

Greenferns, Aberdeen

Aberdeen City Council

JANUARY 2018

Development Framework

Prepared on behalf of:



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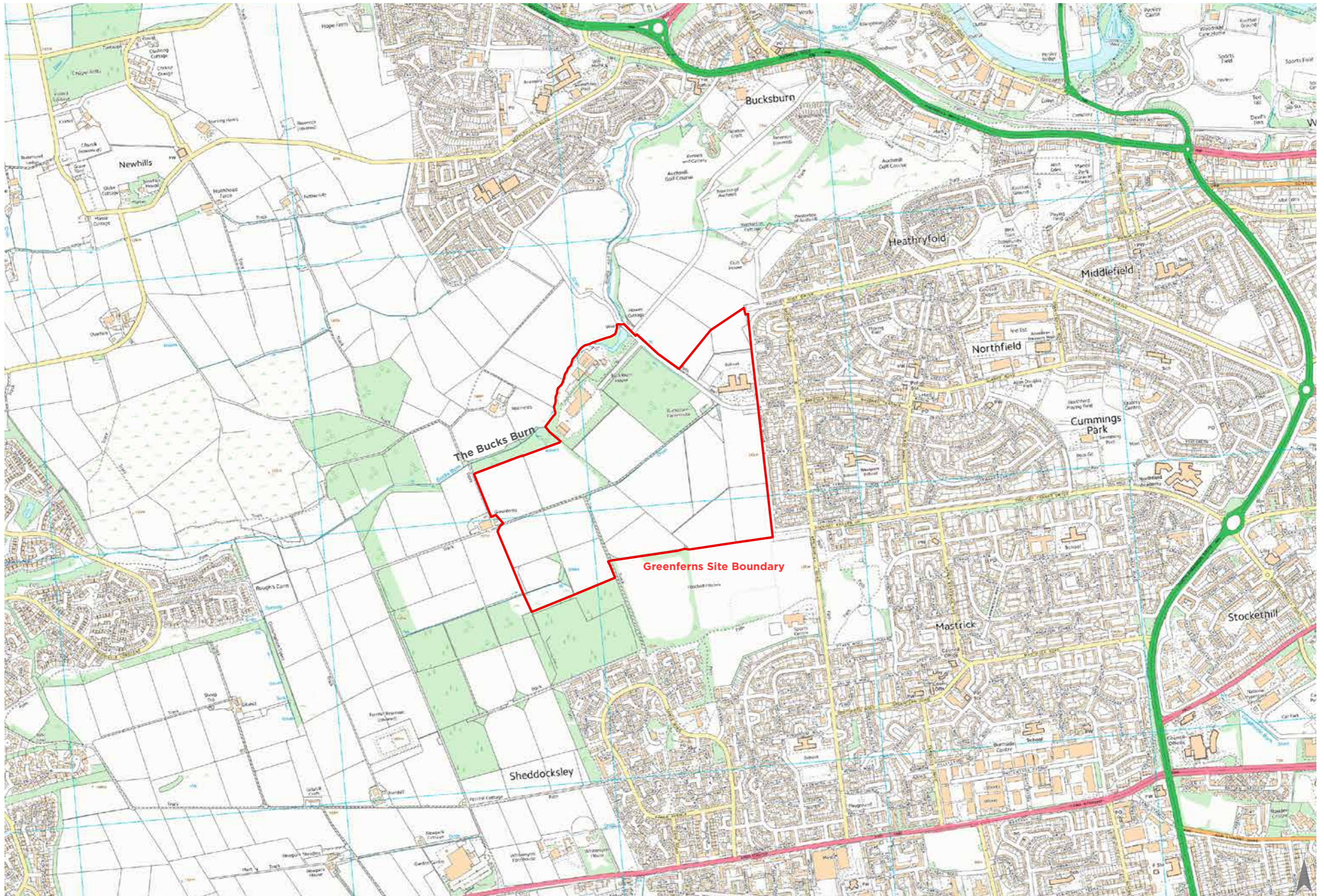


Fig. 01: Greenferns Site Boundary

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1. Introduction

1.1 Brief

OPEN and its design team were appointed by Aberdeen City Council in May 2017 to update the Development Framework for Greenferns (sites OP28 and OP33), Aberdeen.

The site boundary remains the same as for the previous Development Framework. The total area of the site is approximately 73 hectares. The majority of the site area is owned by two parties – Aberdeen City Council and Enermech. Both major parties have been involved in the preparation of the updated Development Framework.

The Greenferns Development Framework was Supplementary Guidance to the Aberdeen Local Development Plan (LDP) 2012. Local Development Plans and their associated statutory Supplementary Guidance have to be replaced at least every 5 years. With the new Local Development Plan adopted in 2017, all of existing pieces of Supplementary Guidance “fell”, and were required to be readopted or replaced with new Supplementary Guidance to support the LDP 2017.

The Local Development Plan Team does not consider that the existing Greenferns Development Framework should be automatically readopted to support the LDP 2017, however the provision of a Masterplan/Development Framework continues to be identified within the new plan. Although much of the information within the existing Development Framework remains valid, significant aspects of the document require to be updated to take account in changing circumstances over the last few years. An exercise was therefore required to bring this document up-to-date before readoption will be considered.

The following document presents the updated Development Framework which has been prepared in accordance with The Aberdeen Masterplanning Process: A Guide for Developers. Development Frameworks are expected to identify a clear vision for the site that will be compatible with Scottish Planning Policy, the Aberdeen City and Shire Strategic Development Plan, and the adopted Aberdeen Local Development Plan. The updated document for Greenferns will be an essential tool for taking forward development on the site.

1.2 Design Team

OPEN as lead masterplanning consultants have assembled the following multidisciplinary team to provide technical input to help develop the Development Framework for Greenferns. The Team consist of the same consultants who were involved in the preparation of the original Development Framework. The Team have met regularly throughout the development of the framework to ensure the creation of a proposal which is both robust and sustainable.

OPEN	-	Lead Masterplanning Consultants
Knight Frank	-	Planning Consultants
Ramboll Environ	-	Environmental Consultants
SWECO	-	Traffic Consultants
SWECO	-	Utilities Consultants

1.3 Introduction

This document can be thought of as comprising two main sections, ‘The Approach’ and ‘The Vision’ which together create the Development Framework for Greenferns.

The Approach

This section outlines the approach taken in developing the Framework for Greenferns and the key design influences, challenges, site constraints and opportunities that have helped shape and inform it. Starting with an overview of relevant policy, this section looks at how Greenferns fits into the city before zooming into the site itself, its features and character. This Section is not intended to be an exclusive record of all the information reviewed throughout the design process, however it highlights the key issues, providing the rationale for the Development Framework and providing a useful introduction and background to the project. Further detailed site information is contained within the appendices.

The Framework will assess the site and determine the character and identity of the local area in order to inform an overarching Vision.

The Vision

This section sets out the concept and vision for Greenferns. It highlights the aspirations for the site, with precedents taken from both the north of Scotland and further afield, helping to inform how a successful residential community can be created. The Development Framework is illustrated and explained through descriptions of its component parts, with clear aims and principles given for each element. The different layers of the framework should not be viewed in isolation however, viewed together they form a strong, co-ordinated framework for Greenferns, creating an essential base from which more detailed design can progress.

>THE APPROACH



WHAT IS GREENFERNS TODAY?

WHAT CAN IT BECOME TOMORROW?

These two fundamental questions have been the underlying stimulus to our approach in establishing the Development Framework for Greenferns.

With today's economic climate and latent demand for housing, particularly in Aberdeen City and Shire, there will be considerable pressure on the delivery of housing to meet projected demand. However, the pressure on the delivery of housing needs to be balanced with the delivery of a meaningful place, with a clear identity and an attractive proposition for a wide audience of potential inhabitants. Although a residential led master plan, there needs to be a clear structure and mix of uses balanced within the overall framework, catering for business, education, leisure, retail, health care as well as residential uses. If this is not achieved Greenferns will become a single use enclave on the edge of the city.

There has been a considerable amount of detail analysis and survey of the site and its context. To understand Greenferns you must understand its location as it is this which is key to unlocking its potential and establishing a clear identity for a new part of the city.

Our approach has been to understand and establish the key character forming elements inherent in the existing place, and utilise them as components in the creation of the framework and development detail.

Presently it is evident the site is very much on the edge of many things, for instance at the edge of the city, neighbourhoods, the Greenbelt, the Bucks Burn, open spaces, distinctive field boundaries etc. It is also at the end of the settlement line and at the end of the public transport network. Unless you live in the surrounding neighbourhoods there is no real reason to go there. These are primary issues that must be addressed in the framework. We must ask ourselves:

WHAT ARE WE CREATING?

WHAT KIND OF PLACE WILL THIS BE?



In defining the future of Greenferns, we must identify the existing inherent character forming elements. These will be the main attraction points for future inhabitants. Being at the edge of the city, especially one like Aberdeen, opens up a whole set of new opportunities to explore, a whole set of reasons to want to go and live and work there.

Sitting on the edge of the city means it is also on the edge of the countryside. With excellent public transport links back in to the city and the countryside on your doorstep, the life balance for many will be exceptionally attractive. The potential exists to create and enhance many of the wider features - links to the west and the Greenbelt, proximity to country parks, ecological corridors and water courses, abundance of wildlife, potential of enhancing existing parks and open spaces for the benefit of future inhabitants as well as the surrounding population, employment potential in close proximity (the City, airport, Dyce and on the site itself), and new educational facilities.

Landform and topography also have a fundamental role to play in the eventual form of Greenferns. It is a site situated on a north side of a prominent ridge line, exposed to the ever changing climate of the north east of Scotland. This in itself should have a fundamental impact on the design of housing and other buildings, urban design layout and orientation, location of open space, streets and linkages. The current prevalence of field boundaries gives us a hint of how people have coped with working on this land up to now. We must learn from this and sympathetically employ our new land uses in ways that create shelter and attractive microclimates, as well as retaining, where possible, significant field boundaries, enhancing them and integrating them with the new built environment. This is the essence of Greenferns, learning from the site in order to help define its new existence.

However, it is not always about learning solely from the site itself, but also recognising we can learn from settlement precedence, from those in the north of Scotland as well as elsewhere. Allowing those precedence lessons to on one level inspire us and on another be influenced by the very site conditions that are inherent, in this case the natural environment. This cannot be just another housing layout, it must be responsive to the environment in which it exists but it can also be inspired from the best examples from other places.

With the pressure on housing land supply in the City and Shire, it is inevitable the expansion of the city will create greater pressure on its edges, in places like Greenferns. But it would be a great loss to turn such a characterful edge in to another housing estate. That is why Greenferns must also prepare for further flexibility and expansion within itself and to do that it must create something identifiable and of clear character right from the beginning. What is developed in the first instance must be capable of setting the design and living agenda for what follows.

The establishment of fundamental character elements must permeate right through the design of Greenferns, to detail layouts and subsequent build out. This helps set the parameters for the design of such items as the quality and quantity of open space, to how buildings will sit on the site, how they are orientated and what materials are appropriate.

With a site like Greenferns, it is clear that the emerging character and identity is from the very essence of its location between city and countryside, by the quality of its natural environment juxtaposed with that of its built environment. If this can be done successfully then the beginning of a sustainable settlement will be underway.



Greenferns?

Being at the edge of the City, especially one like Aberdeen, opens up a whole set of new opportunities to explore, a whole set of reasons to want to go and live and work there.

Aberdeen Local Development Plan 2017

City Wide Proposals Map
Scale 1:22,500

Natural Environment

- Green Belt (NE2)
- Green Space Network (NE1)
- Urban Green Space (NE3)

Housing

- Residential Areas (H1)
- Mixed Use Areas (H2)
- Land Release Policy (LR1)

Community Facilities

- Existing Community Sites and Facilities (CF1)
- New Community Facilities (CF2)

Economic Development

- Business and Industrial Land (B1)
- Specialist Employment Areas (B2)
- West End Office Area (B3)
- Aberdeen Airport (B4)
- Aberdeen Harbour (B5)

Transport

- Land for Transport (T1)
- Aberdeen Western Peripheral Route
- Aberdeen Airport Public Safety Zone

Retailing

- City Centre Retail Core (NC2)
- West End Shops and Cafes (NC3)
- Town Centres (NC6)
- District Centres (NC6)
- Neighbourhood Centres (NC6)
- Commercial Centres (NC6)
- Beach and Leisure (NC9)

