

**Land at Brotherton Farm,  
Livingston**



# **Design Statement, Part 2 of 2**

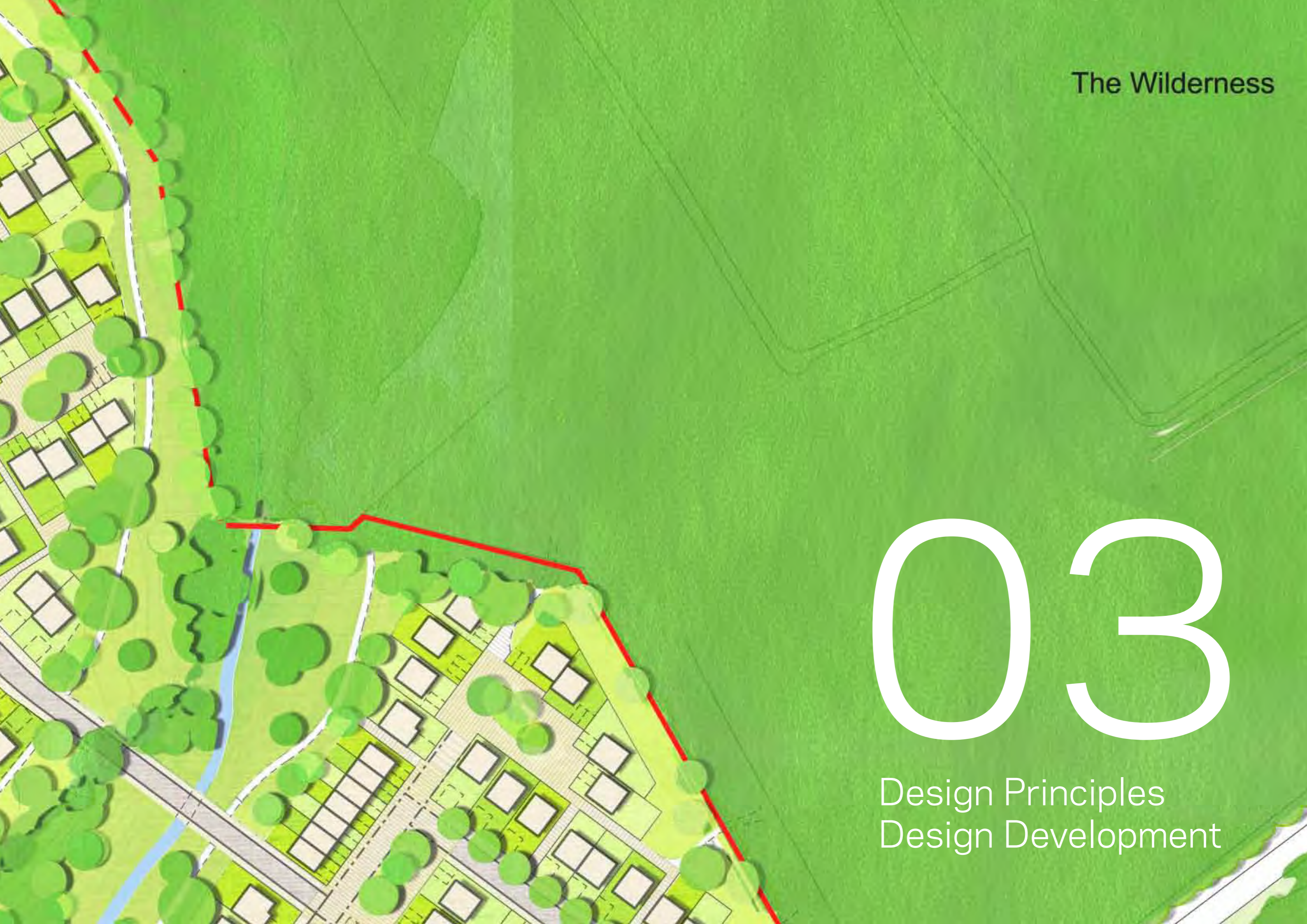
## **7N**





# 03

Design Principles  
Design Development



# Design Principles

## Brief and Approach

The brief for the site is to establish a sensitively designed development that is embedded in its landscape setting on the edge of Livingston which will provide an attractive place to live that meets housing needs in the area.

This site has been selected for its potential to deliver the qualities of a successful place identified in SPP paragraphs 41-46.











- o Distinctive - By working with the existing landscape topography and features to create a place with a distinct identity.
- o Safe and Pleasant - By offering the opportunity to create a pedestrian priority residential neighbourhood with well defined, active spaces.
- o Welcoming - By designing the development to sit comfortably within the landscape context to accentuate the legibility and identity of the place.
- o Adaptable - By designing a masterplan that is a flexible, landscape driven, framework for development.
- o Resource Efficient - By developing a low rise but high density masterplan (in the local context), which responds to local housing needs in a manner that works with the natural environment and utilises durable materials for building and landscaping.
- o Easy to Move Around and Beyond - By creating a pedestrian/cycle dominated neighbourhood that prioritises their needs over motor vehicles on a site which is sufficiently well connected by public transport and footpaths.

