new features would represent an obvious contrast with existing features.</p> <p>Views of the changes would be clear and unencumbered by screening features.</p> <p>The proposed development is likely to occupy the foreground of the view.</p>
High	<p>The balance of features in the view would change, but not to such a degree that the existing composition of the view or appreciation of it would fundamentally change.</p> <p>The proposed development would, whilst obvious, be subordinate to existing features.</p> <p>The proposed development is likely to occupy the middle ground of the view.</p>
Medium	<p>The balance and composition of the view would not change greatly from the baseline.</p> <p>The proposed development would only affect a small proportion of the view.</p> <p>The changes or new features would not contrast strongly with existing features.</p> <p>Views of the change may be screened or filtered or otherwise unencumbered by foreground features.</p> <p>The proposed development is likely to occupy the background of the view.</p> <p>The changes will barely affect the composition or appreciation of the view.</p>
Low	<p>The balance and composition of the view would only change slightly from the baseline.</p> <p>The proposed development would only affect a very small proportion of the view.</p> <p>The changes or new features would blend into existing features.</p>

Likely Magnitude of Visual Change	Criteria
	Views of the change may be screened or filtered or otherwise unencumbered by foreground features. The proposed development is likely to occupy the background of the view.
Negligible	The changes will be barely noticeable and would not affect the composition or appreciation of the view. Approximates the 'no change' situation.

Assumptions and Limitations

12.3.75 All constructions effects are assumed to be adverse.

12.3.76 It was not possible to enter the curtilage of private residential properties therefore the assessment of potential effects on the visual amenity of residents has been carried out from nearby roads and footpaths.

12.3.77 Due to the field work being undertaken during the winter months it was not possible to access Inchmurrin Island to undertake a field survey or viewpoint photography. A panoramic photograph has been provided by the LLTTNP for use within this report and the impact assessment has been completed via desk-top research only by an individual experienced in completing LVIA's for numerous types of development.

Establishment of Effect Level and Significance

12.3.78 To draw final conclusions about the likely level and significance of landscape and visual effects, the separate judgements about the value and sensitivity of the individual landscape and visual receptors and the magnitude of each effect were combined to allow a final judgement to be made. The likely level of effect was first identified when assessing potential effects in the absence of further (i.e. not embedded) mitigation (see Section 12.7), with the residual significance of likely effects then confirmed in Section 12.9.

Step 4 – Determining the Significance of Effects

12.3.1 Assessment of the likely level and significance of landscape or visual effects required the application of professional judgement to weigh the sensitivity of the landscape or visual receptors with the magnitude of predicted change. Effects may be adverse or beneficial. The broad criteria that influenced the level and significance of landscape and visual effects are set out in **Table 12.2.7** below. Because different factors may be relatively more or less important depending on the particular location, the presence of any combination of factors which contribute to sensitivity or magnitude was considered when assessing the level (and thus significance) of effect.

12.3.2 In IEMA's publication, The State of Environmental Impact Assessment Practice in the UK, a range of different factors that should be considered when determining the significance of an effect are identified. These include:

- The legal and policy context, which offers protection to the environment and community;
- Knowledge and experience of significance from previous assessments;

- Details of the development being proposed, such as construction and operational activities, and the nature of the effects associated with such activity;
- Details about the environmental sensitivity of the area that will be affected; and
- Feedback from scoping and consultation often including views from the local community.

12.3.3 A further consideration is the duration of the predicted change and whether it could be reversed if the proposed development were removed.

12.3.4 The final judgment on whether each effect should be considered significant in the context of the EIA Regulations took account of relevant proposed further mitigation and enhancement measures (**Section 12.8** of the main LVIA chapter). It also relied on informed professional judgement, supported by narrative text to draw out the key issues, describe the effects and explain the underlying rationale.

Table 12.2.7: Definitions of Significance Scale

Effect Level and Significance	Definition
Major Adverse (significant)	<p>Would be at considerable variance with the existing character and/or setting of the landscape, degrading its integrity.</p> <p>Would permanently destroy, degrade or diminish valued characteristic elements/features (including aesthetic or perceptual qualities), particularly rare or distinctive landscapes.</p> <p>Would cause a substantial deterioration in the view.</p> <p>Would conflict with international, national, regional or local environmental policies for the protection and enhancement of the landscape.</p>
Moderate Adverse (significant)	<p>Would be at variance with the existing character and/ or setting of the landscape, and diminish its integrity.</p> <p>Would destroy, degrade or diminish valued characteristic elements/features (including aesthetic or perceptual qualities).</p> <p>Would cause a noticeable deterioration in the view.</p> <p>Would be slightly compatible with local environmental policies for the protection and enhancement of the landscape.</p>
Minor Adverse	<p>Would be slightly at variance with the existing character/ landscape setting or view.</p> <p>Would damage or partially remove some locally valued characteristic elements/features.</p> <p>Would cause a perceptible deterioration in the view.</p>

Effect Level and Significance	Definition
Negligible	Would be compatible with the existing character/ landscape setting or view.
Minor Beneficial	Would slightly enhance the existing character/ landscape setting or view.
Moderate Beneficial (significant)	<p>Would markedly improve and enhance the existing landscape character/ landscape setting or view.</p> <p>Would restore or enhance valued characteristic elements/features largely lost through other land uses.</p> <p>Would make a positive contribution to local environmental policies for the protection and enhancement of the landscape.</p>
Major Beneficial (significant)	<p>Would considerably improve and enhance the existing landscape character/ landscape setting or view.</p> <p>Would restore or reinstate valued characteristic elements/features entirely or substantially lost through other land uses.</p> <p>Would make a substantial positive contribution to local environmental policies for the protection and enhancement of the landscape.</p>

12.3.5 Each of these four categories (Major, Moderate, Minor or Negligible) covers a broad range of effects and represents a continuum or sliding scale as illustrated in the diagram below, which is adapted from the 'EIA Significance Evaluation Matrix' Figure 6.3 in The State of Environmental Impact Assessment Practice in the UK published by IEMA. Any effect judged to be Major or Moderate is deemed to be significant.

12.3.6 As noted in GLVIA3 (para. 6.44), the relationship between receptors and effects is not generally a linear one and there are no hard or fast rules about what makes an effect significant. In terms of landscape effects, paragraph 5.56 of GLVIA3 notes that at opposite ends of the spectrum:

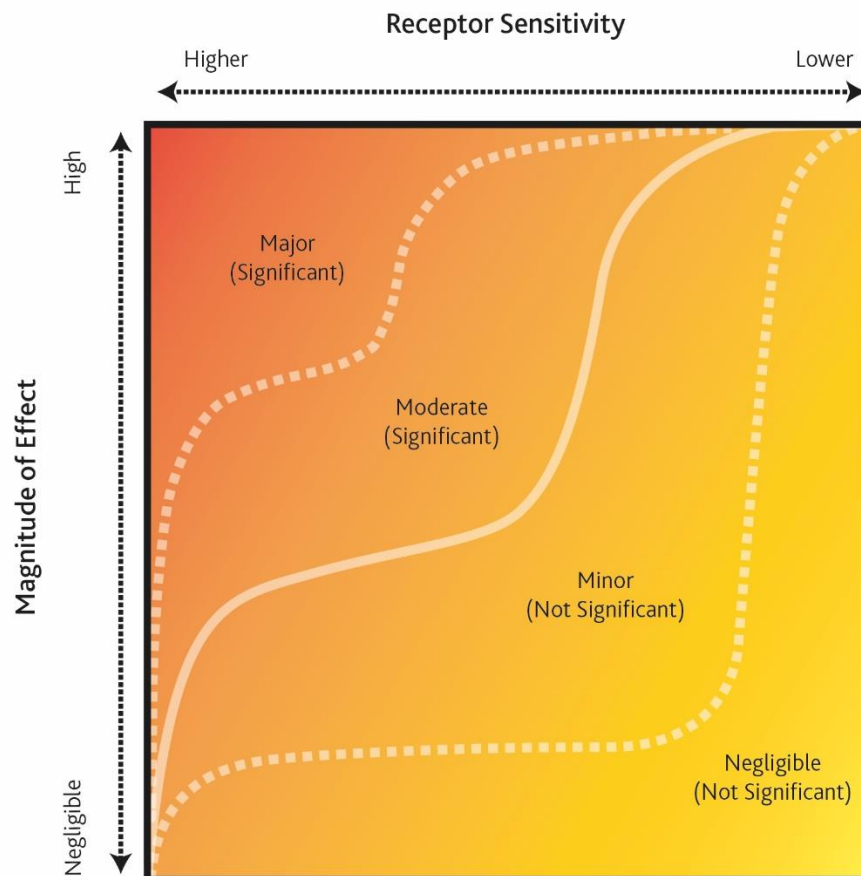
- *'Major loss or irreversible negative effects, over an extensive area, on elements and/or aesthetic and perceptual aspects that are key to the character of nationally valued landscapes are likely to be of the greatest significance; and*
- *Reversible negative effects of short duration, over a restricted area, on elements and/or aesthetic and perceptual aspects that contribute to, but are not key characteristics of the character of landscapes of community value, are likely to be of the least significance and may, depending on the circumstances, be judged as not significant'.*

12.3.7 In terms of visual effects, paragraph 6.44 of GLVIA3 notes the following:

- *'Effects on people who are particularly sensitive to changes in views and visual amenity are more likely to be significant;*
- *Effects on people at recognised and important viewpoints or from recognised scenic routes are more likely to be significant; and,*
- *Large-scale changes which introduce new, non-characteristic or discordant or intrusive elements into the view are more likely to be significant than small changes or changes involving features which are already present within the view'.*

12.3.8 The final judgment on whether each effect should be considered significant relies on informed professional judgement and is supported by narrative text to draw out the key issues, describe the effects and explain the underlying rationale.

Diagram 12.2: EIA Significance Evaluation Matrix



Adapted from Figure 6.3 EIA Significance Evaluation Matrix from IEMA's Report - The State of EIA Practice In The UK, (2011)

12.3.9 Where landscape or visual effects were judged to be adverse and at a level which would be significant in the context of the EIA Regulations proposals for preventing/avoiding, reducing or offsetting or compensating for such effects (referred to as further mitigation) have been identified where possible. The likely level and significance of residual effects remaining after taking account of further mitigation have been summarised as the final step in the assessment process (**Section 12.9** of the main LVIA chapter).

12.3.10 Residual significant effects are those effects which will persist after any mitigation. Residual effects associated with construction will typically be temporary, lasting the duration of the construction phase. For operation, residual significant effects will only be reported for significant effects that persist from year 15 after opening as maturing of the planting proposals, included as part of the development proposals, and any additional mitigation measures could mitigate effects reported at year 1 of operation (currently anticipated as 2020).

Approach to Cumulative Impact Assessment

12.3.11 Cumulative landscape and visual effects are the likely additional landscape and visual effects to arise from the proposed development when considered in conjunction with other relevant development proposals, as defined in **Chapter 2 – Site and Surrounding Area** and shown on **Figure 2.2 in Appendix 2.1**.