Others

- Opportunity Sites (OP number)
- City Centre Boundary (NC1)
- City Boundary

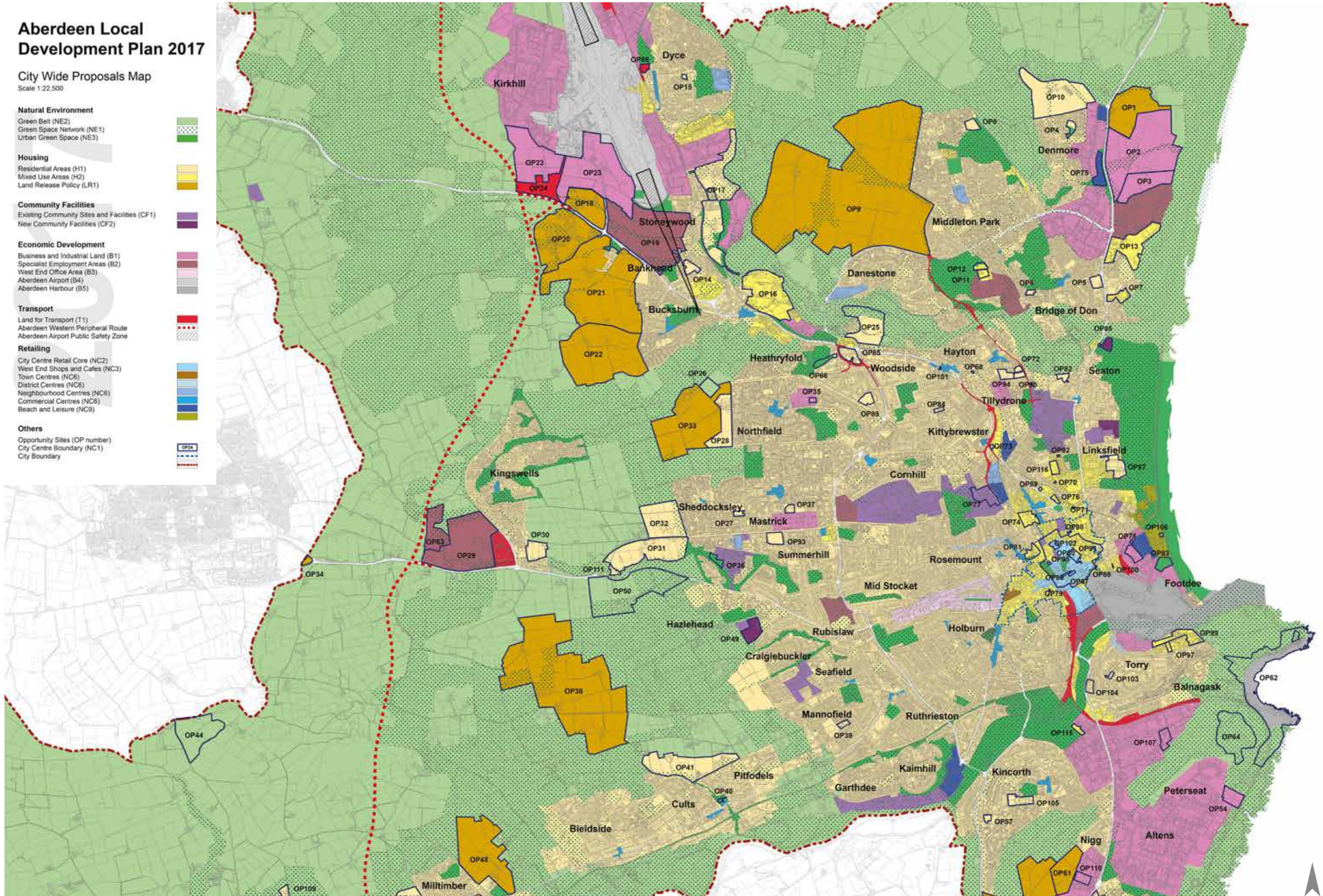


Fig. 02: ALDP Proposals Map

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2. Policy Context

2.1 The Development Plan

Development Frameworks are expected to identify a clear vision for the site that will be compatible with Scottish Planning Policy, the Aberdeen City and Shire Strategic Development Plan, and the adopted Aberdeen Local Development Plan. The updated document for Greenferns will be an essential tool for taking forward development on the site.

Aberdeen City and Shire Strategic Development Plan (2014)

The Aberdeen City and Shire Strategic Development Plan (2014) was approved by Scottish Ministers in March 2014 and supersedes the previous structure plan for the area approved in 2009. The purpose of the plan is to set a clear direction for the future development of the North East and provide the high level guidance for the areas local development plans. The emphasis, as with the previous structure plan is on high growth across the region with the plan's spatial strategy identifying four strategic growth areas of which Aberdeen City is one.

Aberdeen Local Development Plan (2017)

The new Aberdeen Local Development Plan was adopted by Aberdeen City Council in January 2017. This replaces the previous plan which was approved by the Council in 2012. The new plan is based on the approved 2014 Strategic Development Plan and seeks to deliver the growth identified in that plan which includes circa 32,000 new houses and over 400 hectares of employment land.

Greenferns was identified as an allocated mixed use development site in the now superseded 2012 Local Development Plan and that allocation has been carried forward into the new plan. Greenferns is identified in the new plan as Opportunity Site OP28 Greenferns for 120 houses and Opportunity Site OP33 Greenferns for 1350 houses and 10 hectares of employment land. The bulk of this is programmed for delivery in the period up to 2026, with 400 houses allocated to the Phase 2 Period: 2027 - 2035. Opportunity Site OP28 is covered by the Policy for Residential Areas (H1) and Opportunity Site OP33 is covered by Land Release Policy (LR1). Greenferns is also identified in a zone where a masterplan requires to be prepared to help coordinate the planning and delivery of associated infrastructure requirements.

Though not part of Greenferns, Opportunity Site OP26 Auchmill Golf Course is located immediately to the north of Greenferns. This site is reserved for two replacement golf holes at Auchmill Golf Course to replace holes for which the land was required to help facilitate a new access road to serve the Greenferns development and the existing industrial and business site at Bucksburn House.

Parts of the north western edge of Greenferns, including parts of Bucksburn House lie within the Bucks Burn Gorge LNCS (an important linear habitat) and are designated as Green Space Network in the adopted Local Development Plan. These are important policy considerations for the Development Framework and Masterplan and will influence the design and layout of land uses on site.

Supplementary Guidance and Aberdeen Local Development Plan 2016 Action Programme

The two Opportunity Sites at Greenferns were subjected to approved Supplementary Guidance (Greenferns Development Framework) to the 2012 Aberdeen Local Development Plan. In that plan they were referred to as Opportunity Sites OP45 and OP39. The Development Framework however requires to be refreshed to take account of a number of changes that have happened over the past 5 years both in terms of planning consents and market conditions and aspirations, prior to being adopted as Supplementary Guidance to the 2017 Aberdeen Local Development Plan. As a result of that the Council, who control the Greenferns development, have commissioned the updating of the Development Framework.

Both Opportunity Sites OP28 and OP33 are referenced in the Local Development Plan Action Programme agreed in April 2017. In addition to the number of houses proposed at Greenferns reference is made in the Action Programme to the delivery of 270 affordable housing units at Greenferns as part of the Council's Strategic Infrastructure Plan. The Action Programme needs updating in terms of some of the references to Greenferns, particularly the timing of planning applications coming forward for Greenferns and the timing of the provision of infrastructure.

The Action Programme also lists the infrastructure requirements for Greenferns.

These include the following:

Walking and Cycling

The creation of strategic links across the site and linking up to the existing Core Path Network within the area.

Public Transport

Extension of existing bus routes into the site and possible connections to the Maidencraig North development in the longer term.

Roads

Connecting up Provost Rust Drive and Provost Fraser Drive.

Water

The development of a drainage and Sustainable urban Drainage Systems (SuDS) strategy for the site and identifying the extent of investment required in new water and wastewater infrastructure. This will include a flood risk assessment for parts of Greenferns.

Education

A new primary school (279 pupil capacity) has already been provided at Heathryburn within the Greenferns development. It opened in 2009. This may need to be extended at some time in the future to accommodate the additional pupils generated by Greenferns. A new school for children with additional support needs has also been provided within the Greenferns development on Opportunity Site OP28. This opened in 2017 and will serve children from across the City. Northfield Academy has a current capacity of 857 pupils and will provide the secondary education for Greenferns. It may require to be extended to accommodate pupils from Greenferns in the future.

Health

A new health centre providing both GP and Dental Chairs will require to be provided at Greenferns.

Major changes in terms of infrastructure requirements since the approval of the development framework in 2009 are the removal of a primary school and the recycling centre which are no longer required.

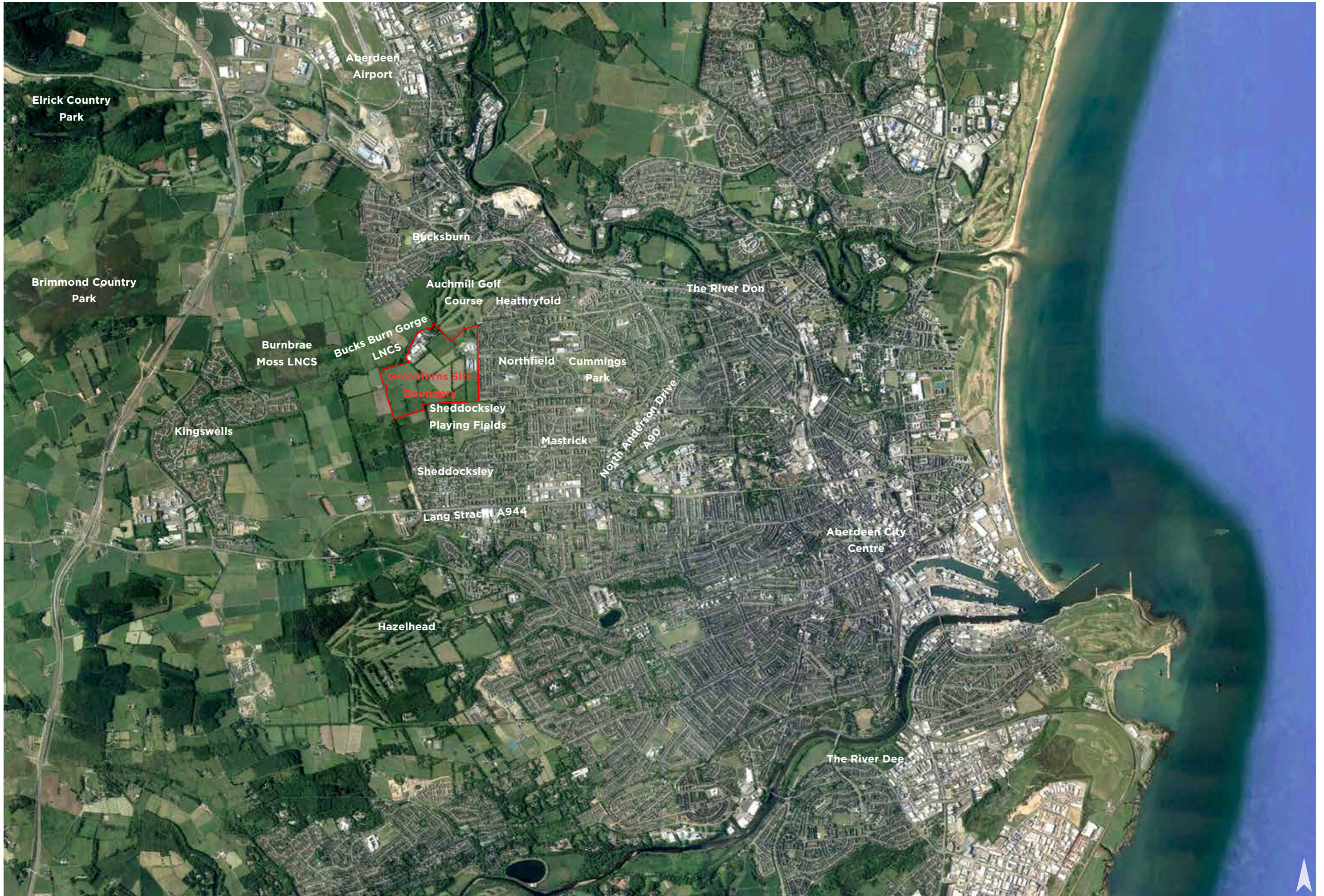


Fig. 03: City Context

2.2 Planning Applications

In terms of changes since the approval of the development framework in 2009, planning permission was granted on part of Opportunity Site OP28 for a new school for children with additional support needs in 2015. The new school opened in 2017. Planning permission was also granted in 2009 for alterations to provide two new holes at Auchmill Golf Course to replace those required to help facilitate a new access to serve the Greenferns development. The new holes are now in play and the land for the new access for Greenferns is now available and no longer a constraint to a start on development of the site.

Enermech, an international services company providing asset support to the energy and infrastructure sectors is located at Bucksburn House which lies within the Greenferns Development Framework Area and Opportunity Site OP33. At the time of the 2009 Development Framework consideration was being given to the industrial and business uses at Bucksburn House being changed to residential use. These plans have now changed with Enermech consolidating their operations at Bucksburn House. A number of consents have been granted to Enermech for extensions to their operations since 2010.

2.3 Airport Safe Guarding

Airport noise and safeguarding considerations also apply to parts of the Greenferns site. In this respect an updated noise assessment has been carried out for the site and has identified that sound insulation will be required for dwellings in some parts of the site. Contact has also been made with the British Airports Authority regarding airport safeguarding issues and account will require to be taken of the potential for bird strike in the design and layout of uses and buildings.

Policy B4 Aberdeen Airport is clear that residential development in an area where noise levels are in excess of 57dB LAeq (the summer 16- hour dB LAeq measurement) will be refused. As a result of this, there is an area of the site to the north east where residential development will not be permitted. The height of buildings may also be restricted on parts of the site.

2.4 Regional and Local Transport Strategies

The Nestrans Regional Transport Strategy (RTS) was published in 2008, and replaced by a Refresh approved by Scottish Ministers in January 2014. Taking the lead from the National Transport Strategy the RTS has four strategic objectives:

- **Economy:** To enhance and exploit the north east's competitive economic advantages, and reduce the impacts of peripherality.
- **Accessibility, Safety and Social Inclusion:** To enhance choice, accessibility and safety of transport of all in the north east, particularly for disadvantaged and vulnerable members of society and those living in areas where transport options are limited.
- **Environment:** To conserve and enhance the north east's natural and built environment and heritage and reduce the effects of transport on climate, noise and air quality.
- **Spatial Planning:** To support transport integration and a strong, vibrant and dynamic city centre and town centres across the north east.

These objectives have provided the framework for the vision, aims and objectives developed for the City's Local Transport Strategy (2016-2021) and form a key part of the projects that are delivered by the City and funded by Nestrans. These documents outline the policies and proposals that will guide the planning and improvement of the local transport network over the next five years and this is considered in more detail in the Transport Assessment being prepared in support of the updated Greenferns Development Framework.

2.5 Core Paths

The City Council adopted their Core Paths Plan in April 2009. This provides the framework of core paths for public access within the City and provides links to wider networks of other paths. The Development Framework and Masterplan for Greenferns will link the development to the core paths network in the area.