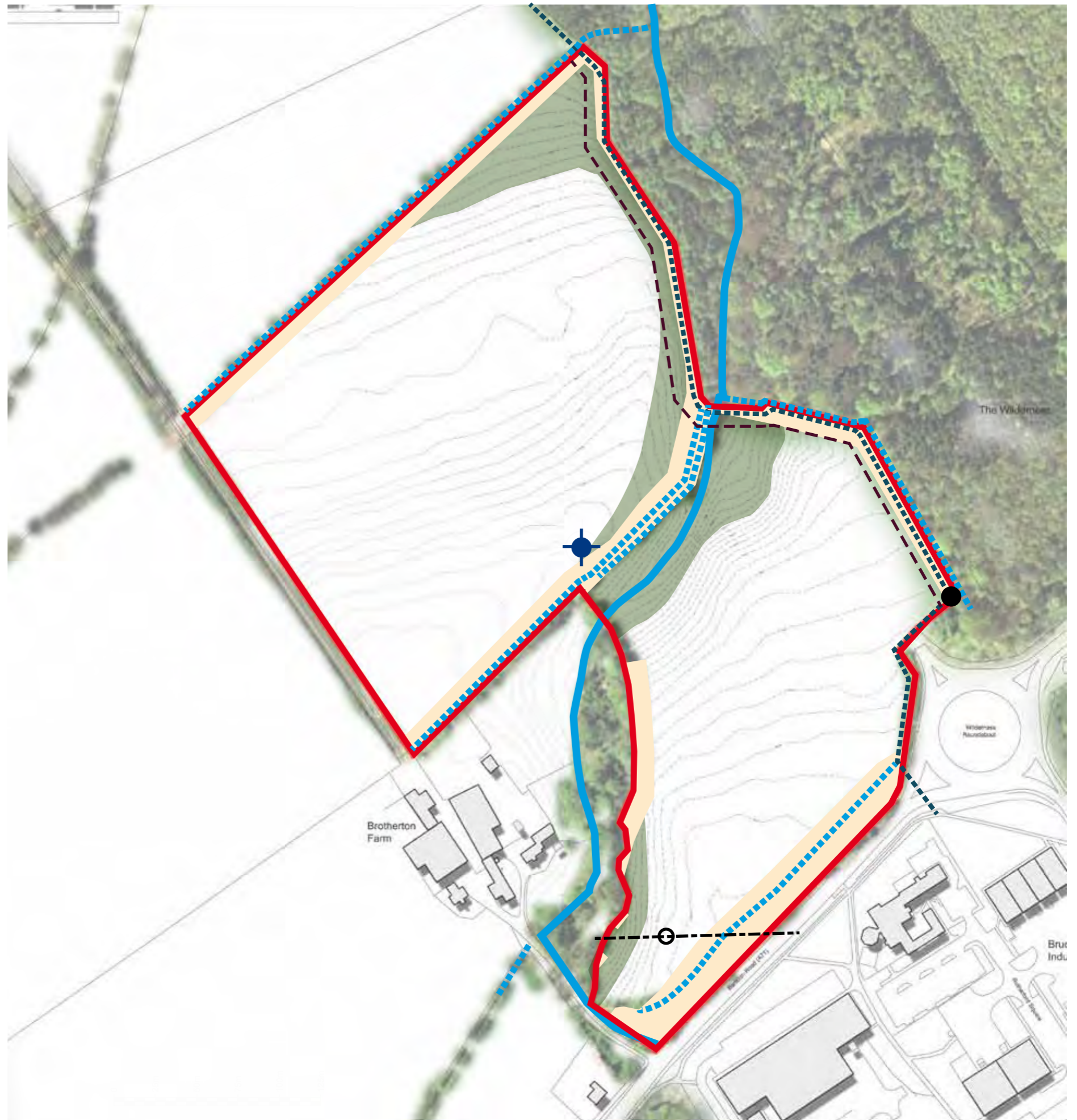


Image of a typical street in the proposed development

# Design Principles

## Key Development Constraints

-  Site boundary
-  Construction exclusion zone for the protection of existing trees
-  Construction exclusion zone for landscape and topography
-  10m setback from Wilderness
-  Medium Pressure gas pipe
-  Drain
-  Ditch
-  Power line and mast
-  Communication mast
-  Mine entry



# Masterplan Development

First concepts and proposals



## South-west facing gardens:

- o Majority of gardens facing south-west.
- o Possibility to design houses to pasiv house standards.
- o Perimeter and ridgeline landscape buffer zones



## Landscape swatches:

- o Majority of gardens facing south.
- o Possibility to design houses to pasiv house standards.
- o Perimeter and ridgeline landscape buffer zones
- o Landscape swatches for greening, screening and enhancement of landscape character



## Courtyards:

- o Majority of gardens facing south-west or south.
- o Possibility to design houses to pasiv house standards.
- o Perimeter and ridgeline landscape buffer zones

# Masterplan Development

## Design Development



### Responding to landscape and topography

- o Site boundary is extended to provide substantial landscape screening and public amenity
- o Landscape fingers permeate the development in the form of courtyards and amenity space and strengthen in line with existing landscape patterns
- o Development steps back from edges to give buffer to landscape features