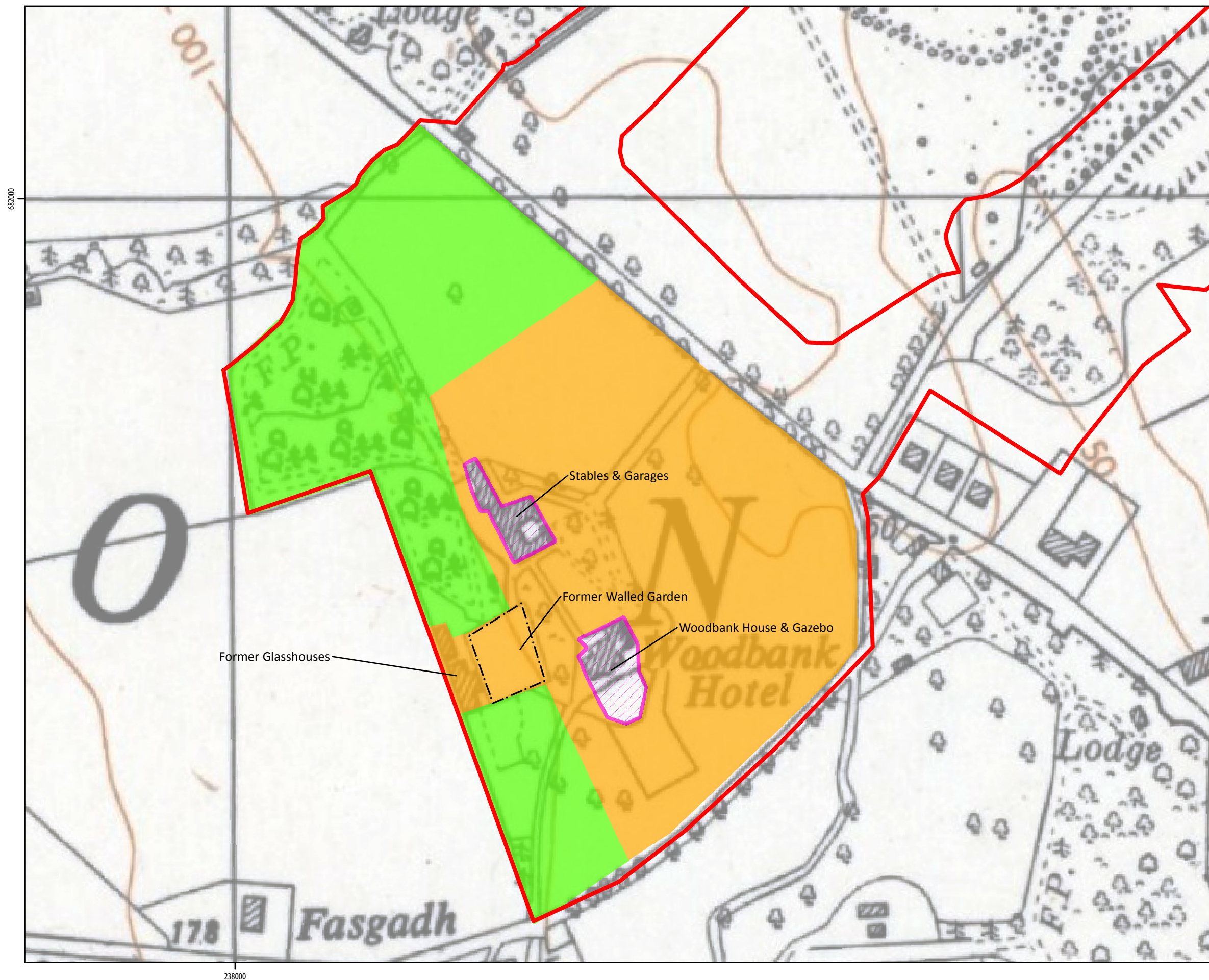
12.3.12 The proposed and consented developments to be considered, as identified by the LLTNPA, are:

- Replacement building and infrastructure for Sweeney's Cruises (planning application 2017/0373/DET);
- Drumkinnon Bay dredging (planning permission 2017/0326/DET). Consented January 2018;
- Woodbank Inn Hotel Extension (planning permission 2017/0223/DET). Consented November 2017;
- Balloch Street Design Project (see <https://www.sustrans.org.uk/balloch>)

12.3.13 It is not considered, due the scale and type of development, that any of the above identified proposals would likely cause noticeable cumulative landscape or visual effects. However, where applicable the cumulative impact assessment has adopted the same methodology as for the assessment of likely landscape and visual effects from the proposed development itself.

Appendix 13 – Archaeology and Cultural Heritage

Appendix 13.1 – Figures and Plates



KEY

- ▬ Site Boundary
- ▬ Heritage Protection Zone
- High Sensitivity
- Low Sensitivity

Extract from 1968 Ordnance Survey, Sheet 18
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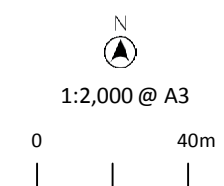


Figure 13.1:
Areas of Sensitivity within
Woodbank Estate

FEI Appendix 13.1 - Plates



Plate 1: Historic (early twentieth century) view of Woodbank House from east



Plate 2: Historic (early twentieth century) view of Woodbank House from south



Plate 3: Historic (early twentieth century) view of Woodbank House (and stables to right of picture) from entrance to driveway on the Old Luss Road

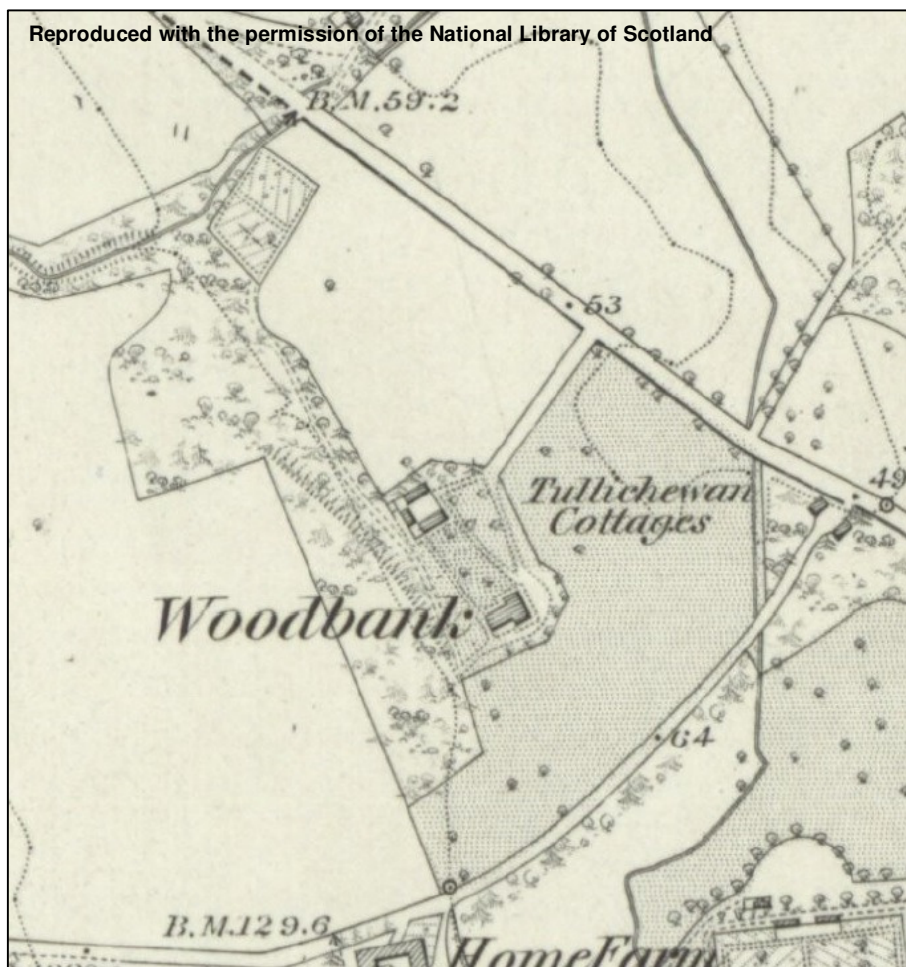


Plate 4: Ordnance Survey 1864, Sheet 18

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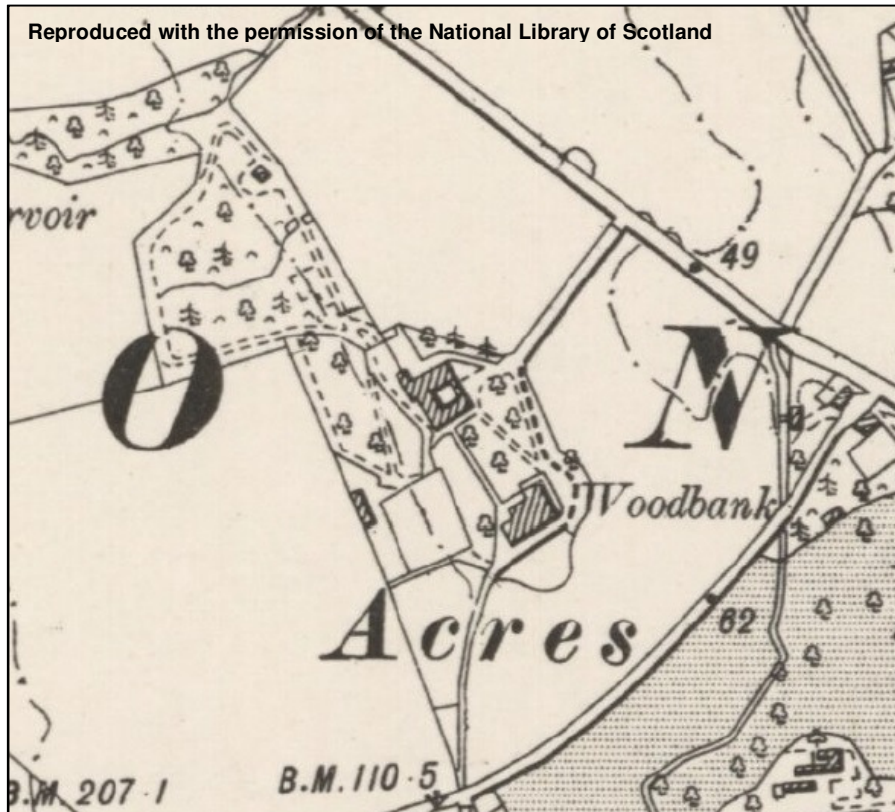