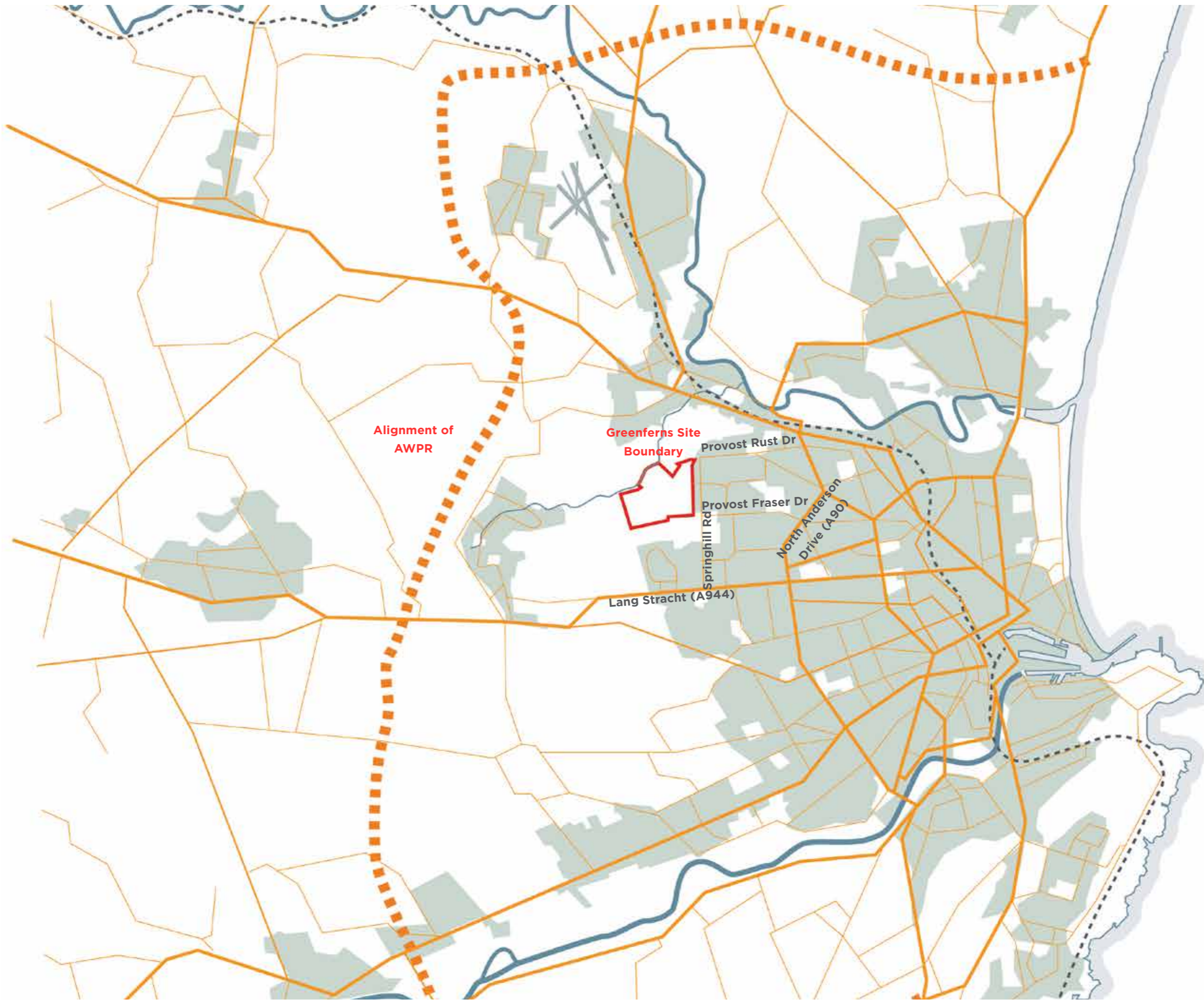


Fig. 04: Strategic Context

3. Strategic Context

The wider context has informed the Development Framework on a strategic level. Key issues include the position of Greenferns on the edge of the City, the relationship of Greenferns to any potential future growth and the potential of Greenferns to strengthen ecological and open space networks.

3.1 The City Edge and Future Growth

The Greenferns site is located on the edge of the city. This raises questions as to whether Greenferns becomes an extension to the existing city edge or attempts to define itself as a place in its own right.

Pressure for further development from the edge of the City is also evident, in the adopted Local Development Plan with major new housing land allocations at Greenferns Landward and Maidencraig. For this reason development immediately to the west of the Greenferns Study area has not been identified for future growth. However, with sustainable growth in mind, it has been the intention of this Development Framework to ensure the potential for future growth in the longer term is not precluded, this may be through pedestrian or vehicular access only. The Development Framework has been designed to allow Greenferns to connect to its wider surroundings, providing the opportunity for future connections to the west and north.

3.2 Transport

Strategic network and bus usage

Greenferns is located to the west of Aberdeen, approximately 4 miles from Aberdeen City Centre. The site is adjacent to the large residential area of Northfield and Mastrick. The North Anderson Drive (A90) runs north to south to the east of Northfield whilst the Lang Stracht (A944) runs east to west to the south of the site below Sheddocksley. The Lang Stracht (A944) and North Anderson Drive (A90) are busy routes and experience queues during the peaks and off peaks. The A90 is part of the main strategic trunk road network around Aberdeen.

The roads in the residential area adjacent to the proposed site are varying quality. The main routes are Provost Rust Drive and Provost Fraser Drive. These are primary routes with wide carriageways that cater for residential car trips and local bus services. They have wide grass verges with access roads on either side. Provost Rust Drive has some traffic calming measures such as ramps, pedestrian crossings, bus stops and on street parking. Springhill Road is a north south route in the area, this runs from the Lang Stracht to Provost Rust Drive.

The modal Split for Aberdeen has been assessed from the 2011 census data. The areas have a high frequency of local bus services with a large range of services and a variety of local bus stops in the area. Thus the area experiences a sustainable modal split of 13% bus and 17% on foot.

Aberdeen Western Peripheral Route

The Aberdeen Western Peripheral Route (AWPR) is a new road being developed to improve travel in and around Aberdeen and the north-east of Scotland. Backed by the Scottish Government, the road is being developed by Transport Scotland - the national transport agency - in partnership with Aberdeen City and Aberdeenshire councils. Part of the road opened in December 2018, connecting the A90 at Stonehaven to the A96 at Craibstone. The remaining northern parts of the road are due to open in 2019.

Existing Junction Capacity

The roundabouts at A90/Provost Fraser Drive and A90/Provost Rust Drive adjacent the site are very busy during peak periods causing congestion and delays at peak times. There is a conflict between local traffic travelling towards the city centre and strategic traffic travelling around Aberdeen.

The signalised junction between Springhill Road and the Lang Stracht is also busy during peak periods with traffic travelling towards the city centre and strategic traffic wishing to reach the trunk road network. Queuing is visible on the approaches to the junction during these periods. The queuing also acts as deterrent to drivers using Springhill Road as a rat run.

The Greenferns Transport and Accessibility Assessment (last updated in 2010) contains an assessment of the Transport issues associated with the proposed Greenferns Development. The purpose of the report is to highlight the impacts that the development may have on the surrounding transportation infrastructure and mitigation measures, explained where necessary.



Fig. 05: Existing bus on Provost Rust Drive.

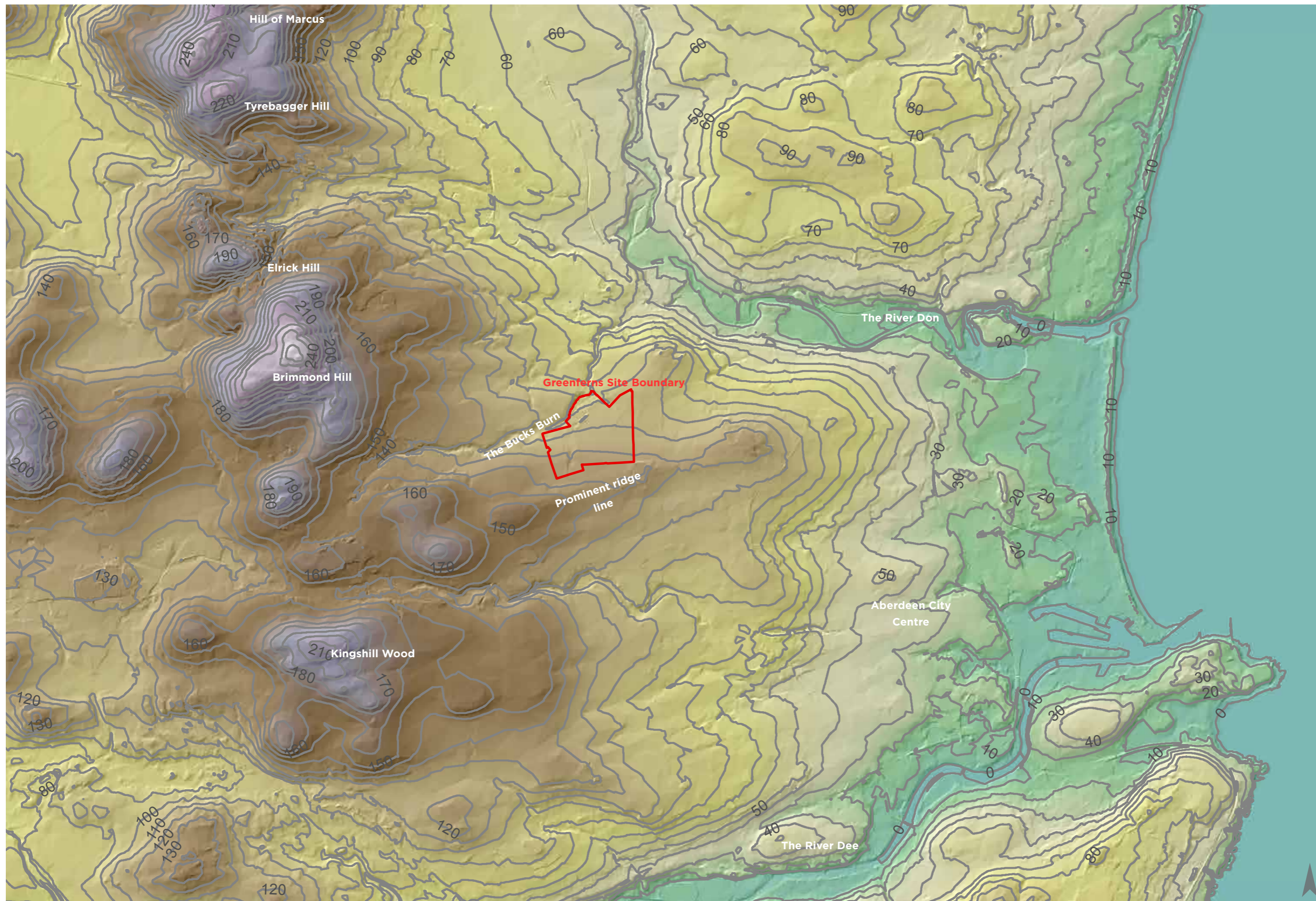


Fig. 06: Regional Topography

Scale: 1:40,000@A3

3.3 The countryside edge, Ecology and Open space

As Greenferns is located on the edge of the City it is also on the edge of the countryside. The site is identified within the Open Farmland Landscape Character Type in the Landscape Character Assessment 1996. The development proposals described in this document have sought to respond to the landscape character and location on the edge of the city.

The Bucks Burn Local Nature Conservation Site (LNCS) defines the northern boundary of the site. The LNCS site is made up of two merged sites, Bucksburn Gorge and Burnbrae Moss. This has been designated under the Councils Local Development Plan due to high quality of woodland and water, the habitat also acts as a wildlife corridor running through farmland and housing.

Woodland areas on site have been classified in the Semi-natural woodland Inventory, Ancient woodland Inventory and the Aberdeen City Semi-natural Habitat Inventory.

The Den of Maidencraig is situated 1.4 km south of the site and is designated as a LNCS, Local Nature Reserve (LNR) and contains trees protected under Tree Preservation Orders (TPO). Includes semi-natural and ancient woodland, grassland and freshwater habitats. This designated site would not be impacted by the proposed development as locations are separated by notable distances, buffered by urban areas, main roads and open habitat.

The importance of these resources and the connectivity between them, in addition to other nearby areas of open space including Auchmill Golf Course, Brimmond Country Park, Elrick Country Park and Hazelhead has been an important consideration throughout developing the Framework.

The development of the site will considerably change the pattern of open space in the area, bringing the City edge closer to Kingswells and reducing the size of the green finger which penetrates into the City along the Bucks Burn (currently bordered by Sheddocksley, Northfield and Bucksburn and incorporating Auchmill Golf Course and the Sheddocksley Playing Fields). The effects of these changes has been considered throughout the development of the Framework.

A Phase 1 Habitat Survey has been completed to identify areas of sensitive and useful habitat and to incorporate these where possible into the Development Framework.

3.4 Topography and setting

As can be seen from the landform map on the opposite page Greenferns is located on a north facing slope. The Bucks Burn runs along the site's northern edge. The Bucks Burn's importance on a city wide scale as a tributary to the River Don is clearly visible on this map. Also evident is the importance of the prominent ridge line which runs along the site's southern boundary and penetrates well into the City.



Fig. 07: View of Brimmond Hill from the site.