### Design development / response to consultation feedback

- o Houses pulled back from the edge of the Wilderness
- o Houses pulled back from northern boundary to accommodate sloping topography
- o Houses pulled back from southern western tip of site.
- o Area of amenity play space increased

# Design Principles

## Key Development Parameters

### Legend

-  Land Ownership boundary
-  Proposed Site boundary

### West Lothian Local Plan

-  Livingston Countryside Belt
-  Employment site allocation
-  Housing site allocation
-  Area of special landscape control
-  Proposed recreational route










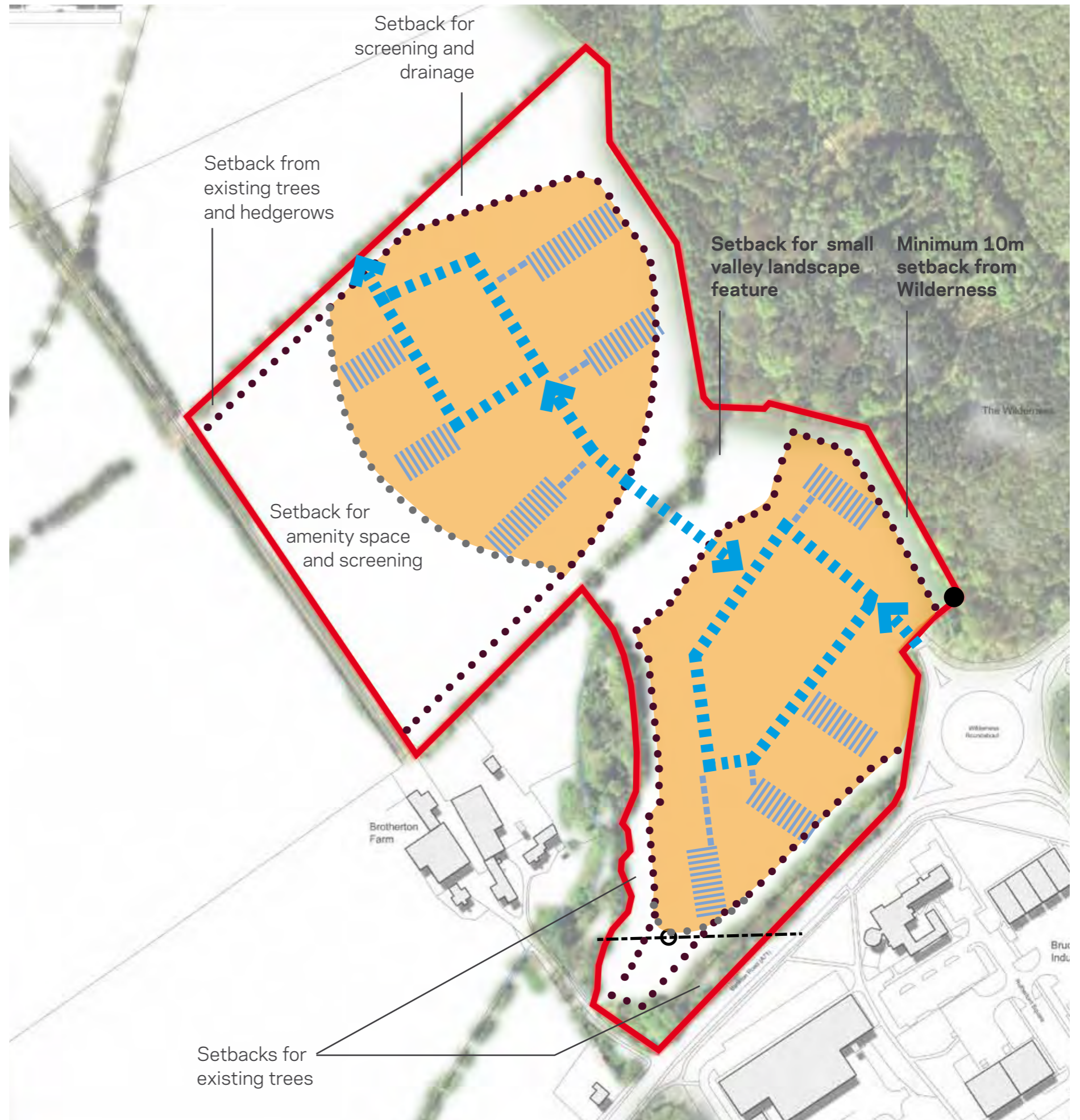
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# Design Principles

## Framework for Development

-  Site boundary
-  Development zone
-  Setback for trees and landscape features
-  Setback for amenity and screening
-  Primary route
-  Access to courtyard
-  Courtyard







The Wilderness

# 04

Design Proposal

# Illustrative Masterplan

## Summary of Development

The proposals presented here summarise the masterplan design solution that has been developed from the analysis of the site and its context, the key principles that have been established, and the outcome of consultation process.

This masterplan is principally landscape led, concentrating on the capacity of the landscape setting for new housing development. The masterplan approach establishes a pattern of development which reinforces the existing landscape structure.