Plate 5: Ordnance Survey 1899, Sheet 18-NW

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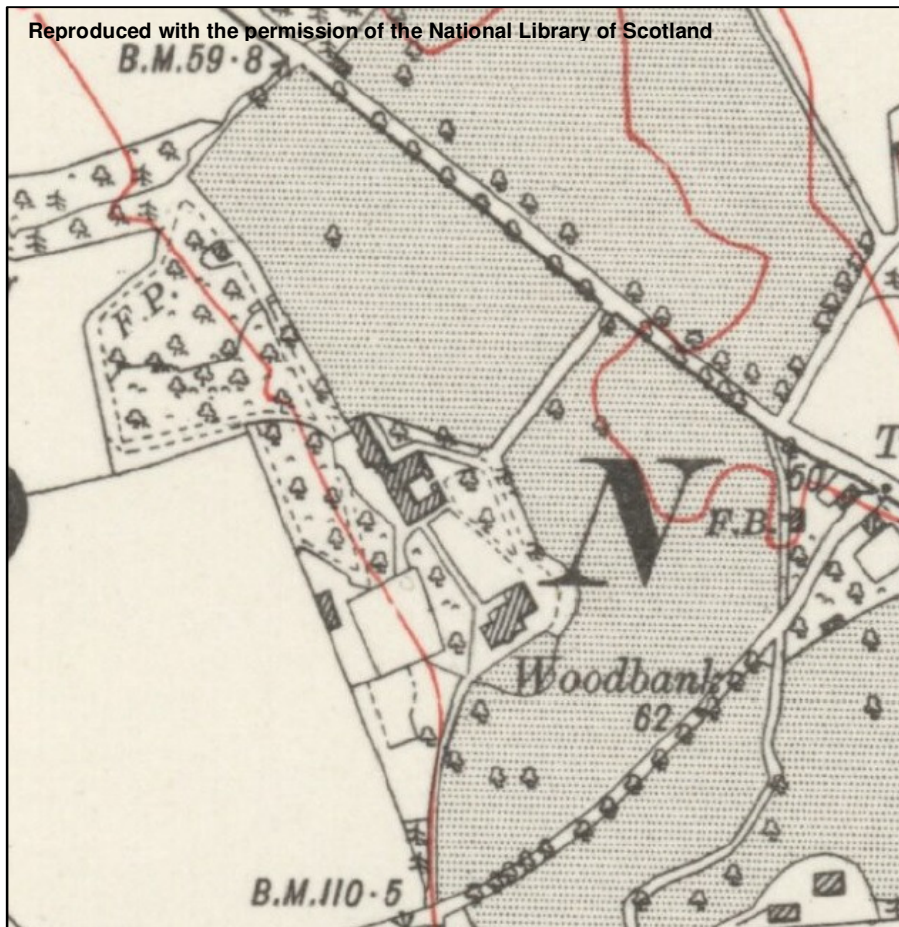


Plate 6: Ordnance Survey 1923, Sheet 18



Plate 7: View of topography, looking east from north-west edge of Woodbank Estate



Plate 8: Looking south towards Woodbank House and driveway from north-east corner of estate



Plate 9: Woodbank Estate, looking south-east from north-west corner of parkland

Reproduced with the permission of the National Library of Scotland

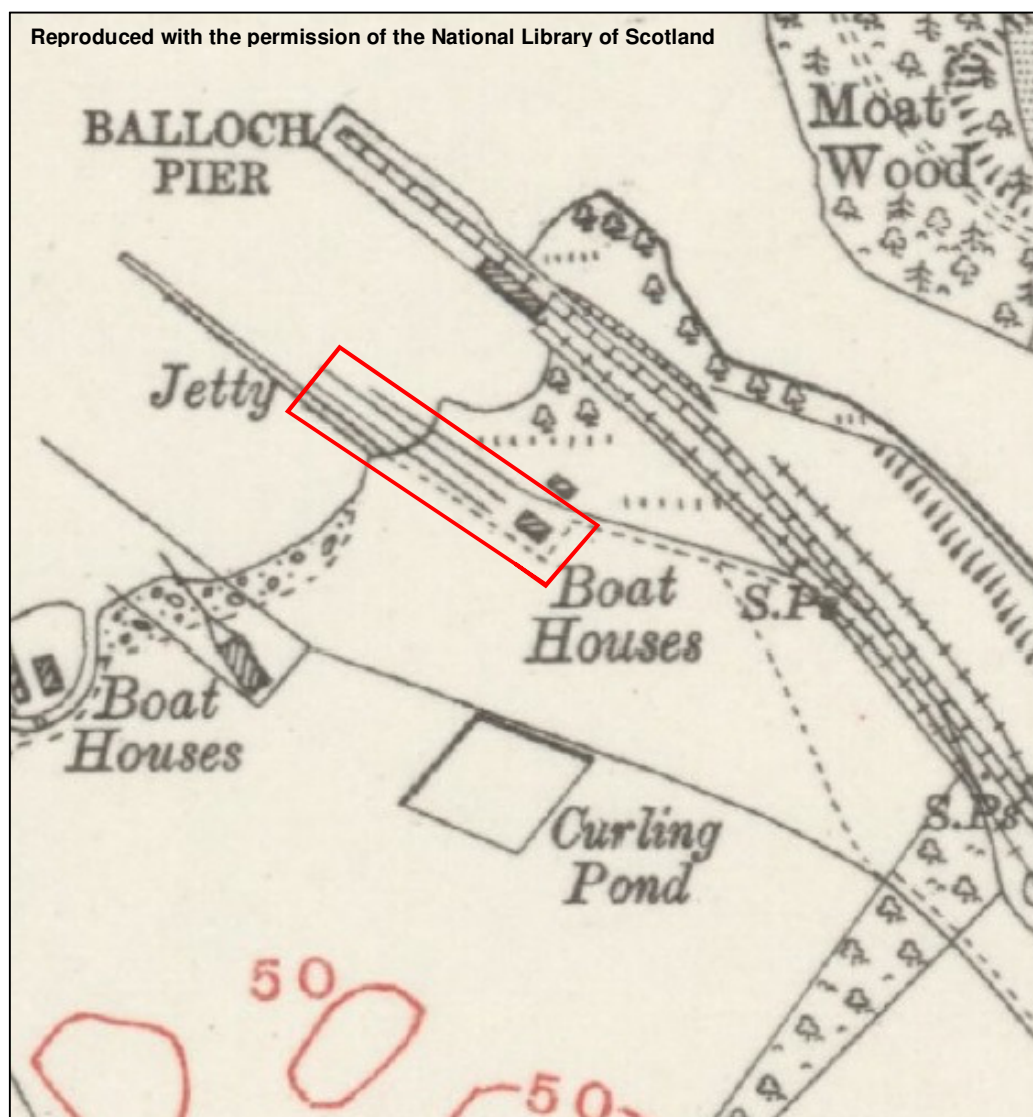


Plate 10: Ordnance Survey 1923, Sheet 18 (Winch House and slipway highlighted)



Plate 11: Setting of winch House and slipway, looking north-east from car park



Plate 12: Setting of Winch House and slipway, looking north-east from car park

Appendix 6 – Ecology and Woodland

Appendix 6.1 – Woodland Summary



West Riverside and Woodbank Woodland Summary



December 2018

West Riverside and Woodbank Woodland Summary

Client: TSL Contractors Limited

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This report has been prepared by EnviroCentre Limited with all reasonable skill and care, within the terms of the Contract with TSL Contractors Limited ("the Client").



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1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd were requested to produce a summary report describing the chronology, results and appraisal of tree and woodland survey relating to the design and application process for the West Riverside development. This report provides a synopsis of information from baseline studies and surveys, the design access statement principals, the Environmental Statement¹ (ES) proposed mitigation and information from the ES appendices.

During the process of ecological survey and ultimately Ecological Impact Assessment (EclA) it was noted that the dominant habitat present across the site is broadleaved woodland varying from newly established plantation, long established plantation origin oak woodland with some semi-natural characteristics, to maturing planted exotic (but generally domiciled species) trees. The development design principles included core woodland retention, some adaptation of the newly established planted woodland areas, woodland restoration and habitat/landscape enhancement where possible.

The survey and assessment process was iterative and bespoke to the site and design requirements and was consulted upon through the EIA development process.

1.2 Scope of Report

This report summarises the survey methods and assessment undertaken of woodland and trees to date; and the outcomes of this process used to inform the design principles for an application of Planning Permission in Principle for the proposed development including an assessment of likely impacts and the relevant avoidance, mitigation and compensation strategies to be embedded within the development proposal.

1.3 Report Usage

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¹ West Riverside and Woodbank House Environmental Statement Dated May 2018

2 BASELINE CONDITIONS

2.1 Desk Study

2.1.1 Tree Preservation Order, Scottish Native Woodland and Ancient Woodland Inventory

The site is not covered by a Tree Preservation Order² or Conservation Area³. There is a tree preservation order, known as The Gateway Orientation Area, to the north of the site covering the woodland which houses a Bird of Prey Centre.

Scottish Native Woodland and Ancient Woodland Inventory sites are present within the site boundary. Long-established of plantation origin (LEPO) woodland is present in the west, north and centre of the site. The woodland present in the north and west offer connectivity to similar habitat in the wider area. Figure 2-1 below depicts the extent of LEPO designations applicable to the site.



Figure 2-1: Ancient Woodland Inventory shapefiles

Scottish native woodland habitats are present in the west, centre and across the east of the site, these offer connectivity to the north beyond the site boundary and to fragmented woodland in the east. Please refer to Appendix A for further details of Ancient Woodland Inventory present within the site and its immediate surrounds.

2.1.2 Site History

The site has seen differing land uses over the years. At one time the area would have formed part of the natural forest of Scotland and a cohesive network of dense riparian woodland adjacent to Loch Lomond and the River Leven. Anthropogenic factors would have seen woodland clearance for agriculture and designed

² Loch Lomond and the Trossachs Tree Preservation order Listings: <https://www.lochlomond-trossachs.org/planning/planning-applications/make-an-application/tree-preservation-orders-national-park/> (Accessed 03/12/2018)

³ Loch Lomond and the Trossachs Conservation area listings: <https://www.lochlomond-trossachs.org/planning/planning-applications/make-an-application/listed-buildings-conservation-areas/> (Accessed 03/12/2018)

landscapes in the area, as is shown in Figure 2-2 below in an extract from Roy's Military Map of the Highlands 1747-52⁴. The location of the Riverside site is approximately depicted by a blue circle. This area is slightly shaded in green which may depict grassland or wetland, and the linear dots which may symbolise cultivated land, although they are less defined than neighbouring symbology thus could differ in type. Few distinct trees/woodland are shown in the area.



Figure 2-2: Extract from Roy's Military Map showing distinct anthropogenic activity in the area

Moving through time, the next distinct period of note is one of well-known industrial uses including extensive land use change to cater for widespread woodland coppicing, processing and transport by boat and rail. The region also became a popular tourist destination followed by a rise in residential development. By 1930, shown in Figure 2-3 below, it is clear that the LEPO woodland had been felled (and probably re-stocked) and the River Leven riparian woodland was undergoing significant fragmentation. The area we now know as Drumkinnon woods was largely cultivated land for arable crops.