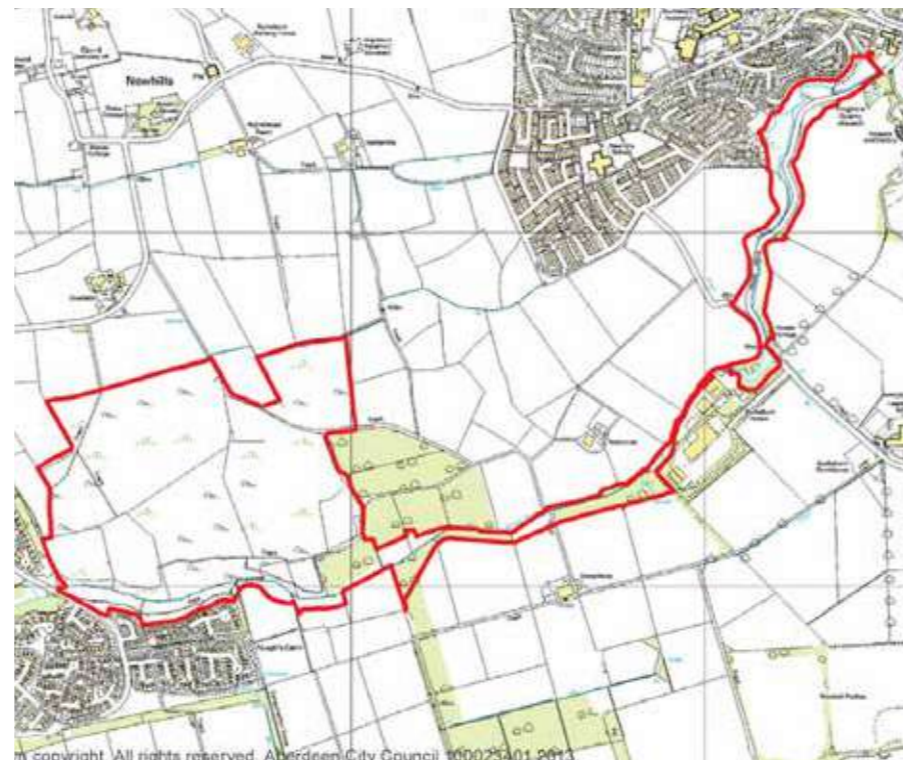


Fig. 08: Bucksburn LNCS (extract from ACC LNCS Booklet)



Fig. 09: Photo of Bucksburn LNCS northern edge of site.

3.5 Visual Assessment

As part of the Development Framework process a Landscape and Visual Impact Appraisal has been undertaken which has inputted into the design process (updated in 2017). In landform terms, the ridge line (visible below) establishes an important physical link between the City and countryside. Visually it is an important physical feature.

The appraisal has three objectives:

- To determine the impacts that the development will have on visual amenity around the site and in the wider setting.
- To provide recommendations that will minimise the adverse visual impacts of the development.
- To provide recommendations that will ensure optimum integration of the site with the wider landscape setting.

The process of the appraisal has identified a series of 'recommendations' that will minimise the adverse visual impacts of the development. It should be noted that visibility of the development is not automatically considered to be adverse, and impacts are considered to be adverse only if the development will have a specifically detrimental effect on a view.

The various recommendations identified in the course of the appraisal are as follows:

- Provide/retain a strong landscape framework within the development to ensure that trees/woodland/hedgerows continue to be an important characterising component of views.
- Restriction in the height of the development in certain locations.
- Careful layout design of the development (with careful orientation of buildings, leaving gaps between blocks etc).

The implementation of these recommendations will reduce the impacts of the development on the visual receptors. There are further recommendations to ensure optimum integration of the site with the wider landscape setting.

The integration of the development with the wider landscape and visual context is of great importance in the implementation of the framework. The process of the appraisal has led to the identification of a series of broad recommendations that will ensure that the development is integrated as closely as possible with the wider landscape setting. These broad recommendations are drawn from the generalisation of the more specific recommendations above, which are designed to minimise adverse visual impact. If the recommendations to minimise adverse visual impact are implemented, these broader recommendations will also be fulfilled.



Fig. 10: View of Greenferns from Bucks Burn Nursing Home.

- Create diversity of density, orientation, height and style of the buildings throughout the development, ensuring variety and interest across the site, and avoiding the appearance of unsympathetic, uniform development.
- Retain and enhance woodland along the Bucks Burn to emphasise the importance of the wooded valley as a topographical feature and create a defensible, screening urban edge.
- In addition to the commitment of retaining the woodland along the Bucks Burn, a further commitment to the retention of the established avenue of trees along the Howes Road will help protect this remaining element of the designed landscape associated with Bucksburn House.

- Provide/retain a strong landscape framework within the development to ensure that trees/woodland/hedgerows continue to be an important characterising component of views.

The recommendations outlined above are a summary of those contained within the Landscape and Visual Impact Appraisal, all of which have been used to help shape the form and layout of the Development Framework as it evolved.





Fig. 11: Greenferns Study Area

Scale: nts@A3

4. Local Context

The local character and context of the site has helped inform the preparation of the Development Framework. Existing site features such as field boundaries, the Bucks Burn and ridge line have strongly influenced the framework. The edges of the site and how these integrate with surrounding land uses has been particularly important.

4.1 Site details

The Greenferns study area is located in the north east of the city and covers some 73.6ha (Total Red line is 73.6ha. less the 7.60ha owned by Enermech). With the exception of the Industrial Site around Bucksburn House, which is owned by Enermech, on the northern boundary of the site, all of the land within the study area is owned by the Council.

The eastern boundary of the site is defined mainly by Davidson Drive which has a north-south alignment, with the houses on its east side facing west over the Greenferns site area. Between Davidson Drive and North Anderson Drive some 2 km to the east, is the extensive residential area of Northfield and the neighbourhoods of Middlefield and Cummings Park.

The northern boundary is defined by the Bucks Burn at the lowest point of the site, set within a corridor of mature woodland including some areas of ancient woodland. This woodland wraps Bucksburn House and its grounds to the east. To the west of Bucksburn House is the industrial site, access from Howes Road, the site comprises a series of large buildings and yard areas. The industrial site is separated from the agricultural land to the south by a raised embankment.

Rising from the Bucks Burn the site slopes gradually to the south where a large area of sports pitches define the southern boundary, separating the study area with the residential area of Sheddocksley further south. The formal sports pitches run along the whole southern boundary of the site and are defined by shelter belts in a number of locations.

The western boundary of the site is defined by a series of walled field boundaries and farm tracks as far west as Greenferns Farm. The study area is open to the north with views out across the Bucks Burn towards Brimmond Hill. To the west there are views towards Kingswells across agricultural land, punctuated by tree lined field boundaries.

The predominant land-use within the site area is agriculture and in particular rough grazing, in a series of small fields defined by strong field boundaries of stone walls, hedges and strips of mature trees.

Heathryburn Primary School is located in the east of the site adjacent to Davidson Drive with access from Howes Road. To the south of Heathryburn Primary School is the new Orcharcd Brae school for children with additional support needs. The new school is also accessed via Howes Road.

Apart from the two school sites, Bucksburn House and other buildings within the industrial site there are no other buildings within the site area.



Fig. 12: Local Context

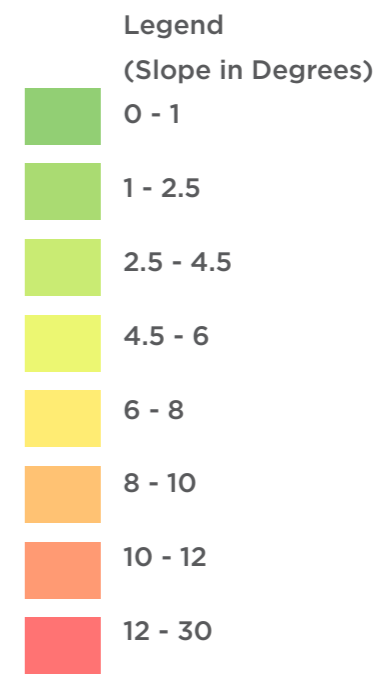
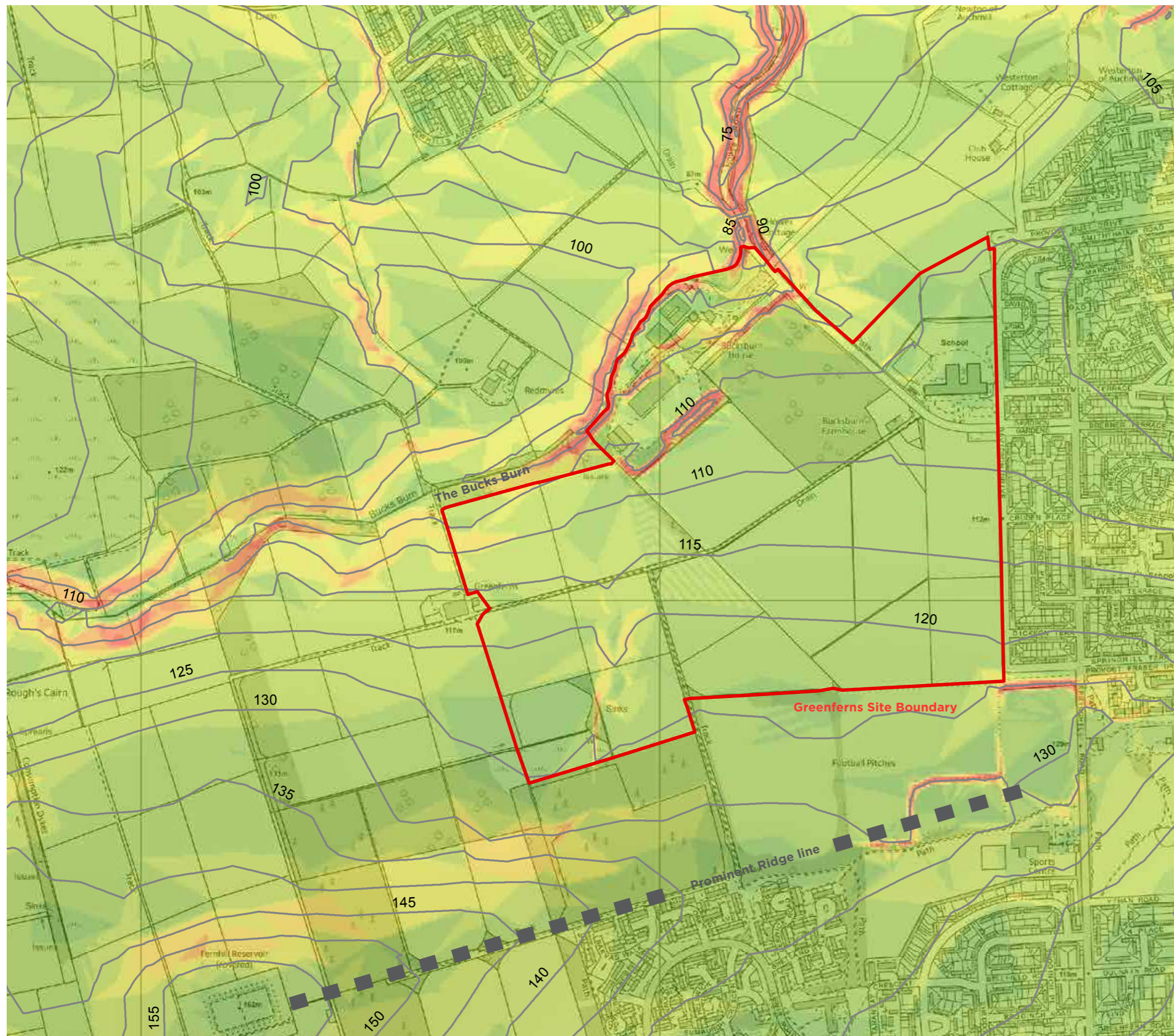


Fig. 13: Local Topography

4.2 Landform

Topography and Slope Analysis

The slope analysis plan opposite and landform plan on the right clearly show the importance of both the Bucks Burn to the north and the ridge line to the south in defining the site. The site generally slopes down towards the north. Maximum height above sea level is 125m with the lowest point at 85m above sea level.

Drainage

A Drainage Assessment has been undertaken to determine the existing natural and man-made drainage patterns across the site. There will be a preference to drain the site in line with the existing flow regime described below, though the presence of existing field drains and ditches mean the hydrological characteristics are somewhat artificial.

- Site topography is generally fairly even, sloping towards the Bucks Burn to the north.
- There are no obvious sub-catchments within the site area, though roads may provide artificial boundaries to overland flow.
- The south-west corner of the site is largely characterised by marshy grassland. The topography suggests overland flow will pond in this area to some extent. This area would overflow/discharge via shallow groundwater flow to the north and on to the Bucks Burn, this would probably occur only after heavy and/or prolonged precipitation.
- The central and western areas both slope in a northerly direction towards the Bucks Burn with only minor topographic variance, determining which section of the burn the water will discharge into i.e. upstream/western or downstream/eastern.
- Topography suggests a small area adjacent to Northfield, in the east of the site may naturally discharge off-site prior to entering any significant watercourse. The slope remains towards the north and the Bucks Burn, though further downstream than the site.

The overall drainage plan will take into account the drainage over the entire site and provide appropriate mitigation to ensure all issues are resolved. An initial Drainage Assessment has been prepared which demonstrates that the means by which post-development drainage can be addressed and the respective areas to be set aside for Sustainable Drainage Systems are achievable.

Key Views From The Site Include:

- Brimmond Hill to the Northwest
- Aberdeen Airport to the North
- Cummings Park to the east (photo not included)



Fig. 14: View to Brimmond Hill



Fig. 15: View to Aberdeen City Airport



Fig. 16: Surface water flowing across west of site towards Buck Burn.