The masterplan cultivates the active use of the street spaces by clearly orientating the dwelling frontages towards them, giving pedestrians priority in the shared surface spaces and linking into the wider landscape. The ambience of the neighbourhood will be fundamentally green in character, an extension of the landscape.

### The approach to the site seeks to:

- o Bring the landscape into the centre of the development through courtyards and pedestrian links
- o Enhance the character of the setting with new tree planting
- o Establish wildlife corridors through the site
- o Nestle the development into areas where it has little impact on its wider setting
- o Connect the development to its wider context through a network of footpaths
- o Use principles from Designing Streets to prioritise pedestrians and enhance the quality of the public realm

### Site Area

12.4 Hectares

### Net Developable Area

7.7 Hectares (19 acres)

### Plots/Dwellings

182 inc. 28 no. Affordable (=15%)

### Density (site)

23.6 Dwellings/Ha (Developable area)

14.7 Dwellings/Ha (Site area)

### Green Amenity Space

5.46 Hectares (... acres)

### Dwellings:

154 plots of private residential 2-storey homes comprising:

- o 18 no. plots approx 220m<sup>2</sup> with circa 104m<sup>2</sup> (1119 sq.ft.) 3-bed semi-detached homes
- o 45 no. plots approx 230m<sup>2</sup> with circa 120m<sup>2</sup> (1291 sq.ft.) 3-bed detached homes
- o 76 no. plots 250-280m<sup>2</sup> with circa 140m<sup>2</sup> (1506 sq.ft.) 4-bed detached homes
- o 15 no. plots 275-325m<sup>2</sup> with circa 158m<sup>2</sup> (1700 sq.ft.) 4-5 bed detached homes

28 plots of 2-storey affordable homes comprising:

- o 14 no. plots 124m<sup>2</sup> with circa 90m<sup>2</sup> (969sq.ft.) 2-bed terraced homes
- o 10 no. plots 150m<sup>2</sup> with circa 94m<sup>2</sup> (1011 sq.ft.) 3-bed terraced homes
- o 4 no. plots 210m<sup>2</sup> with circa 98m<sup>2</sup> (1055 sq.ft.) 3-bed semi-detached homes

# Illustrative Masterplan

Masterplan Proposal

Alba  
Business  
Campus

Development is located in areas where it will have the least visual impact on its surroundings.

Network of footpaths connects the development to its wider context.

New tree planting to reinforce existing tree belts and enhance character.

Landscape buffer to A71

Courtyards bring landscape into the centre of the development

Pedestrian priority streets and spaces

Wildlife corridors established through the site.

1m high earth bund with 1m high acoustic fence above.

Allocated for Residential Development



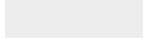
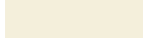




# Livingston landscape pattern

Before development

When viewed in isolation it may appear that the site is isolated from the rest of the Livingston settlement by the Wilderness. When viewed in its wider context however, the landscape and settlement pattern reveals how landscape features have been incorporated through time. The pattern reveals an almost continuous network of green spaces, buffer planting, open and amenity spaces.

Developments on the edges of this green network have mostly established landscape buffers and allowed the landscape to permeate the development thus extending the network of green spaces and pedestrian paths, mitigating visual impact and building on the green character of the Livingston settlement edge.

-  Site
-  Livingston settlement boundary
-  Developed Land
-  Undeveloped Land
-  Land Allocated for Redevelopment
-  Trees




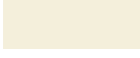




# Livingston landscape pattern

After development

When viewed in its wider context the site and the proposed development are very much in keeping with the established landscape and settlement pattern which has through time incorporated many key landscape features and amenity spaces.

The proposal itself establishes strong landscape buffers and allows the landscape to permeate the development in keeping with the established principles. The development thereby strengthens and extends the existing character, and network of green spaces and pedestrian paths.

-  Site
-  Livingston settlement boundary
-  Developed Land
-  Undeveloped Land
-  Land Allocated for Redevelopment
-  Trees



# Landscape and Public Realm

## Designing Streets and Placemaking

The approach adopted in this proposal is that the residential courtyards and secondary streets are designed as shared surface Home Zones in accordance with Designing Streets principles. These follow a distinct hierarchy of primary and secondary streets to facilitate vehicle access with a clear priority for pedestrians and cyclists.

- o The primary access road is a vehicle priority street with pavements for pedestrians.
- o The access to the courtyard spaces is via 6-8m shared surfaces.
- o The courtyards themselves are semi-private Home Zones with pedestrian priority and vehicular circulation around a central landscape feature.