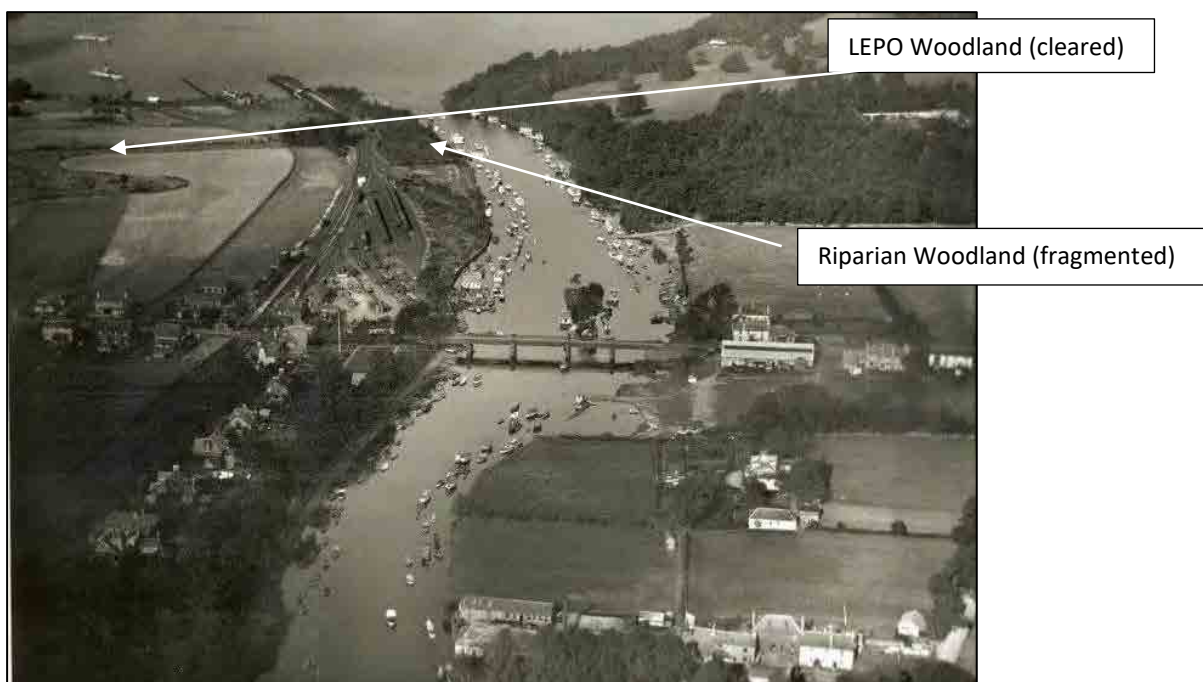


Figure 2-3: Balloch in 1930 (supplied by client)

⁴ Roy's Military Map 1747-52. Available at: <https://maps.nls.uk/geo/explore/#zoom=14&lat=55.9987&lon=-4.5923&layers=3&b=1> (Accessed 29th November 2018)

By 1949, the habitat and landscape was continuing to change. The restocked LEPO woodland is evidently developing (probably into what we see as core mature woodland today within Drumkinnon). Figure 2-4 below shows dense riparian woodland (recovering from 1930's tree removal), and the distinct linear tree belt along what is now the access route to Loch Lomond Shores, with bulbous Drumkinnon LEPO woodland projecting southwards.

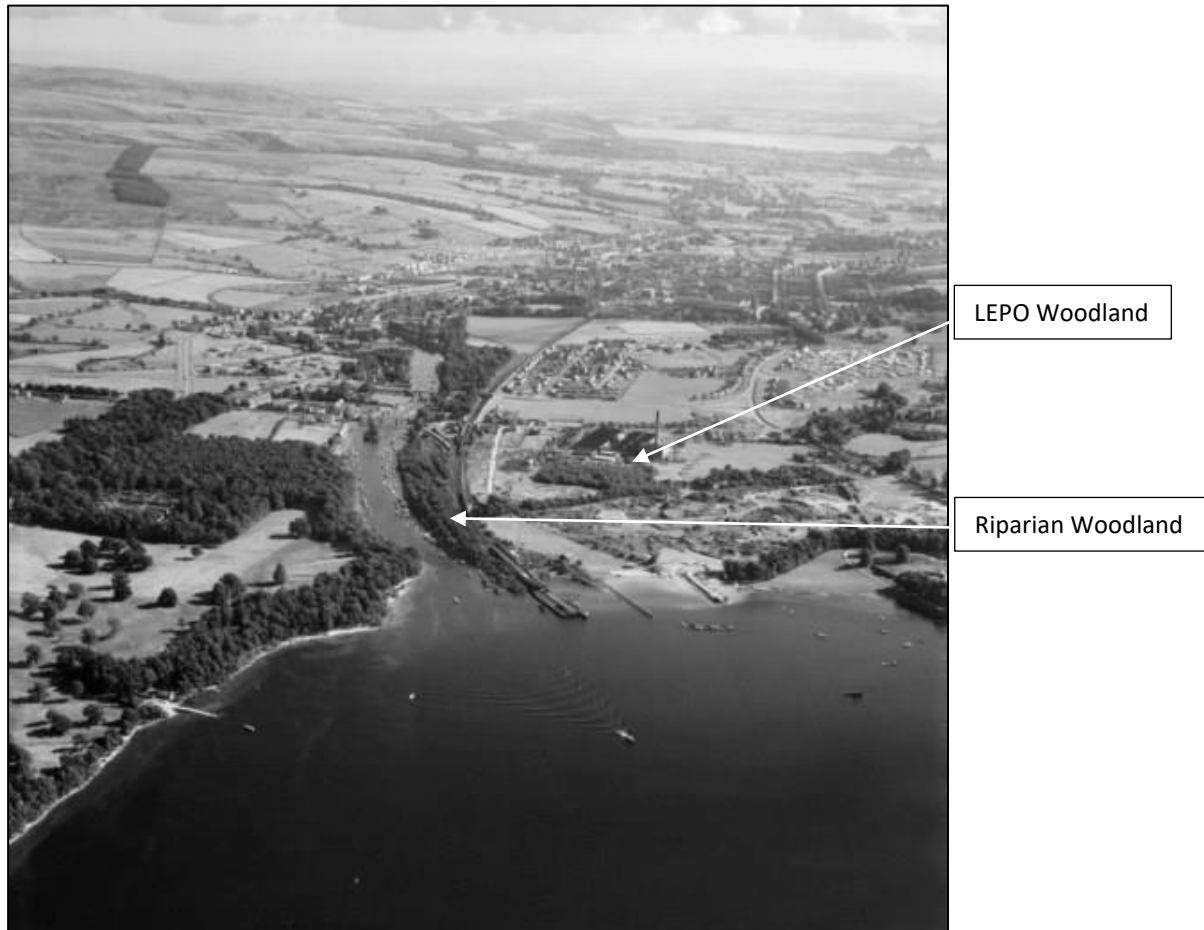


Figure 2-4: Balloch in 1949⁵

This suggests that Drumkinnon Woods and Woodbank saw an increase in planting and natural regeneration in the last 70 years. Also the riparian woodland habitat of the River Leven has seen alterations in the form of clearance, subsequent replanting and creation of amenity grasslands where railway lines used to be positioned. The 'Ineos' pipeline which dissects the woodlands appears to have left a distinct fracture in the otherwise dense Drumkinnon woods and has probably resulted in topographic change and subsequent tree planting.

The woodland habitat therefore has seen marked changes over 300 years and the result is that woodland expansion has occurred in the last 50-70 years, particularly at Drumkinnon. With minimal management the woodlands do display some semi-natural characteristics, despite their plantation origin or anthropogenic influences. Modern aerial imagery (Figure 2-5) shows the shape of the woodlands have changed significantly to encapsulate previously agricultural and industrial land. Recent tourism investment has seen an increase in amenity landscape planting around Loch Lomond Shores.

⁵ Balloch in 1949. <https://i1.wp.com/www.iconicleisuredevelopments.co.uk/wp-content/uploads/2017/07/Balloch-1949.jpeg?resize=525%2C518&ssl=1> (Accessed 29th November 2018)

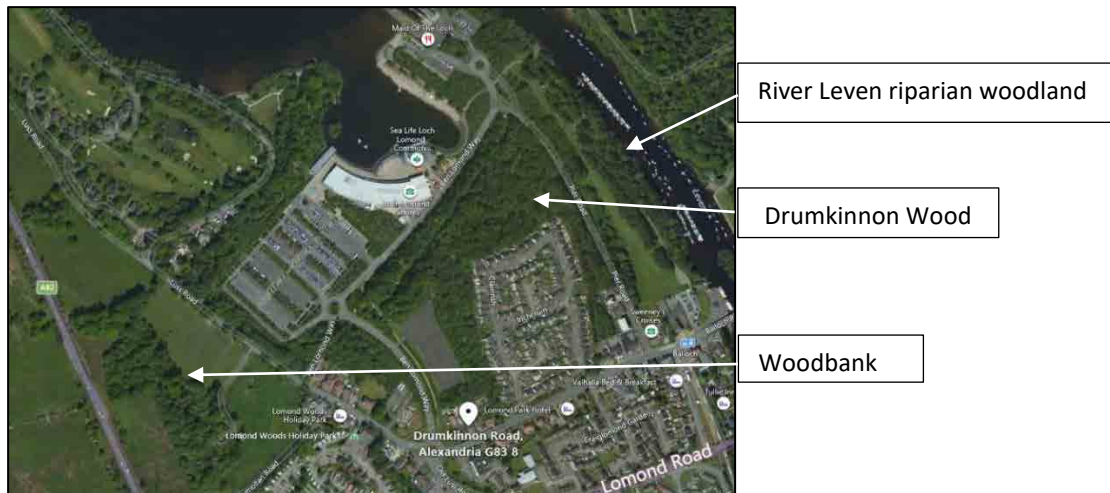


Figure 2-5: Aerial imagery of the area accessed in 2018

2.2 Woodland Habitat Composition

The woodlands present both plantation and semi-natural elements however all are deemed to have resulted from planting and subsequent natural regeneration in certain areas. No true ancient semi-natural woods are present on the site. The woodlands present a variety of 'ecological quality'⁶ and this is described further in section 2.3.

The woodlands range from c.12m above sea level (asl) at the banks of the River Leven, to 20m asl at Drumkinnon, to 43m asl at Woodbank, indicating the rising land from east to west across the site, bounded in the west by the A82. Within this topography is regular evidence of man-made undulations resulting from the historic land uses described earlier in this report. A Phase 1 Habitat Survey of the woodlands was undertaken in mid-June 2017 and is summarised below:

2.2.1 Broadleaved Semi-Natural Woodland

The following sections are split into sub-sections referring to different sub-categories of Phase 1 broadleaved semi-natural woodland. Please refer to the Broadleaf Group Map in Appendix B for locations of woodland habitat compartments summarised below.

2.2.1.1 BL1

This woodland is composed of mixed aged classes, ranging from sapling to young/mature. Species in this woodland group are high in density in terms of spatial distribution. There is evidence of regeneration occurring within the woodland as saplings of canopy species at various growth stages are present in the understory.

Dominant species include: ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*), oak (*Quercus sp.*), sycamore (*Acer pseudoplatanus*), silver birch (*Betula pendula*), and European larch (*Larix decidua*). The understory consisted of elder (*Sambucus nigra*), rowan (*Sorbus aucuparia*), buddleia (*Buddleja davidii*), saplings (sycamore, silver birch, and willow (*Salix sp.*)). Species in the ground flora consisted of bracken (*Pteridium aquilinum*), nettle (*Urtica dioica*), broad-leaved willowherb (*Epilobium montanum*), bramble (*Rubus fruticosus*), goosegrass (*Galium aparine*), pendulous sedge (*Carex pendula*) which can be a garden escapee but is also Scottish ancient woodland indicator plant, and comfrey (*Symphytum sp.*).