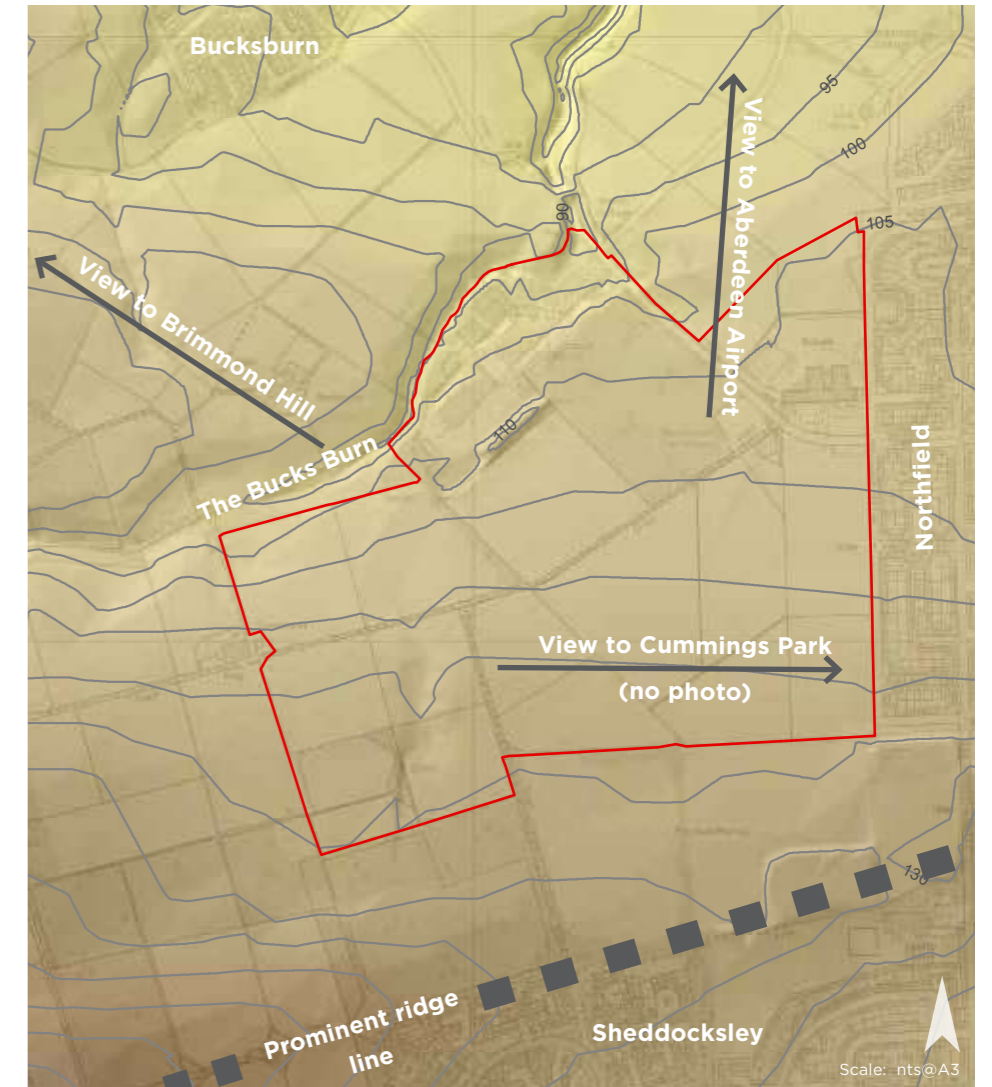


Fig. 17: Landform

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Fig. 18: Existing drainage ditches across the site.

4.3 Ecology

A Habitat Survey has been undertaken to inform the design process and ensure the proposed development maintains or enhances the wildlife of the area.

Existing trees must be protected and development should not take place within the root protection areas and the zone of influence of existing trees.

Bucksburn Local Nature Conservation Site

The Bucks Burn, which flows along the north boundary, is situated within a Local Nature Conservation Site (LNCS); previously referred to as a District Wildlife Site (DWS) and referred to as such in the 2009 report. The site is made up of two merged former DWS sites, Bucksburn Gorge and Burnbrae Moss. This has been designated under the Councils Local development Plan due to high quality of woodland and water, the habitat also acts as a wildlife corridor running through farmland and housing.

The importance of these resources and the connectivity between them, has been a key consideration in developing the Framework.

Wych Elm

Woodland areas on site have been classified in the Semi-natural woodland Inventory, Ancient woodland Inventory and the Aberdeen City Semi-natural Habitat Inventory. A stand of mature broadleaved woodland surrounds the Bucks Burn along the north western boundary of the site. Dominant species include Ash *Fraxinus excelsior* and beech *Fagus sylvatica*.

Frequent species present include silver birch *Betula pendula* and sycamore *Acer pseudoplatanus*. Hazel *Corylus avellana* and lime *Tilia sp.* are occasional. Wych elm *Ulmus glabra* was recorded occasionally on site within such areas of woodland. This species is an Aberdeen Local Biodiversity Action Plan priority species.

A number of Wych Elm *Ulmus glabra* are present on the site, predominantly around Bucks Burn House and the track which leads to Greenferns Farm. These are a Local Biodiversity Action Plan Species. Attention has been paid to ensure the retention of these key species within the Development Framework where possible.

Ancient Woodland

Woodland areas on site have been classified in the Semi-natural woodland Inventory, Ancient woodland Inventory and the Aberdeen City Semi-natural Habitat Inventory. The woodland is dominated by ash *Fraxinus excelsior* and beech *Fagus sylvatica* and efforts have been made to retain and enhance this woodland within the Development Framework.

A Woodland Management plan and Tree Protection Plan will be undertaken in accordance with the requirements of BS5837:2012 'Trees in relation to Design, Demolition and Construction' and Scottish Government policy 'Control of Woodland Removal' following the detailing of site layout design proposals.

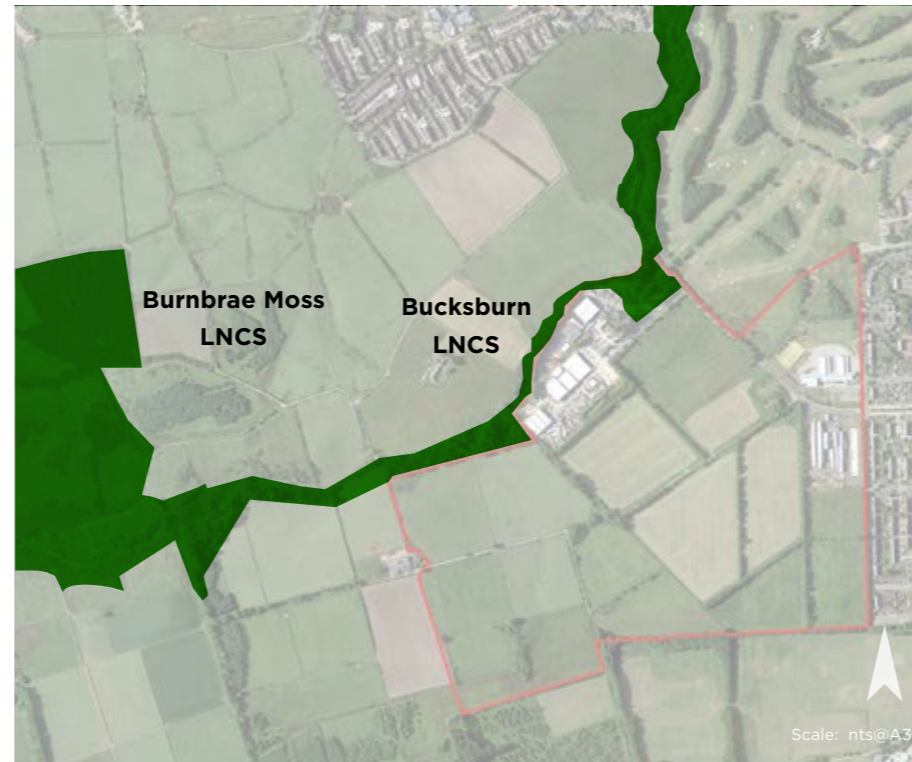


Fig. 19: Boundary of Local Nature Conservation Sites



Fig. 21: Approximate locations of wych elms on site



Fig. 20: Deer on the edge of the Bucksburn LNCS.



Fig. 22: Wych elm on the track to Greeferns Farm.

Field Boundaries

The eastern area of the site is characterised by strong, tree lined field boundaries. Many of these are included within the Scottish Semi Natural Woodland Inventory (2000). The field boundaries contribute to the biodiversity value of the site, providing habitat and foraging for birds, mammals and invertebrates. Improves habitat connectivity.

These also have aesthetic and shelter value and where possible have been retained within the Development Framework.

Other Habitats on Site

The site is mostly open farmland dominated by species-poor improved grassland in the west and arable grassland in the east. Close to the patches of woodland, small areas of neutral grassland occur which are slightly more species rich.

Protected species

Although no signs of protected species were recorded on site at the time of survey, one sign of badger foraging activity was made just north of the site boundary, however, no setts were observed within the site boundary. The following was noted; woodland edges and tree lines throughout the site offer suitable foraging and commuting habitat for various bat species and woodland stands are suitable for breeding and foraging birds. Therefore, removal of these habitats has the potential for adverse impacts on both species groups and where possible these features have been retained within the Development Framework.

Although no signs of further protected species were recorded on-site, there is potential for the presence of bats, otters, birds and amphibians. The presence of such species should be assessed for as part of the future EIA if determined to be required.

Archaeology

Owing to the undeveloped nature of the site and the potential for undiscovered archaeological finds, a phased schedule of archaeological works will be required as part of the future planning application process. It is likely that this could be dealt with as a condition to any subsequent planning application.



Fig. 23: Approximate locations of ancient woodland on site.



Fig. 24: Ancient woodland on Greenferns Farm Track.



Fig. 25: Strong field boundaries, to be retained where possible.



Fig. 26: Example of tree lined field boundary.

4.4 Existing Open Space

Open Space Audit and Open Space Strategy

Aberdeen Open Space Audit (2010) was carried out in 2008. The purpose of the project was to gain an understanding of the quantity and quality of the city's open spaces and how accessible they are to the communities who use them. The audit helps inform future decision making relating to the planning and management of the city's open spaces and has been used to develop the Open Space Strategy (2011-2016).

The findings and proposals contained within these documents have been important in shaping the Development Framework.

01 - Sheddocksley Playing Fields

There is a large provision of sports pitches directly to the south of the site at Sheddocksley. These are in varying conditions and it is evident that whilst the pitches closest to Springhill Road and the Sports Centre are well used, the pitches deteriorate in quality towards the west. Evidence of misuse of the pitches is also evident with signs prohibiting motorbikes present.

02 - Existing Sports Centre

The existing Sports Centre is located off Springhill Road. It is a considerable distance from the sports centre to the furthest sports pitches.

03 - Eric Hendrie Park

Eric Hendrie Park is a long established park in the Mastrick area of Aberdeen. It consists of open grass areas, mature specimen trees, a play area and a good network of paths giving access to all areas of the park and linking into the surrounding community and to longer walks into the rural fringes around the area. A local community group, the 'SPRING' group, have leased the site from Aberdeen City Council and now have responsibility for the management of the site.

04 - Heathryfold Play Area

This small play area includes some play equipment however in the main appears to be falling into disrepair.

05 - Auchmill Golf Course

Auchmill Golf Course is located to the north of the site. Planning permission was also granted in 2009 for alterations to provide two new holes at Auchmill Golf Course to replace those required to help facilitate a new access to serve the Greenferns development. The new holes are now in play and the land for the new access for Greenferns is now available and no longer a constraint to a start on development of the site.



Fig. 27: Existing Open Space.



Fig. 28: Sheddocksley Playing Fields.



Fig. 29: Sheddocksley Playing Fields.



Fig. 30: Auchmill Golf Course.

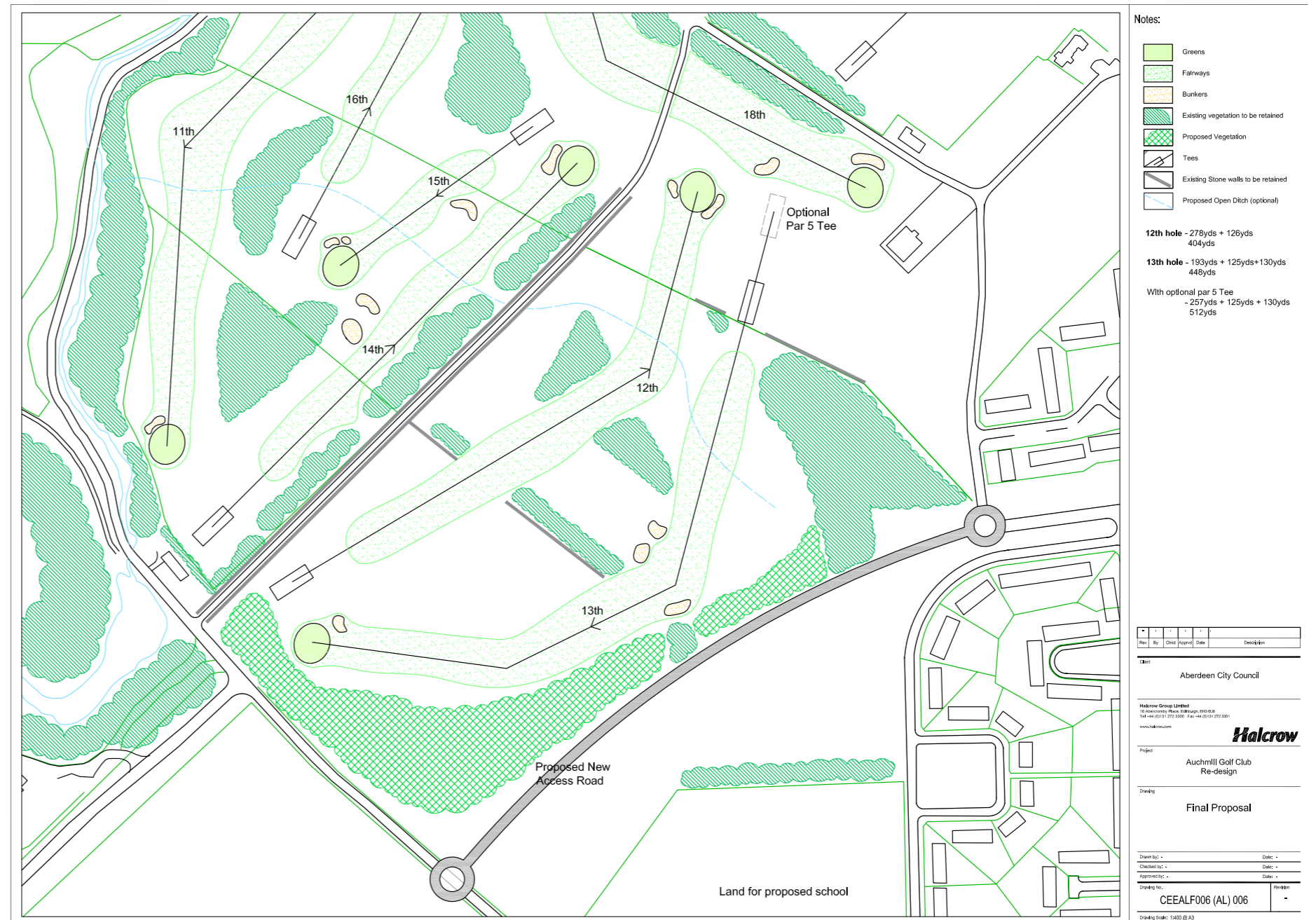


Fig. 31: Plan of proposed relocation of 2 holes of Auchmill Golf Course to allow site access from Provost Rust Drive.