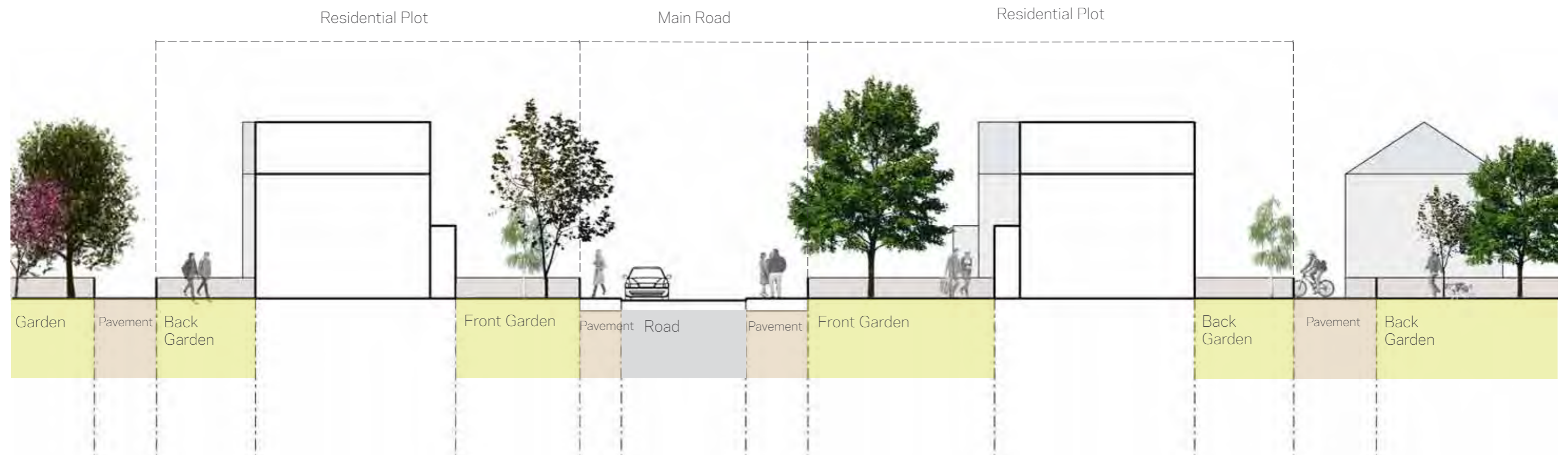
This approach is in accordance with the 'Easy to Move Around and Beyond' principles which is one of the six qualities of a successful place in SPP paragraph 46.



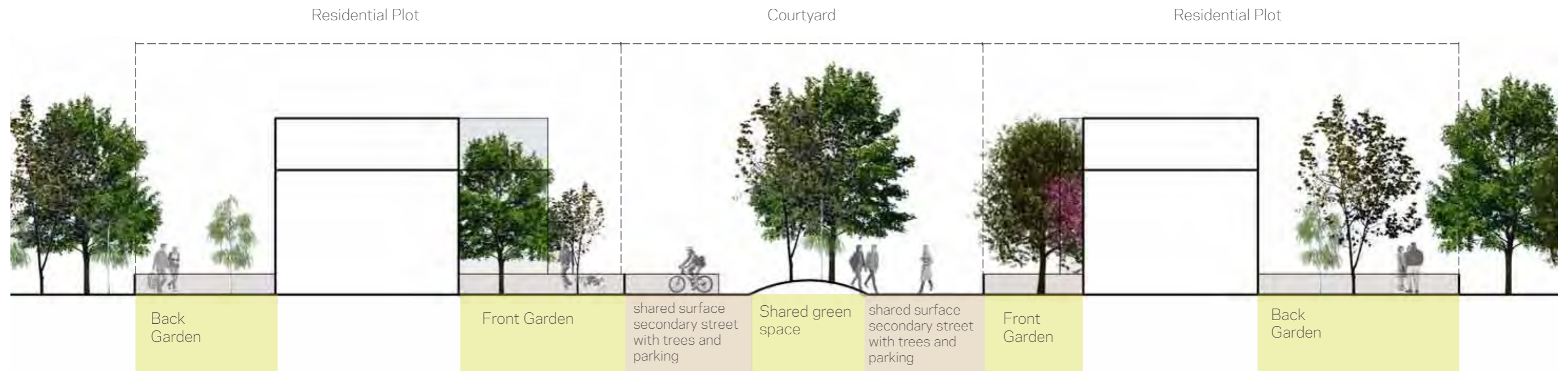


# Landscape and Public Realm

## Typical Sections



Main street



Courtyard

# Illustrative Masterplan

## Material Palette

The building material palette will comprise muted wall colours and dark slate roofs, to integrate the development with its landscape setting at the edge of the settlement. The materials will be robust and durable.



Image of a typical street in the proposed development



Illustration of the proposed palette of materials.

# Landscape and Public Realm

## Landscape Framework

The landscape approach seeks to utilise and build on the character of the setting by:

- o Organising the structure of the landscape around the established field boundaries, boundary features and tree belts.
- o Nestling the development into the landscape and working with its topography.
- o Not developing on the north corner and in the local central 'valley'
- o Retaining existing mature trees.
- o Reinforcing the character of the setting with new tree planting.
- o Offsetting development from the perimeter of the site.
- o Establishing a public realm and landscape which recognises the site's location on the threshold between an urban edge and a rural landscape.
- o Proposing a development density similar to the surrounding area.
- o Building to a maximum of 2 storeys
- o Implementing structure planting and open space areas as part of the initial stage of the development, to establish a strong landscape setting into which the built development is introduced.
- o Creating green spaces which connect to the wider green network for people to walk and cycle through



Landscape Plan

# Landscape and Public Realm

## Landscape Character Areas

The masterplan has been developed to create a distinctive new residential neighbourhood which is integrated with its landscape setting at the edge of the Livingstone settlement.