⁶ Consultation response from Simon Franks, LLTNP.

2.2.1.2 BL2

Although classified as LEPO according to the Ancient Woodland Inventory, this woodland has characteristics of a semi-natural woodland. The phase 1 habitat manual describes semi-natural woodland as not obviously originating from plantation. The dominant species present in the canopy are as follows: willow, ash, sycamore, silver birch, apple (*Malus sp.*), oak, and cherry (*prunus sp.*). Additional species present include laurel (*Laurus nobilis*), yew (*Taxus baccata*), Scot's pine (*Pinus sylvestris*), Douglas fir (*Pseudotsuga menziesii*), and cedar (*Cedrus sp.*). The coniferous species present are less than 10% of the overall woodland composition; therefore this woodland has been classified as broadleaved. The density of the dominant tree species is moderate as trees present are generally spaced a couple of metres apart. This is likely due to the lack of woodland regeneration. The understory is composed of shrub species including: hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*), Rhododendron (*Rhododendron ponticum*), and buddleia. There is no evidence of regeneration occurring as no saplings are present in the understory of the woodland. The north east of the woodland is dominated by introduced bamboo (*Bambusoideae sp.*). The ground flora present includes species such as: nettle, bracken, foxglove (*Digitalis purpurea*), bramble, goosegrass, perennial ryegrass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), cocksfoot grass (*Dactylus glomerata*), ivy (*Hedera sp.*) and wild garlic (*Allium ursinum*). Wild garlic is an ancient woodland indicator species. Mosses (including bog mosses (*Sphagnum sp.*)) are present in shaded areas of the woodland floor where the ground is damp. Rhododendron is present in high densities along the east of the woodland boundary and extensive bamboo is present in the northern half of this woodland.

2.2.1.3 BL4

A section of this woodland has been classified as LEPO according to The Ancient Woodland Inventory, however this woodland has characteristics of a semi-natural woodland, and the phase 1 habitat manual defines semi-natural woodland as not obviously originating from plantation. Trees present in the canopy include: oak, sycamore, cherry, Scot's pine, alder (*Alnus sp.*), beech, and ash. The woodland shows evidence of regeneration as saplings are present in the understory (including Douglas fir and sycamore). Additional understory species present include: elder, holly, broom (*Cytisus scoparius*), rowan, honeysuckle (*Lonicera sp.*), and hawthorn. The ground flora in the woodland are composed of nettle, rosebay willowherb (*Chamerion angustifolium*), ground elder (*Aegopodium podagraria*), bracken, perennial ryegrass, red campion (*Silene dioica*), goosegrass, creeping cinquefoil (*Potentilla reptans*), broadleaved dock (*Rumex obtusifolius*), broadleaved willowherb, foxglove, and common hogweed (*Heracleum sphondylium*). Ground flora species present in lower numbers were: Field forget-me-not (*Myosotis arvensis*), creeping buttercup (*Ranunculus repens*), welsh poppy (*Meconopsis cambrica*), gorse (*Ulex europaeus*), hedge woundwort (*Stachys sylvatica*), bramble, and broom.

2.2.1.4 BL6

Species present in this stand of woodland are sycamore, silver birch, Douglas fir, willow, beech, wych elm (*Ulmus glabra*), hazel (*Corylus avellana*), oak, and alder. The understory is dominated by species such as: elder, hawthorn, saplings (including ash, alder, oak, cherry, and birch), and holly. The trees are of mixed age categories ranging from sapling to mature, and show evidence of regeneration. Ground flora present in this woodland group includes: nettle, goosegrass, cocksfoot grass, bramble, creeping cinquefoil, gorse, broadleaved dock, foxglove, and comfrey. Other ground flora species present in lower densities include broadleaved willowherb, ragged robin (*Lychnis flos-cuculi*), red campion, herb robert (*Geranium robertianum*), and yellow iris (*Iris pseudacorus*).

2.2.1.5 BL9

This area of woodland shows evidence of regeneration, and consists of mixed age-class trees ranging from sapling to semi-mature. The dominant species in the canopy are: beech, hazel, ash, alder, rowan, silver birch, oak, and sycamore. The understory contains saplings (sycamore and ash), and hawthorn. Ground flora species present: common spotted orchid (*Dactylorhiza fuchsia*), soft rush (*Juncus effusus*), goosegrass, nettle, hedge woundwort, bramble, welsh poppy, comfrey, bracken, and foxglove.

2.2.2 Broadleaved Plantation Woodland

2.2.2.1 BL3

Dominant canopy species in this woodland group include oak, copper beech (*Fagus sylvatica f. purpurea*) sycamore, and sweet chestnut (*Castanea sativa*). Coniferous species are also present and include cedar, and Norway spruce (*Picea abies*), however, these only make up less than 10% of the overall canopy. The trees are of mixed age classes ranging from sapling to very mature. There is some evidence of regeneration as sycamore saplings are present in the understory. This woodland also has evidence of supplemented tree planting in the boundary adjacent to the carpark. The understory is composed of: saplings (beech, cherry, and ash), Rhododendron, holly, elder, broom and hawthorn. Ground flora species include: Creeping buttercup, field forget-me-not, broad-leaved willowherb, bracken, creeping cinquefoil, herb robert, and foxglove.

2.2.2.2 BL5

All trees in this woodland group are of a similar age class (semi-mature) and planted in obvious rows. Dominant tree species in the canopy include willow, silver birch, sycamore, copper beech, and alder. This woodland is also very densely planted. The understory consists of scrub species including elder and holly. The ground flora is absent in many areas as the woodland is dense and shaded. Less dense areas are colonised by bramble, horsetail (*Equisetum sp.*), bracken, ivy, and comfrey.

2.2.2.3 BL7 and BL8

Two distinct areas of the site in the north are covered by broadleaved plantation woodland. Dominant species include: willow, sycamore, oak, ash, alder, and silver birch. These are densely planted, and consist of semi-mature and immature trees. The ground layer is shaded due to the high density of the woodland. Some sporadically occurring species including bracken are present.

2.2.3 Invasive Species

There are a range of plant species considered to be 'Invasive' associated with the woodlands. The known locations of these species in February 2018 are presented in Appendix C. The species recorded were:

- Japanese knotweed (*Fallopia japonica*)
- Himalayan balsam (*Impatiens glandulifera*)
- *Rhododendron ponticum*
- Laurel (*Laurus nobilis*)
- Bamboo (*Bambusoideae*)

Although displaying semi natural characteristics (namely native species tree stock, natural regeneration in places and some notable flora), the woodlands also contain 'exotic' or 'domiciled' tree species such as beech (*Fagus sylvatica*), lime (*Tilia sp*), sycamore (*Acer pseudoplatanus*), Douglas fir (*Pseudotsuga menziesii*) etc. Although not invasive, these tree species could be considered to detract from the otherwise native component of the semi-natural woodland character. Alternatively, these tree species can be considered as resilience species in terms of pests, diseases and climate change challenges on woodland environments.

2.3 Tree Survey

2.3.1 Prominent Trees and Tree Groups

Early in the gathering of baseline information during February 2017, a tree survey was conducted to gather British Standard 5837:2012 data on prominent trees in the landscape as well as map the extents of the distinct woodland groups. This was conducted by a fieldworker using desk study information and appraising distinct

trees and tree groups from particular vantage points and by traversing the woodland internally. The prominent landscape trees were given an identification number and surveyed in accordance with British Standard 5837:2012.

Prominent landscape trees (those distinctly visible from outside and within the woodland, contributing as individuals to the landscape character) were found to be those along the raised banking south of Ben Lomond Way towards the Loch Lomond Shores complex; trees parallel to Luss Road within the 'Woodbank' section of the site and surrounding the derelict building in that area (many domiciled species listed in section 2.2.3). This survey provided a simple Tree Constraints Plan which is shown in Appendix D showing the location of those prominent landscape trees, and the woodland polygons as depicted on Ordnance Survey data. Individual prominent trees were categorised by the British Standard quality criteria (A, B, C) and measured for their calculated root protection area by extrapolating their Diameter at Breast Height (DBH) in relation to BS5837 calculations. The tree survey datasheet which notes tree species, size, condition and calculated root protection area is also provided in Appendix D.

In addition to the survey of prominent trees described above, various tree groups were described. The location of these tree groups (TG1 to TG12) are shown on the tree constraints plans described above. Summary of the tree group species and character along with age profile, average diameter and height estimates, and representative photographs are also provided within Appendix D.

Following the prominent tree survey and general habitat mapping, with design principles promoting woodland retention and micro-siting, the survey effort to identify every individual tree within relatively homogenous woodland groups was deemed excessive and for 'in-principle' design unnecessary. More detailed targeted survey effort would be expected at detailed design stage.

2.3.2 Identification of Glades

In order to identify areas within Drumkinnon and Woodbank which could be utilised for the installation of accommodation 'pods' it was suggested during consultation with LLTNP that tree retention would be maximised if pods were positioned within glades, particularly at Drumkinnon, and that spaces could be created at Woodbank following removal of the dense Rhododendron. Thus, a survey was conducted in September 2017 to identify the GPS locations glades of c.20m diameter. The selection of a 20m diameter glade was based on approximate dimensions of woodland accommodation design provided by the client which is a maximum of 15m x 12m. Indicative examples of glades are shown in Figure 2-6. There was no considered level of greater 'ecological sensitivity' between glade options although it is likely that floral diversity is higher in the Drumkinnon glades than Woodbank due to the proliferation of Rhododendron which would require clearing at Woodbank. In both woodlands, some glade opportunities may be expanded if removal of a small number young sycamore trees is undertaken. These would be deemed as easily replaceable trees within any woodland planting. A plan showing glade locations is presented in Appendix E. Glade locations were subsequently presented to LLTNP and utilised to progress the Design Statement⁷.

The survey carried out clearly established that glades are present, or can be created in Woodbank by removal of rhododendron which can house pods.

2.3.3 Woodland Character (Ecological Quality)

Following consultation with Simon Franks of LLTNP in August 2017 (and again in November 2017), more information on the woodland character (*ecological quality*) was requested. As a result EnviroCentre provided a digital output of distinct woodland composition changes. This has been provided in Drawing 168659-027 in

⁷ West Riverside and Woodbank Design Statement, April 2018

Appendix A and shows that there are core areas of oak (*Quercus*) with a variety of understory vegetation, largely associated with Drumkinnon. This would suggest that the replanting undertaken around 1930 was that of predominantly oak and that other species such as sycamore and birch probably colonised as successive growth following that clear-fell. This older woodland habitat has developed good ecological quality/interest with a diverse species list and vertical structure.

Moving westwards the woodland composition alters towards a younger profile of birch and sycamore and eventually the planted woodlands of the amenity grassland adjacent to the River Leven. Surrounding the Loch Lomond Shores infrastructure is also a young to semi-mature aged broadleaf plantation which has emanated from development landscaping of previous projects. Ecological quality of these planted woodlands is low (minimal ground cover/floral diversity/homogenous age profile), but likely to improve with age with some active management.