4.5 Existing site and surrounding buildings

01 - Bucksburn House and surrounding units

Bucksburn House sits in the northern corner of the site. It is an attractive house, set overlooking a dammed section of the Bucks Burn. It is approached via Howes Road which benefits from a mature avenue of trees. There are several modern office units clustered around the house with large parking areas. Further to the south-west a number of large industrial units with associated yards and parking areas are located. The northern boundary of the industrial site is defined by the Bucks Burn Gorge LNCS. The southern edge is defined by embankments and encroaches into the area of ancient woodland.

The industrial area including Bucksburn House and grounds are owned and operated by Enermech.



Fig. 32: Existing Site and Surrounding Buildings.



01: Bucksburn House



01: Office Units associated with Bucksburn House



01: Industrial Unit associated with Bucksburn House



01: Industrial Unit associated with Bucksburn House



O2: The Cottage, Howes Road



O3: Heathryburn School from Northfield.



O4: Orchard Bank School fro Howes Road.



O2: Howes Road and cycleway.



O3: Heathryburn School



O4: Orchard Bank School from the south.

O2 - The Cottage, Howes Road

The Cottage is outwith the Development Framework Site Boundary. Access to this residence should be retained.

O3 - Heathryburn School

The existing Primary school is set within grounds and accessed via Howes Road. The school has a community facility and an all-weather pitch.

O4 - Orchard Brae School

A new school for children with additional support needs has also been provided within the Greenferns development on Opportunity Site OP28. This is due to open in 2017 and will serve children from across the City.



05: Neighbouring Properties, Northfield



05: Neighbouring Properties, Davidson Drive.



06: Neighbouring Properties, Sheddocksley



05: Neighbouring Properties, Northfield



05: Neighbouring Properties, Davidson Drive.



06: Neighbouring Properties, Sheddocksley

05 - Neighbouring Houses, Davidson Drive

The neighbouring houses along Davidson Drive are typical 1970's two storey terraced and semi-detached properties. The properties are broadly similar in height, set back and appearance and face directly onto the large hedge and stone wall on the edge of the site. The street layout follows a broken grid structure.

06 - Neighbouring Houses, Sheddocksley

The housing at Sheddocksley is organised in small cul-de-sac type developments off Lewis Road. These consist of mainly two storey terraced and semi-detached properties. The organisation of these creates both small parking courts and areas of open space which suffer from being addressed by blank windowless facades.



07: Greenferns Farm



Sheddocksley track.



Greenferns track.



07: Greenferns Farm



Farm track to Greenferns Farm.



Existing stone walls.

07 - Greenferns Farm

Greenferns Farm consists of a small farm house with associated farm buildings, it is located outwith the Development Framework Site Boundary. Access should be retained.

08 - Bucksburn Farmhouse (demolished)

The site of Bucksburn Farmhouse is within the Development Framework Site Boundary. The buildings has been demolished and the site remain vacant.

Field boundaries and farm tracks

The site is characterised by a series of well-defined field boundaries and network of farm tracks and footpaths. The walls, ditches and tree lined tracks are a key character forming element of the site area and must be protected and retained across the site. Integrated where possible in to new proposals.

4.6 Communities

Surrounding Communities

Greenferns is situated on the edge of several existing communities including Northfield, Mastrick, Sheddocksley with Kingswells, Heathryfold and Bucksburn a slight distance away.

This raises several questions relating to identity and integration of Greenferns. This Development Framework aims to create a unique identity to Greenferns, creating a recognisable place and yet ensure this connects and integrates with the surrounding communities through sensitive design, good pedestrian connections and the potential for shared facilities.

Neighbourhood Centre

The neighbourhood centres of several of the surrounding communities vary in size and quality, and contain a variety of local amenities. These areas have a similar catchment to the proposed new community of Greenferns. Whilst provision of shops and other facilities is desirable a careful consideration must be given to ensure the success of these areas with attention paid to surrounding density, landuse, access and connectivity.

Public Transport

The neighbouring areas of Northfield and Mastrick in particular currently have very good public transport provision, with several services terminating in Northfield. The Development Framework will aim to maintain this high usage and will create opportunities for several possible bus routes to serve the new community. The framework will also aim to ensure it is possible for all dwellings to be located within 400m of a bus stop / approximately a 5 minute walk away.

Primary school provision

A new primary school (279 pupil capacity) has already been provided at Heathryburn within the Greenferns development. It opened in 2009. This may need to be extended at some time in the future to accommodate the additional pupils generated by Greenferns. The site at Greenferns is currently zoned to Westpark Primary School located within Northfield to the east of the site area.

Orchard Brae school for children with additional support needs has also been provided within the Greenferns development on Opportunity Site OP28. This school opened in 2017 and will serve children from across the City.

Secondary school provision

Northfield Academy has a current capacity of 857 pupils and will provide the secondary education for Greenferns. It may require to be extended to accommodate pupils from Greenferns in the future.

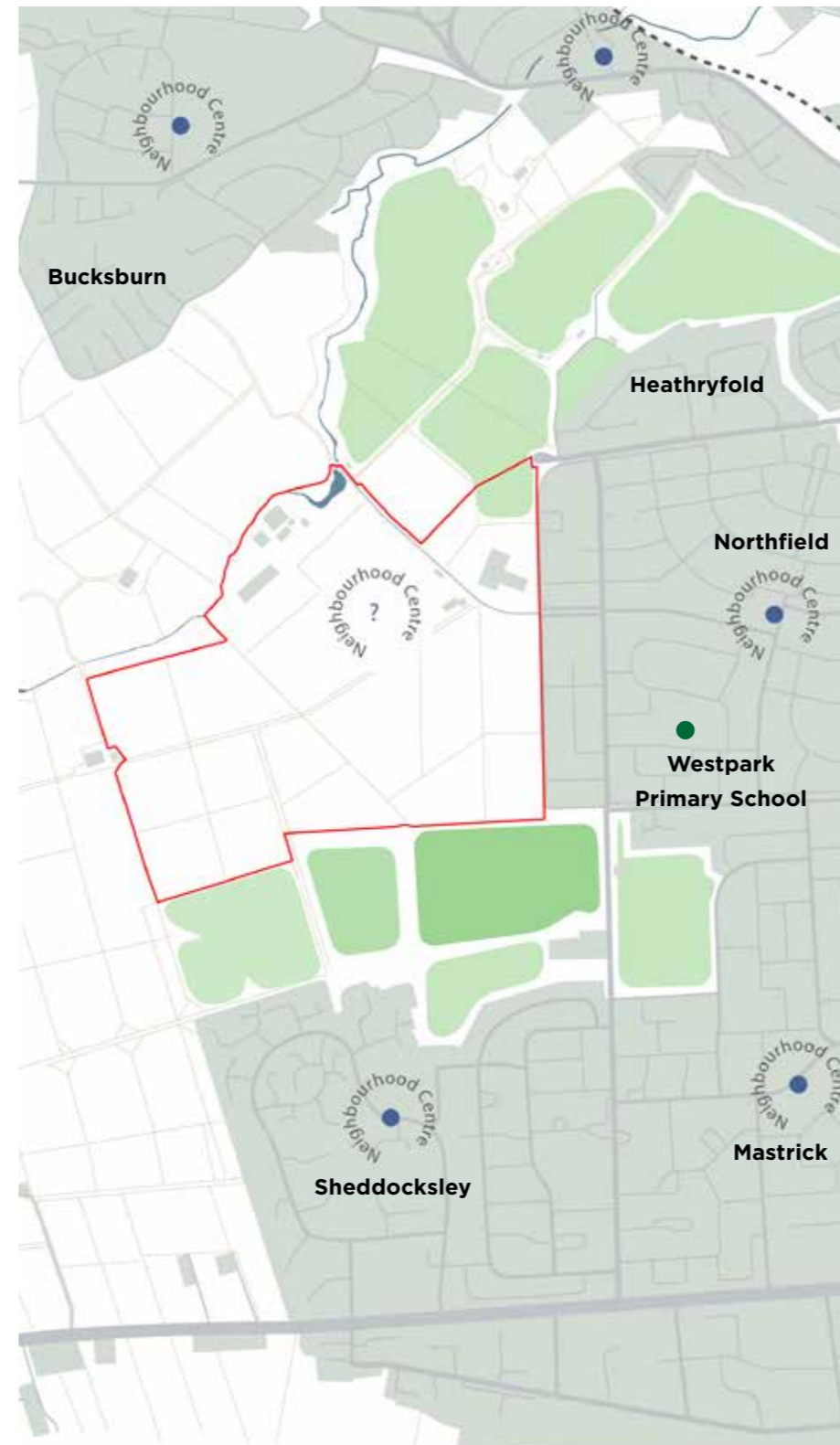


Fig. 35: Surrounding Communities.

< Neighbourhood Centres

Legend

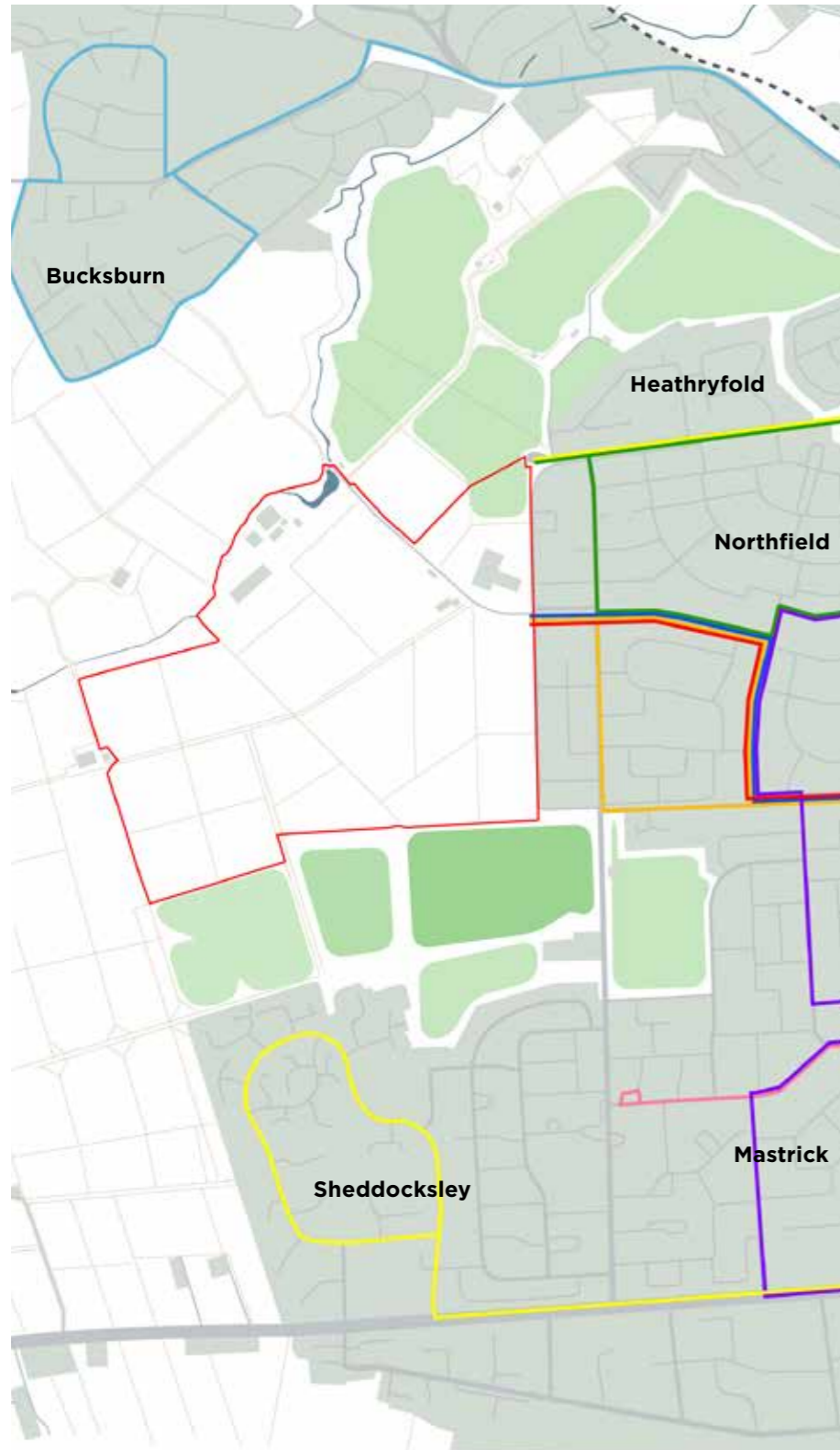
- Neighbourhood Centres



Fig. 33: Westpark Primary School.



Fig. 34: Northfield Neighbourhood Centre.



< Bus Routes

Legend	
First 3:	Cove - Mastrick
First 5:	Balnagask - Northfield
First 11:	Woodend - Northfield
First 12:	Torry - Heathryfold
First 13:	Seaton Gold Links - Scatterburn
First 17,17A,18A:	Aberdeen City Centre - Dyce Shopping Centre
First 23:	Sheddocksley - Heathryfold
Stagecoach 59:	Balnagask - Northfield

School Provision >

Legend	
Primary School	
School for children with additional support needs	
Secondary School	
01	New Heathryburn School has some existing capacity and potential for expansion.
02	Westerton School has some existing capacity.
—	To Northfield Academy (Greenferns is within catchment)
- - -	To Bucksburn Academy (Greenferns is outwith catchment)
- - -	Heathryburn School catchment includes some of the pupils from Marchburn, Middlefield and Smithfield Primary Schools which are to close.
- - -	Heathryburn School may have capacity for some of new Greenferns population
- - -	Westerton School has some existing capacity.