The approach has been to establish a landscape framework that provides structure to the development, and contains it, so that the new housing sits comfortably within the landscape setting.

The scale of the development is broken down into a series of character areas, each with their own specific landscape structure and identity, which respond to their particular part of the site.

The approach and proposals are appraised in the Landscape and Visual Impact Assessment by Horner + Maclennan which is submitted in support of the application.

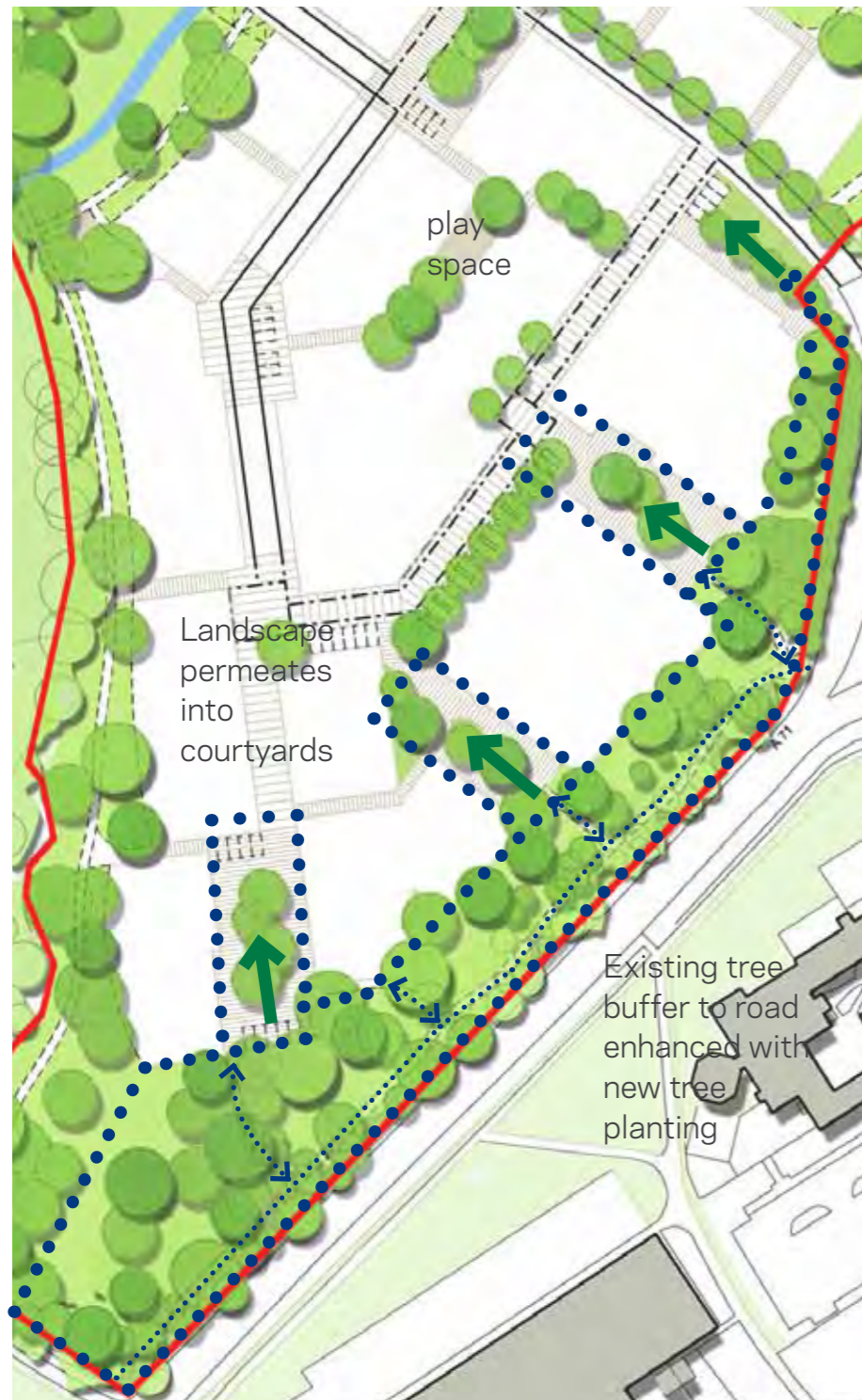


Landscape Plan

# Landscape and Public Realm

## Character Areas

1. Tree belt buffer to Bankton Road



2. Brotherton Farm tree belt



3. Central local valley



# Landscape and Public Realm

## Character Areas

4. Large community green



5. North slope




6. Residential courtyards



# Landscape and Public Realm Playspace Provision

The allocation of playspaces within the development is in accordance with West Lothian Council's open space standards as set out in the Local Development Plan. Playspace is provided for each area of the development in addition to the generous green space elsewhere on the site.