To the east is the woodland of Woodbank which is of plantation origin, somewhat dominated by species such as sycamore but have matured as a woodland to provide varying structure. Detracting from this is the proliferation of invasive *Rhododendron* and laurel and the intense grazing pressure from horses. Thus the 'ecological quality' may be focussed on particular individual trees however, this woodland presents opportunities for restorative strategies.



Figure 2-6 Example Glades

2.3.4 Bluebells

There is a reported abundance of bluebell within the woodland. Unfortunately ecological surveys of the woodlands did not coincide with the flowering period of this plant.

It has not been possible, through consultation with stakeholders, to confirm if the bluebells are British native (*Hyacinthoides non-scripta*), invasive Spanish bluebells (*Hyacinthoides hispanica*) or the result of hybridisation (*Hyacinthoides x massartiana*).

However, consultation with LLTNP indicates that bluebells are certainly present across the woodland and thus the project would require a mitigation strategy for minimising effects on all woodland ground flora, for any activity within the woodland. To inform detailed design layouts a survey of the woodlands would take place in April/May. This survey would inform glade selection and the micro-siting process.

2.4 Design Proposals

The proposed development is for a tourism and leisure-led mixed use development at West Riverside and Woodbank House (Site area 27.9 hectares (69acres)). Figure 2-7 below outlines the proposal in principle with accompanying detail.

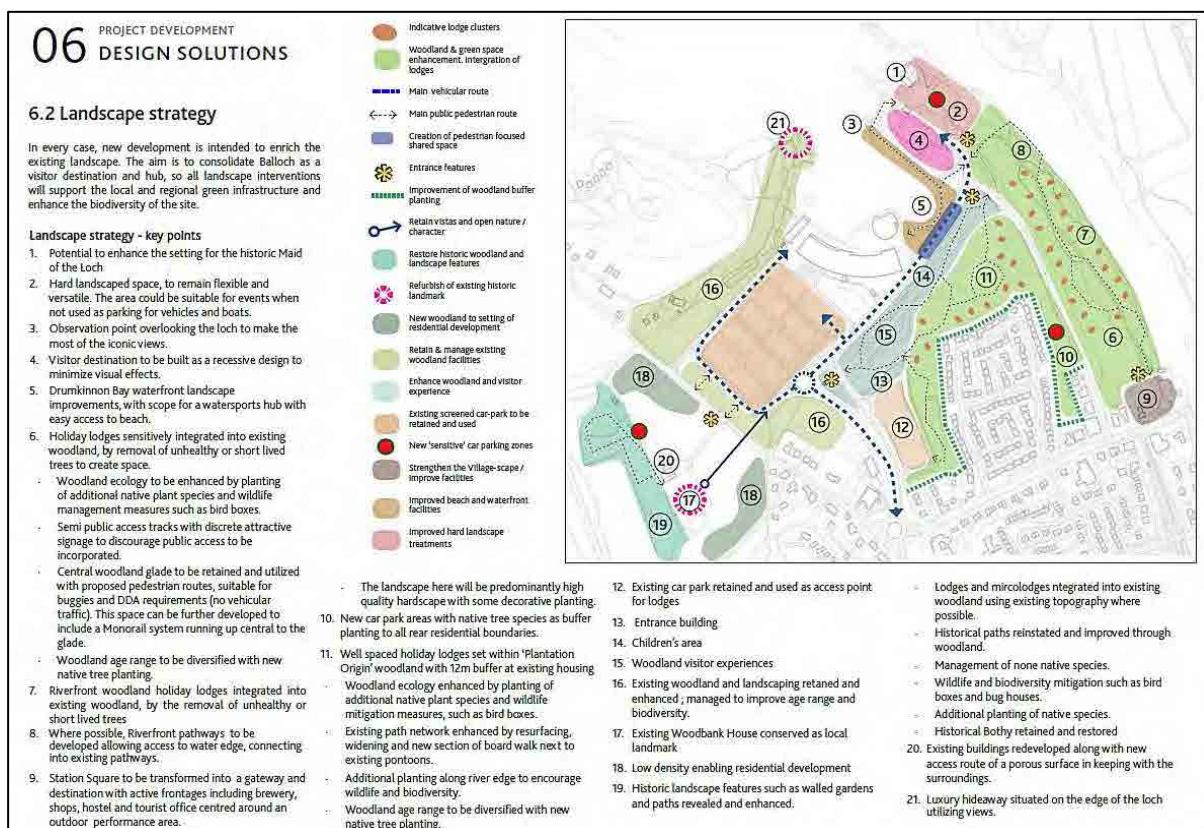


Figure 2-7: West Riverside and Woodbank design proposals

The current design detail is elaborated upon within the Design Statement⁸.

⁸ Anderson Bell Christie (April 2018), 2018_0133_PPP-Design_Statement parts 1-8 .

2.4.1 Principles of Design Relevant to Woodland

The woodland, habitat and ecological survey information and constraints were provided to the design team in order to compile the West Riverside and Woodbank Design Statement.

Throughout the process the principles of design have been to retain the woodland (no net loss of trees), contribute to its management and restoration/function and utilise the spaces provided naturally, through past human management. It would also potentially use those spaces that could be created following removal of invasive plant species, or small exotic/domiciled tree species (such as young sycamore). The existing and created spaces would afford the opportunity to locate accommodation pods of varying sizes within both Drumkinnon Wood and Woodbank.

Woodland lodges would be expected to be constructed upon raised 'stilt' type footings negating the need for traditional strip foundations, thus maximising protection of the soil environment. Access pathways would likely follow existing networks which have been constructed, but may require upgrading in places. This should be achieved using sensitive construction techniques⁹.

The protection of soils was deemed an important factor given that the woodlands (particularly Drumkinnon) are developing semi-natural character and that floral diversity, fungal interaction as well as invertebrate life which are all valuable factors. Thus a principle that woodland soils would not leave site, that disturbance of soils would be kept to a minimum and that minor micro-siting or short-distance translocation of soils containing notable flora, under supervision by an ecologist, would feature within construction method statements.

2.4.2 Mitigation

Broad mitigation likely to be required would be as follows:

- Exact lodge location and orientation based on glade choice and targeted survey of surrounding trees;
- When being scoped and designed, utility and engineering proposals should take cognisance of trees and woodlands in order to carefully microsite the routes. Excavation for any required services should be targeted to areas free from tree root constraints; areas that have already been disturbed to create access networks; should use technology such as directional drilling if necessary to avoid tree roots, preservation of soil structure/profile during backfill; and careful excavation using hand tools will be necessary in areas in order to retain structural roots and thread utility conduits beneath (roots bridging excavations). All excavations of this nature will be guided by the project arboriculturalist;
- Minimise vegetation clearing works throughout the process;
- No removal of mature trees to create access or glades will be undertaken;
- Removal of undesirable and easily replaceable species may be undertaken to create space or maximise the extent of a woodland glade. Trees removed within woodlands shall be replaced with compensatory planting within that woodland;
- All other tree removal (i.e. modification of the greenspaces adjacent to the River Leven) shall be compensated through a landscaping scheme using appropriate species;
- All tree and vegetation removal will be informed by a pre-check for features of ecological interest. Tree and vegetation removal should avoid the bird nesting season (March-August/September);
- Ground level changes should not occur within areas deemed vital for tree health. In general this will feature an avoidance of stem-root collar burial, level changes within tree root areas which would create ponding of water or root severance;

⁹ Greenfix Tree Root Protection: <http://greenfix.co.uk/product/geoweb-tree-root-protection-system/> (Accessed 29/11/2018)

- British Standard 5837:2012 specification vertical tree protection barriers will be installed to protect main stems of trees and ground protection will be installed where necessary to protect areas where working within the calculated root protection area is required;
- Construction of lodges upon small 'corner' foundations, or stilts to minimise excavation;
- Micro-siting of these foundations to avoid structural tree roots;
- Foundations could be screw-piled to further reduce impacts on soils and tree roots;
- All mechanical plant operations which pose a risk to trees will follow a bespoke method statement and/or shall be supervised by a project arboriculturalist;
- Use of load spreading engineering design for access and pedestrian footpaths;
- Retention of all soils within the woodland;
- Short-distance translocation of soil matter and flora to suitable donor sites within the woodland may be undertaken if necessary following advice from a project ecologist;
- Use of sustainable drainage for surface water retention within the woodland;
- Soil contamination will be avoided by applying pollution prevention measures detailed within a Construction Environment Management Plan;
- Use of no lighting, or low-lux level lighting directed using cowl, to minimise effects of on fauna using woodland habitats; and
- Compensatory planting, aiming for net woodland gain in the area through an approved scheme of landscaping.

Consultation with LLTNP representatives suggested that manipulation of the more recent plantings adjacent to the River Leven would be acceptable with replacement planting featuring within landscaping where necessary. Thus the distinct woodland removal is proposed to be focussed in this area. No loss of overall woodland cover is proposed at Drumkinnon Wood or Woodbank as trees or vegetation to be removed would be of invasive species or easily replaceable trees.

2.4.3 Opportunities for Future Management and Enhancement

The development also proposes the opportunity to form a pro-active management regime in order to tackle the future challenges faced by the woodland. In particular the following:

- The control and eradication of invasive plant species, some of which have direct vectors to the wider national park;
- The monitoring and possible reduction in grazing pressure from browsing mammals would promote greater natural regeneration;
- The regular audit of maturing tree stock for pests, disease and required remedial works would be undertaken;
- There is the opportunity to manage the reduction of any declining mature trees to rapidly increase veteran characteristics and prolong their persistence in the landscape;
- The opportunity to apply strategies such as bracken and bramble control should this promote floral diversity, in particular ancient woodland indicator plants;
- Dead wood material, fallen and standing, can be retained within the woodland to promote fungal and invertebrate communities over time;
- Continued supplementary planting to promote an overall woodland composition preferred by stakeholders (i.e. native semi-natural, or promoting species with more resilience to climate change);
- Promotion of habitat connectivity to green infrastructure adjacent to the development boundary; and
- There is the immediate opportunity to drastically increase the number of bat, bird and invertebrate habitat/shelter available across all woodlands through a biodiversity management plan.

2.5 Impact Assessment

It is without doubt that the woodland habitats in this area have undergone large changes over at least 300 years, with the most drastic perhaps of recent industrial times. That the development of Loch Lomond Shores appears to have invested in tree planting, woodland access provisions and some management of green spaces.

The design statement has been produced with cognisance of the woodland habitats on site and seeks to develop the opportunity of a multi-purpose woodland environment to provide recreation, education and habitat management. Low impact construction techniques have been included and depicted within the design statement document.

Woodland removal to facilitate development appears will be of the planted habitats at the site of the old railway, now mainly grassland, adjacent to the River Leven. Compensatory planting is anticipated within landscape schemes to replace the initial loss of trees in this area.

Tree removal may occur at Location 9 (presented within page 65 of the design statement) where it is proposed to develop the site entrance at the south aspect of Drumkinnon woods. This infrastructure is likely to be positioned on the woodland edge and would necessitate minimal tree loss and British Standard tree protection. Tree loss in this area should be easily replaceable directly adjacent to the entrance infrastructure.