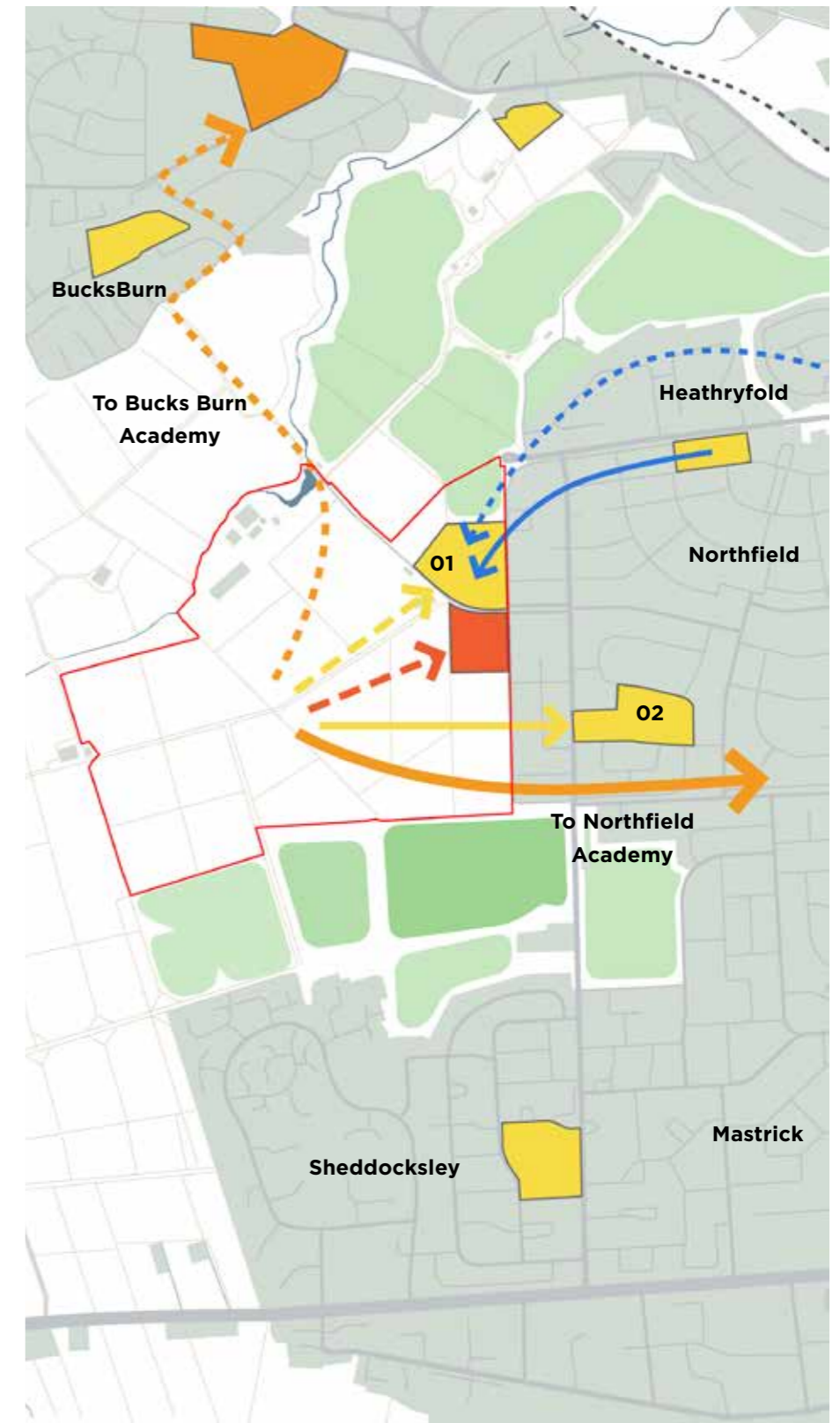


Fig. 36: Existing Bus Routes.

Fig. 37: Existing Schools.

4.7 Existing Path networks

Existing Pedestrian Routes

The area has a high number of pedestrian movements with a number of bus stops, schools, local shops and housing. The main crossing points are along Provost Fraser Drive, Provost Rust Drive and Springhill Road.

Core Paths

As can be seen opposite the Core Path Network around Greenferns is good and provides opportunities for proposed paths to connect into this network.

Tracks

A well sign posted track runs from the New Heathryburn School to Greenferns Farm. A track also runs down from Sheddocksley connecting into this track. These provide good links connecting into the Core Path Network.

Informal Paths (not shown on plan)

In addition to formal tracks a network of informal worn paths is evident highlighting the current use of the area for informal recreation.

The routes of the informal paths and tracks within the study area should be retained and formalised if possible or have reasonable alternatives provided.

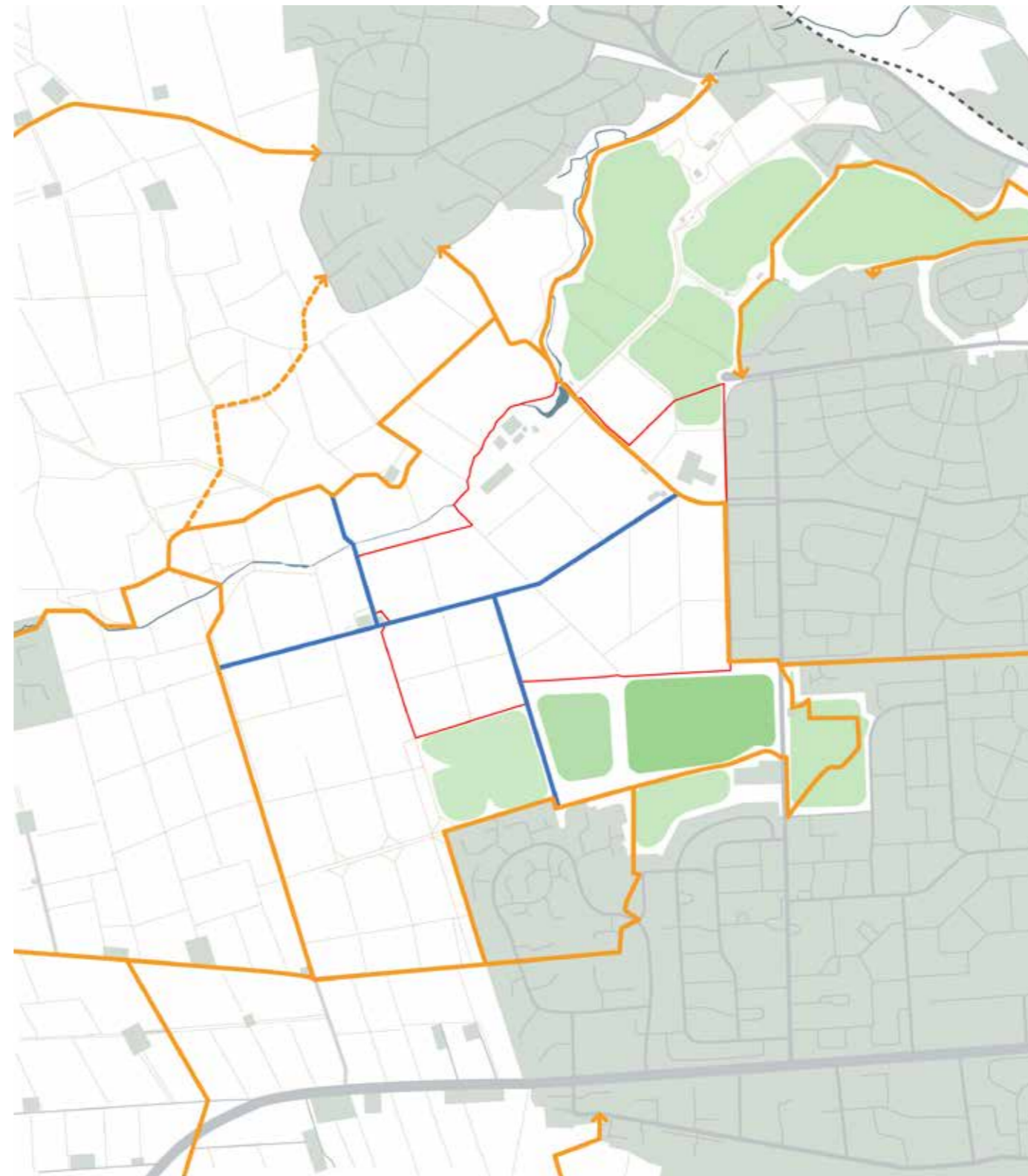
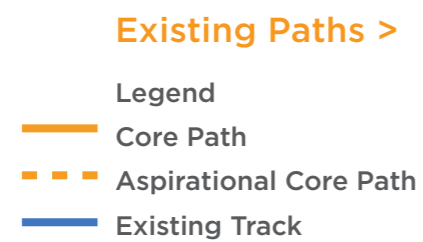


Fig. 38: Existing Path Network.



Fig. 39: Formal Tracks.



Fig. 40: Informal Paths.

4.8 Utilities overview

A desk top utilities survey has been undertaken to determine the existence and location of any pipe lines which may be a constraint to development. Whilst several utilities were present the survey revealed nothing which would prove a barrier to development.

The report has provided a high level overview of the existing utilities infrastructure, including the need for any major utilities diversions. The outline conclusions are as follows:

1. There are SGN, SSE, Scottish Water, BT, Vodafone, City Fibre and ACC Street Lighting existing services within or immediately adjacent to the site.
2. There are two potentially significant utilities diversions that may be required if it is not possible to accommodate the existing routes within the development layout:
 - Scottish Water 15" cast iron water trunk main.
 - Scottish Water 600mm diameter concrete foul sewer.
3. There is anticipated to be a degree of reinforcement and off-site works required in order to service the development. The extent of this will be confirmed with each of the statutory undertakers during the formal applications.

The plan opposite identifies the existing utilities across the site area.

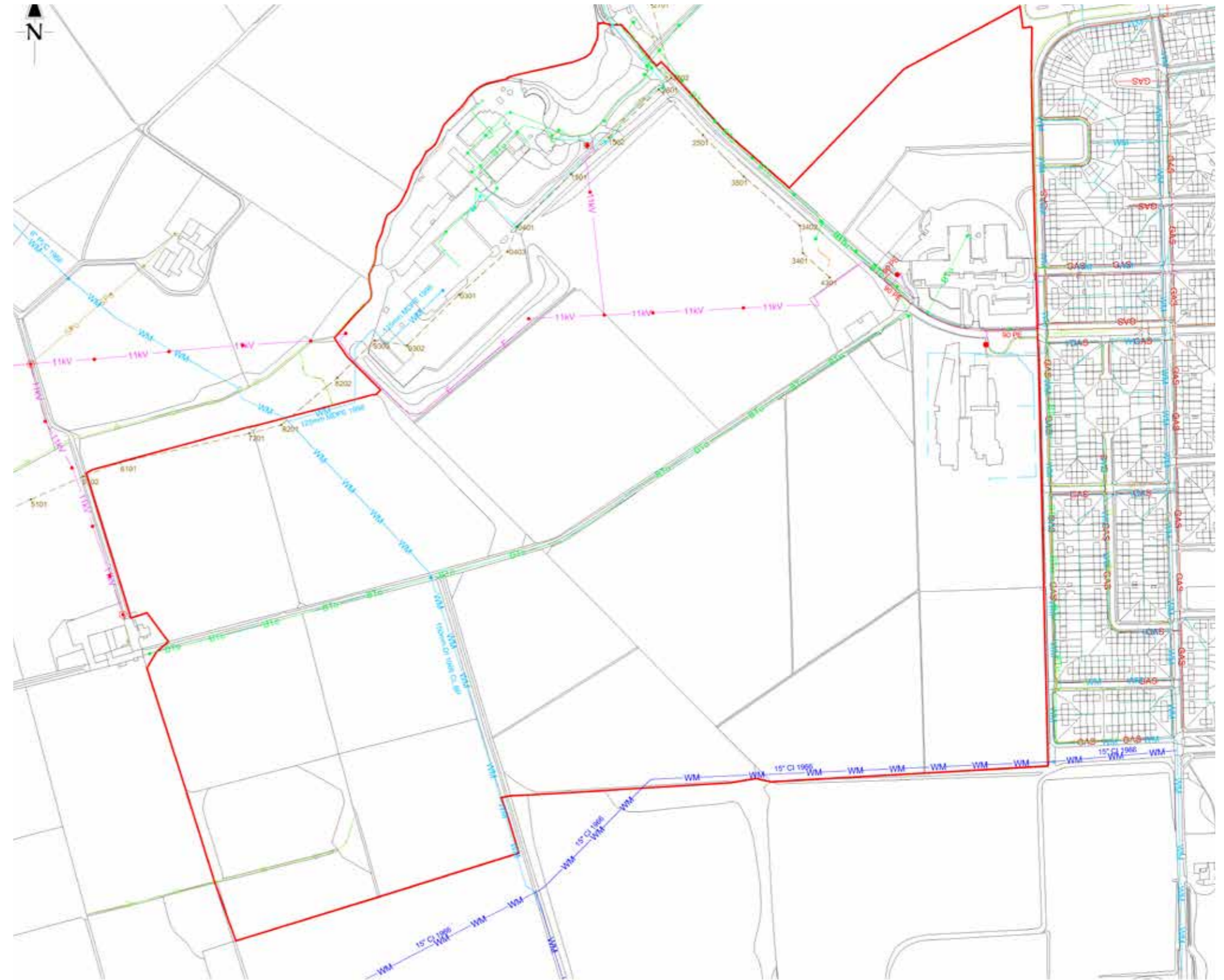


Fig. 41: Existing Utilities.