 Play areas (0.4Ha in total)

 Residential Courtyards (0.7Ha in total)

Total Playspace = 1.1Ha



Landscape Plan

# Landscape and Public Realm

## Pedestrian Connectivity

The majority of the streets and spaces are pedestrian priority and Home Zones to promote a safe and pleasant walking and cycling environment. (SPP paragraph 42)

These are integrated with a network of paths through the green landscape around the development which, in turn, connect to existing pathways so that the development is easy to move around and beyond (SPP paragraph 46).



Landscape Plan



# Indicative Masterplan

## Vehicle Access and Parking Strategy

The access strategy establishes a hierarchy of primary and secondary streets to facilitate vehicle access with a clear priority for pedestrians and cyclists in accordance with Designing Streets principles.



- o The primary access point is from an existing spur on the Wilderness Roundabout.
- o The primary access road is a vehicle priority street with pavements for pedestrians.
- o This provides access to the residential courtyard spaces via 6-8m shared surfaces.
- o The courtyards themselves are semi-private Home Zones with pedestrian priority and vehicular circulation around a central landscape feature.



# Indicative Masterplan

## SUDS Strategy

Surface water run-off from roads and housing plots on the development will be drained through a SUDS system designed in accordance with the requirements of the Local Authority and SEPA. The natural topography of the site will be utilised and surface water will drain into a SUDS pond located in the central valley on the site. From here, it is anticipated, that discharge will be made into the natural watercourse. The surfaces of shared spaces and private driveways will be paved with porous paving to allow surface water to drain away.

-  Porus paving to privately maintained shared spaces
-  Porus paving to privately maintained driveways



# Indicative Masterplan

## Sustainability and Environment

The development will foster a sustainable lifestyle as a guiding principle for the new neighbourhood through an holistic approach which will encourage healthy, sustainable living and wellbeing.

Sustainability will inform and permeate all aspects of the development using the best precedents as benchmarks for what can be achieved and strive to mirror successful sustainable communities throughout Scotland and Northern Europe.

The development contributes to sustainable development by:

- o Supporting the delivery of accessible housing.
- o Making efficient use of existing land and infrastructure
- o Supporting good design and the six qualities of a successful place.



support  
sustainable  
lifestyles



build  
sustainable  
places

# Indicative Masterplan

## Technical Summaries

The PPiP submission is supported by technical reports, surveys and documents prepared by Gladman's consultant team comprising: Goodsons, Envirocentre, Alan Motion Tree Consultants, CFA Archaeology Ltd and Andrew Carrie Traffic and Transportation. Summaries of the main points of relevance to the Design Statement and Indicative Masterplan are as follows.

### Engineering Site Appraisal

The ground conditions on the development site are primarily hard clay in the top 6m. Based on these assumed firm clay soils it is envisaged that traditional pad and strip foundations could be adopted.

Perched ground water may be present due to shallow clay soils.

Basic remodelling of the current site topography will be required to create platforms suitable for housing plots. It is anticipated that all excavated material could be retained on site using a cut-fill balance.

There is known mine entry on site but the ground appears to be otherwise minerally stable.

### Ecology and Habitat

EnviroCentre was commissioned by Gladman to undertake a phase 1 habitat survey and protected species walkover at a site on Brotherton Farm, Livingstone.

The survey aimed to identify all broad habitat types within the site boundary and included a search for suitable habitat for and evidence of protected species (i.e. bats, otters, water voles, badgers and nesting birds).

The survey area does not support any sites designated for nature conservation value at a local or national level. Several Sites of Special Scientific Interest (SSSIs) were recorded within 4km of the site however these are not connected by structure or function to the site.

A total of four phase 1 habitat types were identified within the survey area. Although suitable habitat for a range of protected species was identified within the site, no direct field evidence was recorded.

No European Protected Species licences are likely to be required.

General mitigation measures are provided in the report.

# Indicative Masterplan

## Technical Summaries

### Drainage Strategy and Flood Risk Assessment

The type 1 flood risk assessment presented in the Drainage Strategy and Floodrisk Assessment report confirms that the site is at low risk of flooding from fluvial, tidal, groundwater and pluvial sources.

Surface water run-off, from the roads and the housing plots, will be drained through a SUDS system, designed in accordance with the requirements of the Local Authority and SEPA. It is envisioned that the discharge, which must be controlled in accordance with the requirements of the Local Authority, will be made to the natural watercourse. The current development proposals can be drained in accordance with the recommendations of the latest planning guidance and key stakeholder design criteria. The future, detailed drainage design will be carried out in accordance with the standards and regulations in force at that time.

### Transport Assessment

The site is well located to benefit from easy pedestrian and cycle access. All of the footways in Livingston are designated for cycle use. It is proposed that a new footway be provided through The Wilderness, to the south of Silverbirch Glade, by upgrading and extending an existing informal route.

The site is located near to the A71 bus corridor, giving a total of 4 buses per hour in each direction between the site, the town centre, and various onward destinations. The proposal therefore meets the locational requirements of SPP and PAN75.

Vehicle access to the site would be achieved by extending an existing "stub" from the Wilderness roundabout, at the entrance to Bellsquarry.