Other development within the woodlands seeks to follow the design principles outlined in section 2.4 in order to achieve the proposed development with no net loss of woodland cover from Drumkinnon or Woodbank, and where individual tree removal (such as young sycamore) is required, replanting within and adjacent to the woodlands is feasible and will be undertaken.

The impacts of the development on woodlands is summarised in the following regards:

1. The manipulation of the River Leven riparian woodland to facilitate development may result in habitat fragmentation and restructuring, and would require to be compensated within landscaping and tree planting plans to the satisfaction of the planning authority;
2. That the woodlands of Drumkinnon and Woodbank have expanded well over the recent decades and offer existing and future multi-purpose opportunities alongside required proactive management;
3. Design will follow the outlined principles, through which impacts to Drumkinnon and Woodbank are predicted to be low in regards of tree loss and soil/flora disruption and that opportunities for woodland enhancement and eradication of invasive species are high; and
4. Targeted detailed tree survey of particular areas will aid in developing detailed designs and avoidance of negative impacts through micro-siting and use of low impact construction/engineering techniques within root protection areas.

2.5.1 Future Survey Requirements

This summary and outline impact assessment relates only to principles and outline design at this stage, thus the impacts can only be described in relation to woodlands in general, rather than any particular tree, or trees. Nonetheless, a robust set of mitigating principles has been set in order to guide the detailed design process and ultimately the construction process.

Woodland are dynamic and the baseline information can change over time. Thus regular updates of data, or addition of targeted survey data must be undertaken in order to progress elements of the design process.

Whilst a good spread of woodland flora was identified within the Phase 1 Habitat Survey, field survey visits throughout the flowering period (including Bluebells) will be required to inform detailed layouts. In evolving the detailed designs further more targeted tree surveys should be undertaken.

3 CONCLUSION

Following an iterative process the design statement has embraced the woodland habitats of the site as an asset within the developer's vision for the site as a recreational woodland offering opportunity for an increase in leisure and tourism provision in the area.

The retention and management of woodlands therefore is intrinsic to the development and its design. For the purposes of planning permission in principle, the mitigation and enhancement outlined in this report can become embedded and further developed as the planning process moves towards detailed design and engineering. It is concluded that through careful design and construction, the development as proposed in the design statement can be completed with due attention to the site's treed assets. Additionally the longevity of quality woodland and trees, ecological function for a range of species, monitoring and continued habitat management would be achievable.

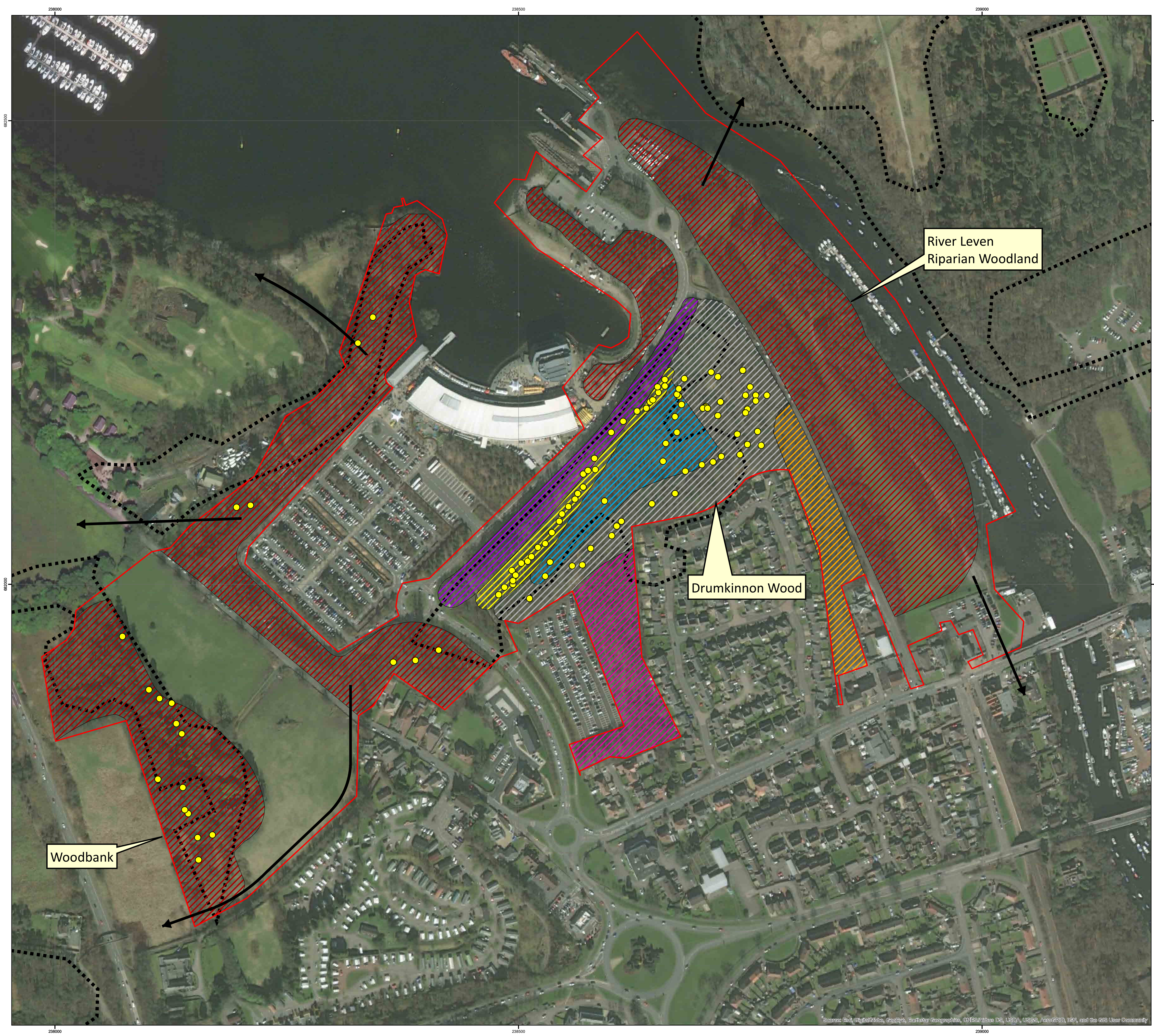
The only area of woodland that is likely to see noticeable change is the woodland along the River Leven (riparian woodland). There will however be no net loss of trees along the River Leven corridor, or anywhere within the development area for that matter. The areas for retention therefore are the areas within Drumkinnon Wood and Woodbank which fall outwith the areas with existing glades, or where glades can be created through removal of trees such as young sycamore, or invasive species (Rhododendron in Woodbank)

In the absence of a detailed design it is simply not possible to detail where the compensatory planting within the River Leven corridor would take place or indeed where native species would be planted to replace the felling of young sycamore.

Of importance also are the practical works required within the woodlands to eradicate and control invasive plant species, which will threaten the semi-natural characteristics (natural tree regeneration), and in particular the ground level flora such as bluebells and ancient woodland indicator plants. These would be ultimately facilitated through the development process and likely to continue in perpetuity of the site's management.

APPENDICES

A WOODLAND SPECIES COMPOSITION



Legend

- Site Boundary
- Approximate Glade Location
- Birch, Willow, Cherry, Sycamore Woodland
- Core Sessile Oak Habitat with Bramble
- Oak, Birch, Sycamore Woodland
- Oak, Sycamore, Bramble, Bracken
- Pipeline Clearing, Dense Bramble
- Planted/ Exotic/ Domiciled Tree Species
- Planted or Highly Modified Woodland

ANTIQUITY

- Long-Established (of plantation origin)
- Wider Woodland Connectivity

Revisions

A: Minor changes to symbology only

Do not scale this map

Client

TSL Contractors Limited

Project

West Riverside Balloch

Title

Woodland Species Composition

Status	Final	
Drawing No.	168659-027	Revision A

Scale	A1	Date
1:2,000		07 Dec 2018
Drawn	Checked	Approved
GV/FR	GV	IB

Craighall Business Park, Eagle Street, Glasgow, G4 9XA
Tel: 0141 341 5040
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B BROADLEAF GROUP MAP



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Site Boundary
- Broadleaf 1
- Broadleaf 2
- Broadleaf 3
- Broadleaf 4
- Broadleaf 5
- Broadleaf 6
- Broadleaf 7
- Broadleaf 8
- Broadleaf 9

Revisions
A: Amended boundaries for site and Broadleaf 4

Do not scale this map

Client
TSL Contractors Limited

Project
West Riverside Balloch

Title
Broadleaf Group Map

Status
FINAL

Drawing No. 168659-010	Revision A
---------------------------	---------------

Scale 1:4,000	A3	Date 03 Dec 2018
Drawn GV/FR	Checked MN	Approved IB









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C INVASIVE SPECIES PLAN



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

-  Site Boundary
- Invasive Non-Native Species**
-  Bamboo
-  Himalayan Balsam
-  Japanese Knotweed
-  Laurel
-  Rhododendron

Do not scale this map

Client
TSL Contractors Limited

Project
West Riverside Balloch

Title
Invasive Non-Native Species Plan

Status
FINAL

Drawing No. 168659-028	Revision
---------------------------	----------

Scale 1:4,000	A3	Date 2 Feb 2018
Drawn JEP	Checked GV	Approved IB



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D TREE CONSTRAINTS PLANS



Legend

- Site Boundary
- Tree Location
- Root Protection Area
- Tree Group (TG1 - TG12)

Tree Category

- A
- B

Do not scale this map

Client
Peter Brett Associates

Project
West Riverside, Balloch

Title
Tree Constraints Plan
Map 1 of 2

Status
Final

Drawing No. 168659-004a	Revision
-----------------------------------	-----------------

Scale 1:2,000	A3	Date 13 Feb 2016
Drawn JI	Checked DB	Approved IB

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- Legend
- Site Boundary
 - Tree Location
 - Root Protection Area
 - Tree Group (TG1 - TG12)
- Tree Category
- A
 - B



Do not scale this map

Client
Peter Brett Associates

Project
West Riverside, Balloch

Title
Tree Constraints Plan
Map 2 of 2

Status
Final

Drawing No. 168659-004b	Revision
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Scale 1:2,500	A3	Date 13 Feb 2016
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Drawn JI	Checked DB	Approved IB
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West Riverside and Woodbank Tree Schedule



No.	TreeID	Species	Height (m)	DBH (mm)	Branch Spread (m)				Age	Condition	Comment	British Standard Category	RPA Radius (m)	Crown Average (m)	x	y
					N	E	S	W								
1	5213	BEECH	15	1170	7	7	5	6	M	G		B	14.04	6.25	238456.5	682008.3
2	5214	SYCAMORE	14	810	5	4	4	6	M	F	CO DOM STEMS FROM GROUND LEVEL	B	9.72	4.75	238458.2	682004.1
3	482	BEECH	15	1200	6	6	7	7	M	F	IMBALANCED CROWN TO W	B	14.40	6.5	238464.9	682015.6
4	483	BEECH	16	960	5	6	7	5	M	F		B	11.52	5.75	238478.6	682015.2
5	3461	BEECH	17	1180	7	8	9	5	M	P	LOST LIMB S. ROT/FUNGUS	B3	14.16	7.25	238488.7	682029.6
6	484	BEECH	15	970	5	5	5	7	SM	F	CO/DOM STEMS AT 1M	B	11.64	5.5	238480.5	682026.3
7	485	SYCAMORE	16	1160	8	6	4	7	M	G	3 MAIN STEMS FROM 1M	B	13.92	6.25	238485.5	682036.6
8	486	SYCAMORE	16	700	7	7	5	6	M	F		B	8.40	6.25	238515.0	682065.4
9	487	BEECH	16	970	7	9	8	7	M	F	SOME TORN OUT LIMBS	B	11.64	7.75	238575.5	682125.4
10	488	BEECH	17	950	8	7	8	7	M	F	DECAY/BASE STEM.INCLUDED BARK	B	11.40	7.5	238585.9	682138.2
11	489	D.FIR	18	800	5	5	6	6	SM	G		B	9.60	5.5	238597.6	682152.5
12	490	SYCAMORE	14	750	7	6	4	6	SM	F	310.470.320.380. ON SLOPE	B	9.00	5.75	238598.2	682161.1
13	3506	D.FIR	15	690	5	3	3	4	M	G		B	8.28	3.75	238616.2	682180.9
14	5165	BEECH	16	1120	7	9	9	7	M	G	SOME LOST LIMBS W DECAY	B	13.44	8	238619.1	682182.7
15	5163	D.FIR	16	690	4	4	3	3	M	G		B	8.28	3.5	238622.9	682192.9
16	491	SYCAMORE	14	780	5	6	6	5	SM	F	PRUNING. CO/DOM STEMS AT 1.5M	B	9.36	5.5	238627.5	682197.9
17	5160	D.FIR	15	660	4	3	4	3	M	G		B	7.92	3.5	238630.2	682203.3
18	5155	D.FIR	16	670	5	5	4	3	M	G		B	8.04	4.25	238631.3	682206.4
19	492	BEECH	13	1220	6	6	8	7	M	P	LOST LIMB W DEADWOOD FUNGUS	B	14.64	6.75	238642.4	682218.7
20	5149	D.FIR	16	740	5	6	4	5	M	G		B	8.88	5	238650.3	682229.3
21	5150	D.FIR	15	630	4	5	4	3	M	F	SMALLER STEM HAS RIPPED OUT	B	7.56	4	238650.8	682223.8
22	5146	LIME	11	700	5	5	5	4	SM	F	CO/DOM STEMS 1M.460/530	B	8.40	4.75	238652.7	682233.5
23	5145	S.PINE	17	760	4	4	4	4	M	G	LEAN TO S	B	9.12	4	238658.7	682238.6
24	5144	N.SPRUCE	16	730	4	4	5	4	M	F	SOME STORM DAMAGE	B	8.76	4.25	238661.2	682241.1
25	493	D.FIR	18	780	5	4	5	4	M	G	SOME LOST LIMBS	B	9.36	4.5	238665.5	682251.6
26	4897	SYCAMORE	15	540	6	6	6	5	SM	F		B	6.48	5.75	238596.8	681824.0
27	4896	OAK	15	460	5	5	7	6	SM	F		B	5.52	5.75	238595.2	681823.4
28	4889	OAK	13	610	5	5	6	6	SM	F		B	7.32	5.5	238573.1	681809.1
29	494	CEDAR LEB	20	1140	5	7	7	6	M	G		A	13.68	6.25	238206.9	681791.1
30	495	LIME	22	700	4	4	4	4	M	G	EST.DBH. TAG ON EPI GROWTH	B	8.40	4	238169.7	681767.4
31	496	YEW	8	380	4	4	4	4	SM	F	SUPRESED/LAUREL	B	4.56	4	238180.3	681768.9
32	497	OAK	22	1270	8	8	12	12	M	G		A	15.24	10	238183.6	681806.0
33	498	YEW	12	850	6	6	6	6	SM	F	BASAL FIRE DAMAGE	A	10.20	6	238179.3	681819.2
34	499	OAK	18	940	4	5	5	5	M	G		B	11.28	4.75	238182.2	681829.5
35	500	OAK	23	1100	5	8	8	6	M	F	TORN OUT LIMB.STORM DAM	B	13.20	6.75	238183.4	681848.9
36	501	N.SPRUCE	25	1000	4	4	4	4	M	G	COMP SOIL.NAILS IN STEM	A	12.00	4	238075.2	681944.1
37	502	LIME	20	1060	5	8	5	7	M	G		A	12.72	6.25	238117.5	682022.5
38	503	LIME	19	1210	5	8	5	7	M	G		A	14.52	6.25	238131.0	682008.8
39	504	SYCAMORE	11	410	4	4	3	4	SM	G		B	4.92	3.75	238149.7	681997.5
40	505	LIME	19	1090	5	7	5	7	M	G		A	13.08	6	238153.1	681995.3
41	506	LIME	15	1070	11	7	2	6	M	P	LOST MAIN LEADER. REDUCTION	B	12.84	6.5	238169.7	681979.1
42	507	LIME	19	980	6	7	6	6	M	G		A	11.76	6.25	238203.7	681952.6
43	508	LIME	19	1050	7	7	5	7	M	G		A	12.60	6.5	238223.1	681935.5
44	509	LIME	19	1120	7	7	6	7	M	G	EV. OF PRUNING	A	13.44	6.75	238269.5	681896.3
45	510	LIME	14	1060	7	7	7	7	M	G		B	12.72	7	238294.0	681876.1



Key
TREE ID Refer to Drawings 168659-004a and 004b
DBH Diameter at Breast Height
N, E, S, W Canopy Spread (North, East, South, West)
Age M (Mature), SM (Semi Mature)
Condition G (Good) F (Fair) P (Poor)
Category Refer to Tree Quality Assessment Criteria
RPA Root protection area



Category and colour on TCP	Criteria		
U - Removal Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	<ul style="list-style-type: none"> Trees that have a serious, irremediable structural defect such that early loss is expected through collapse, or become unviable after removal of other category U trees. Trees that are dead or are showing signs of significant, immediate or irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other nearby trees or trees of very low quality, suppressing adjacent trees of better quality. 		
A - Retain Trees of high quality with an estimated remaining life expectancy of at least 40 years.	<u>Mainly arboricultural value</u>	<u>Mainly landscape value</u>	<u>Mainly cultural values including conservation</u>
	1 Trees that are particularly good examples of their species, especially if rare or unusual. Essential components of groups or formal or semi-formal arboricultural features (i.e. dominant/principal trees in an avenue).	2 Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. Veteran trees or wood-pasture).
B - Retain Those of moderate quality with an estimated remaining life expectancy of at least 20 years.	1 Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. remediable defects or poor past management/storm damage) such that they are unlikely to be suitable for retention beyond 40 years.	2 Trees present in numbers usually as groups or woodlands, such that they form distinct landscape features thereby attracting a higher collective rating than they might as individuals, or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	3 Trees with measurable conservation or cultural value.
C - Retain Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.	1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	2 Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value and/or trees offering low or only temporary/transient landscape benefits.	3 Trees with very limited conservation or cultural value.



Tree Group Descriptions.


Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
1	An area of semi-natural woodland dominated by alder, sycamore and ash. The shrub layer consists of holly and regenerating alder and the woodland group is surrounded by a mature hawthorn hedge.	SM	200	8	0.16	
2	Small landscaped area planted with birch. There is no shrub layer and the ground flora is dominated by bramble and ivy.	SM	180	9	0.02	



Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
3	An area of plantation woodland dominated by oak, birch, alder, ash and Scot's pine. There is no apparent regeneration but occasional broom shrubs are present. The ground layer is limited due to shading. The area is enclosed with a hawthorn and beech hedgerow.	Y/SM	150	7	0.51	
4	Several small clusters of birch and alder located along the bank of Loch Lomond that have been grouped together. Many of the trees are multi-stemmed and show signs of damage to their roosts from mowing.	SM	200	8	0.05	

Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
5	Woodland group with the same species composition and structure as Tree Group 3. Again, the group is enclosed by a hawthorn and beech hedgerow.	Y/SM	150	7	0.25	
6	Semi-natural woodland with species present including oak, alder, ash, birch, sycamore, willow, holly and beech. The shrub layer consists of regenerating alder and holly in addition to bramble and bracken. The ground layer includes ivy, moss species and woodrush.	SM	450	9	0.25	

Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
7	Semi-natural woodland dominated by sycamore and alder. Other species present include holly, willow, beech, hawthorn, elm and hazel. Regeneration is occurring with alder, birch and ash present in the shrub layer along with broom and bramble. The ground layer includes snow drops and moss species but is limited due to shading. Some evidence of woodland management is present as it appears the borders of the tree group are strimmed back.	SM	350	12	2.51	
8	A small area of birch, sycamore and willow dominated woodland enclosed by a dog rose hedge. The shrub layer consists of willow, bramble and broom. There is no discernible ground layer.	SM	270	12	0.07	

Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
9	Belt of semi-natural woodland with species present including sycamore, birch, oak, hawthorn, hazel, beech and alder. There is a large amount of windfall present which is now regenerating. The shrub layer is dominated by hazel, alder and holly.	SM	300	12	1.42	
10	A small area of woodland consisting of alder, birch and beech with an understorey of bramble and hawthorn. There is no discernible ground layer.	SM	170	10	0.07	

Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
11	<p>Ancient Woodland (Long-established of plantation origin).</p> <p>Species present in this mature semi-natural woodland include beech, sycamore, oak, birch, ash, hawthorn, Douglas fir, Scot's pine and holly. Several mature beech, sycamore and Douglas fir trees are present along an embankment in the north western extent of the group. Fallen and standing deadwood is present throughout this woodland with abundant associated fungal bodies. Regeneration is present from ash, oak, hawthorn and beech. Bramble and bracken are present along with areas of sphagnum moss on the ground layer.</p>	M	300	12	7.37	

Tree Group Number	Species composition and character	Age Profile	Average DBH	Average Height	Area (Ha)	Photograph/s
12	<p>Ancient Woodland (Long-established of plantation origin).</p> <p>This mature woodland is dominated by oak, birch, and laurel. Other species present include yew, Scot's pine, cedar, holly and sycamore. The understory is dominated by buddleia and rhododendron with bracken and bramble also present. The ground layer is limited due to shading from the canopy however lichens, mosses, ferns and fungi are present on the woodland floor and on the trees.</p>	M	300	13	2.93	 

The screenshot below shows areas of Ancient Woodland (Long-established of plantation origin) present within the site:



E GLADE LOCATION PLAN



- Legend
- Approximate Glade Location

Revisions
A: Amended site boundary

Do not scale this map

Client
TSL Contractors Limited

Project
West Riverside Balloch

Title
Glade Location Plan

Status
FINAL

Drawing No. 168659-018	Revision A
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Scale 1:1,250	A1	Date 03 Dec 2018
Drawn GV/FR	Checked GV	Approved IB



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