The proposed development will generate a minimal number of new vehicle trips on the road network in the morning and evening peak hours. This Transportation Assessment examines the operation of the site access and also the junctions at Newpark Roundabout and Adambrae Roundabout, and concludes that the development will not significantly affect the operation of those junctions at peak periods.

### Air Quality

Due to the proximity of the proposed development site to the local road network, especially the A71, there was concern that traffic emissions may impact the air quality of future residents. As such a DMRB model was utilised to complete an initial screening assessment of the potential air quality impact.

Consultation was carried out with West Lothian environmental Health Department in May 2014. Environmental Health confirmed that they were not aware of any issues in relation to air quality in this area. As such the Design Manual for Roads and Bridges (DMRB) Air Quality model was considered appropriate to screen for air quality impacts at the site.

The results of the 2017 DMRB model predict that NO<sub>2</sub> and PM<sub>2.5</sub> concentrations will meet their corresponding Air Quality Objective Limits with and without development. The magnitude of change, on comparison of the with and without development scenarios, was predicted to be imperceptible with a negligible degree of impact on all locations considered in the model.

In summary, the Air Quality Assessment therefore concludes that air quality is not a material concern for the development.

# Indicative Masterplan

## Technical Summaries

### Utilities

#### On-site services:

- Telecoms - Telecoms tower located to the south-east of the site;
- Gas - There is a medium pressure line running along the north-eastern perimeter of the site. Its capacity is unknown.
- Water - None
- Sewers - None
- Cable and wireless - None
- Electricity - There is an overhead power line running across the northern part of the site. Allow for diversion.

#### Off-site services

- Telecoms - Overhead BT wire running along the road to Brotherton Farm
- Gas - There are low and medium pressure pipes supplying the industrial estate to the south-east, capacity unknown.
- Water - Water pipes running along the A71. Capacity unknown.
- Sewers - Combined sewers south of the proposed site.
- Electricity - Power cables running along the A71 which also supply the industrial estate to the south. Capacity unknown.
- Pipelines - There is a large Ineos pipeline running to the west of the site. The pipeline is sufficiently far from the site that PADHI Regulations should not apply to any development.

### Noise Assessment

World Health Organisation Precautionary Guideline Levels have been used as assessment criteria for defining noise levels and assessing the suitability of the site for residential development:

- 55 dB (A) LAeq during daytime periods i.e. 0700 hours to 2300 hours; and
- 45 dB (A) LAeq during night time periods i.e. 2300 to 0700.

The only areas where potential noise impact is predicted are those closest plots to the road and roundabout to the south and southeast of the site. An acoustic barrier to be installed along the southern and south-eastern borders of the development area in combination with an earth bund has been modelled in mitigation.

According to the CadnaA model outputs, the proposed acoustic screening would reduce the expected noise levels resulting in neutral to slight impacts during daytime and nighttime periods.

Window design has also been considered to reduce internal noise levels to acceptable standards. Using thermal insulating glazing units 4mm/(6-16mm)/4mm a 26dB(A) the necessary attenuation will be achieved. With this proposed screening and window design incorporated, noise levels will be reduced to a level considered as acceptable for residential development, and can be controlled by condition of planning consent.

### Tree Survey and Arboricultural Constraints

The existing shelterbelt, groups and hedgerows are important landscape features and the retention of the trees and the features as a whole should generally be retained within the development. It is inevitable that in developing the site some tree loss will occur. Wherever possible, road access points should be planned to utilise existing gaps in hedgerows.

# Indicative Masterplan

## Technical Summaries

### Archaeology

CFA Archaeology Ltd undertook an archaeological assessment with the following objectives:

- To identify the archaeological baseline within the study area; and
- To assess the potential of the study area to contain previously unrecorded buried archaeological remains.

Based on the results of the assessment, the archaeological potential of the proposed development is considered to be low

The West of Scotland Archaeology Service (WoSAS), which provides curatorial support to West Lothian Council, confirmed that trial trenching evaluation would be required in advance of development. The results of the desk based assessment indicate that it would be appropriate for the requirement to conduct the trial trenching evaluation to be a condition attached to planning consent for the development. The exact scope of works for the evaluation would be agreed in advance with WoSAS on behalf of West Lothian Council, and would be detailed in a Written Scheme of Investigation.

### Landscape and Visual Impact Appraisal

The indicative masterplan layout responds positively to the characteristics of the site and its surroundings, incorporating a low density development with open space and landscape framework provision which responds positively to and reinforces the landscape pattern and character of the site.

The proposed development would have limited impacts on the landscape character of the surrounding area, although the character of the development site itself would be altered. Visibility of the site from the surrounding area is limited by existing boundary tree belts and woodland, and consequently visual impacts are predominantly limited. Where moderate adverse impacts are identified, these would be short term in nature as proposed planting establishes and matures.

Whilst the site currently comprises part of the Livingston Countryside Belt, it is considered that, with the landscape treatment proposed, the development could be successfully accommodated without compromising the overall landscape character of the Countryside Belt, and that the introduction of the proposed development would not result in the physical and visual coalescence of Livingston with Polbeth. Consequently, the objectives of the Countryside Belt designation would be retained.









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