Legend:-	
	Site Boundary
	BT Overhead
	BT Underground
	CityFibre
	Vodafone
	Scottish Gas Network
	11kV Overhead
	11kV Underground
	Low Voltage Overhead
	Low Voltage Underground
	Street Lighting
	Water Main
	Trunk Main
	Water Distribution Main Proposed
	Combined Water
	Foul Water
	BT Overhead Pole
	Joint Box
	Low Voltage Overhead Pole
	11kV Overhead Pole
	Pole Mounted Transformer
	Substation
	Manhole
	Fire Hydrant
	Vodafone Access Chamber

4.9 Aberdeen airport

AIRPORT SAFE GUARDING

There are Airport Safe Guarding issues that impact upon the site, however, it is understood that these were not raised at the time of the Local Plan allocation however they have been taken into consideration in devising this Development Framework.

The Approach Surface (A safeguarded approach surface that is longitudinally centred on the extended runway centre line and extends outward and upward from each end of the primary surface).

Shown in red on the plan opposite. The numbers give the height of the surface in metres AOD (Above Ordnance Datum). The Approach surface rises at 1:50 for the first 3000m from the runway and then changes to continues at 1:40 for the next 3600m. This change happens in the north of the site just below to the south of Bucksburn House.

The Take-off Climb Surface (Each runway strip is provided with a take-off climb surface such that aeroplanes taking off have a clear, obstacle-free path with a guaranteed clearance surface over which to climb. This climb path is located within a defined area called the take off fan which originates from the end of the runway strip).

Shown in green on the plan opposite. The numbers give the height of the surface in metres AOD. This surface rises at 1:50 for its whole length of 15Km from the end of the Take-off run or the end of the clearway if one is provided.

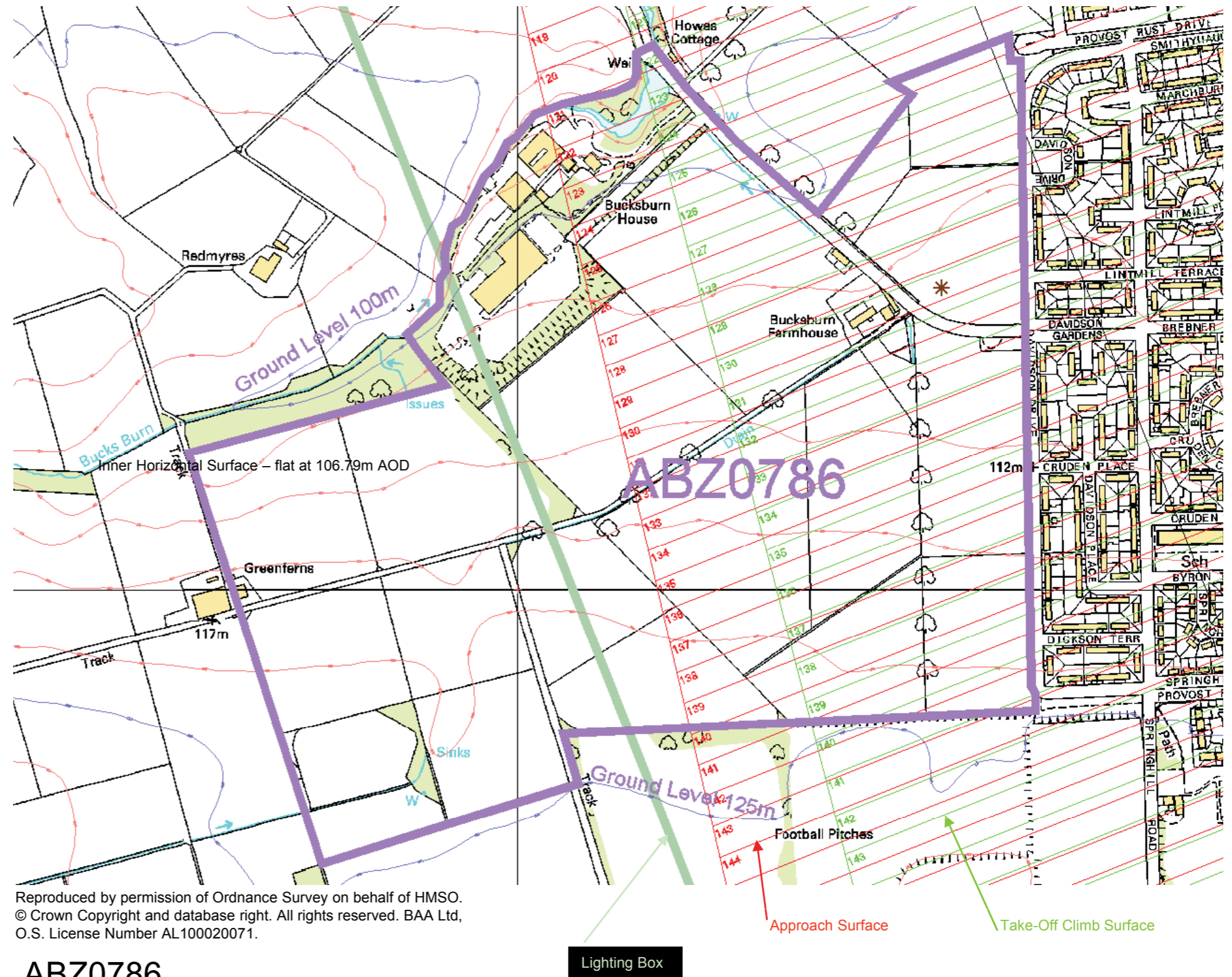
The Inner Horizontal Surface (a safeguarded surface located in a horizontal plane above an aerodrome and its environs).

The whole of the site area is covered by the Inner Horizontal Surface (IHS) which is a flat surface located at 106.79m AOD. Buildings and permanent structures should be restricted to this height. Temporary structures such as cranes can infringe the IHS to a certain extent, but will not be allowed to infringe the Approach or Take-off Climb Surfaces.

As the ground level across the site is, at its lowest, around 106m AOD, it already is the same height as the IHS.

The Lighting Box

The thick green line marked Lighting Box indicates that all of the area to the east of that line needs to have construction and completed external lighting carefully designed to ensure no lightspill above the horizontal (to ensure no dazzle or glare for pilots).



4.10 Noise

A noise impact assessment of the proposed Greenferns development has been undertaken. This included assessing the sensitivity of existing and proposed receptors and the magnitude of impact of various elements upon these receptors. In order to establish the baseline noise climate, a noise survey was undertaken between 14th and 16th June 2017 by Ramboll Environ.

Airport noise contour

Updated information has been received on the latest noise contours for 2016. Policy B4 Aberdeen Airport is clear that residential development in an area where noise levels are in excess of 57dB LAeq (the summer 16-hour dB LAeq measurement) will be refused. The plan opposite identifies the 57dB LAeq noise contour and resultant area where no residential development can be located to the north of Heathryburn School.

Construction Environmental Management Plan (CEMP)

There is a requirement to address the pollution prevention and environmental management during the construction phase as part of any future Planning Application. The applicant, through the planning submission, should systematically identify all aspects of construction site activities during these periods of works that might impact upon the environment, potential pollution risks associated with the construction proposals and identify the principles of preventative measures and mitigation.

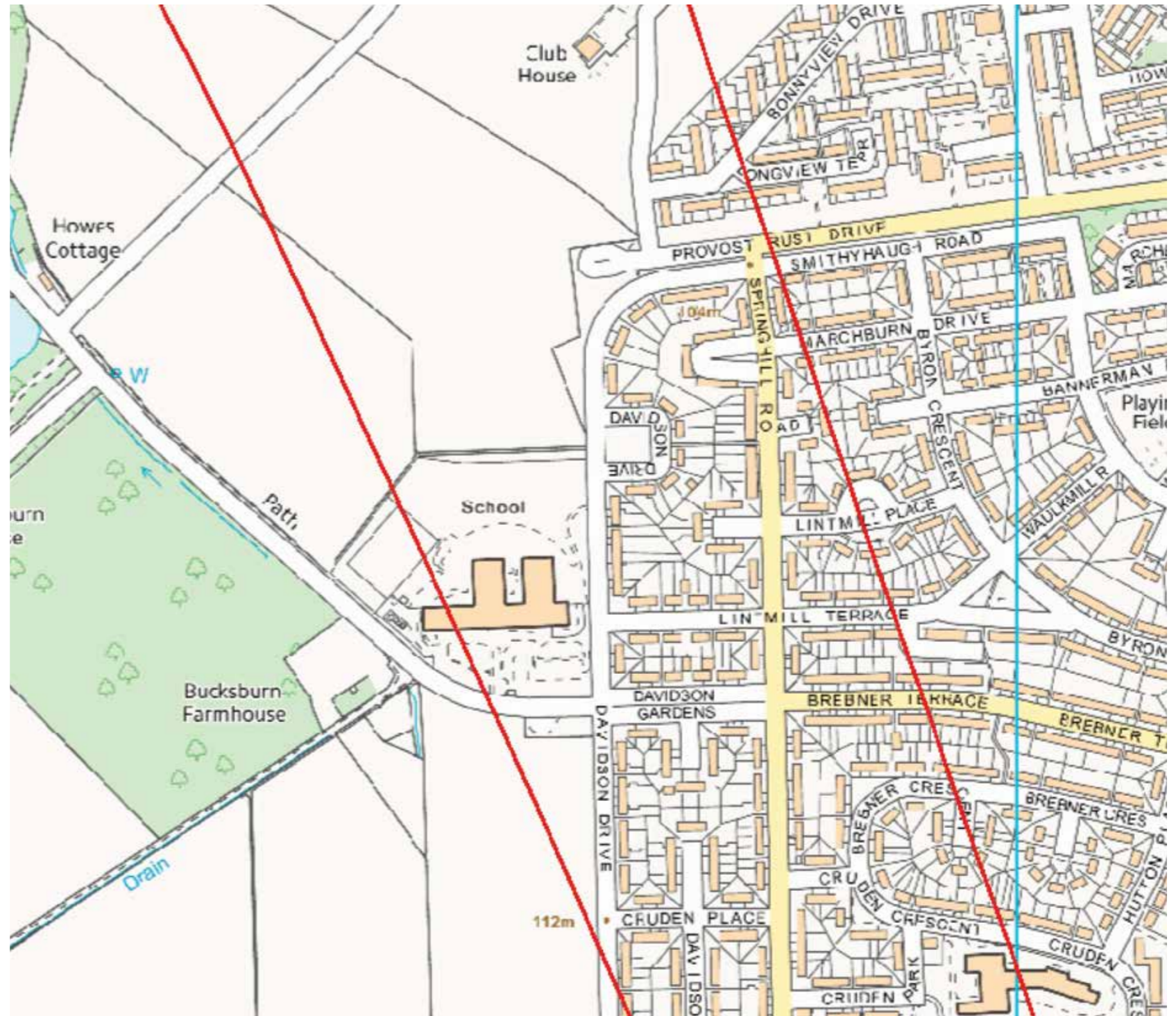


Fig. 43: Airport 57dB LAeq noise contours.

>THE VISION

THE VISION

Setting high aspirations and a strong vision have been essential drivers in the evolution of the Development Framework. Greenferns will respond to the landscape to become a clear and identifiable 'place', a place with character and a community, a place that respects the surrounding ecology and natural systems and a place which can grow and evolve as an integrated part of The City (not another suburban bolt on 'estate').

To ensure this vision is met, the principles opposite have been set to help guide the Development Framework.

THE MASTERPLANNING PROCESS

To help achieve the aims and principles set out in the Vision, the Aberdeen City Council Masterplanning process will be a key driver. Following the Development Framework the next steps will need to establish a Masterplan, following strong urban design principles, for the whole site, phases or individual plots. Any further development should understand the underlying principles that informed and inspired the overall framework.

Through the design process there have been many influences, most notably the physical aspects of the site. These are fundamental in creating a settlement that responds to site specific issues thus helping to create a unique character. Equally important is the study of precedents particularly from existing settlements in the North East of Scotland. These help to understand how historically, settlements have responded to particular local issues such as climate, topography, land use and density. These particular responses are inherent in regional architectural, spatial, and ultimately, urban character.

TO CREATE AN IDENTITY

Greenferns must become a new community on the edge of Aberdeen. It should have its own identity, influenced by the key landscape features and topography of the area, with clear and logical structure. The character of Greenferns will not be homogeneous. Across the development there will be differing density, landuse, building height and typologies which respond to the existing landscape and create a recognisable urban structure of streets and spaces. Key to the character and identity of Greenferns will be the retention, enhancement and response to key site features such as The Bucks Burn, the ridge line, existing field boundaries and ancient woodland.

TO CREATE A COMMUNITY

To establish an urban structure and land use mix that encourages the evolution of a strong and vibrant sense of community. Create a neighbourhood centre with prominent civic open space which can help to become a focus for community life. Ensure Greenferns has a diverse and mixed community with opportunities for people at all stages of the housing life cycle to choose to live and remain within Greenferns and the surrounding communities, by offering a range of types and tenures of housing.

TO ACHIEVE SUSTAINABILITY

To understand how the Development Framework can follow key principles of sustainable design and be flexible enough to allow for ever changing technologies and practices, maximising the available assets of the site.

TO GROW APPROPRIATELY

To create a Development Framework that plans for growth in a manner that has a clear phasing strategy and is flexible and adaptable enough to respond to changing market demands. Greenferns will not preclude future growth occurring, the Development Framework has evolved with the possibility of future growth as a consideration. As such the Framework aims to ensure any future infrastructure and development could become a functioning and integrated part of Greenferns. The framework has been designed to allow Greenferns to connect to its wider surroundings The Greenferns Development Framework aims to act as a precedent for any future development in the area, setting two major key principles of protecting the Bucks Burn and protecting the ridge line.

TO INTEGRATE

To create a Development Framework that provides strong strategic connections with the surrounding areas and fits with the aims and planning objectives of the Development Plan. Greenferns will not set itself apart from the surrounding communities but will seek to integrate through shared services and facilities and good pedestrian and cycle connections.

TO AID REGENERATION

To deliver a planning strategy for Greenferns that not only provides an attractive and welcoming place to live but also works with other planning objectives, to help support and regenerate the surrounding area.



Fig. 44: Sketch of proposed urban grain.

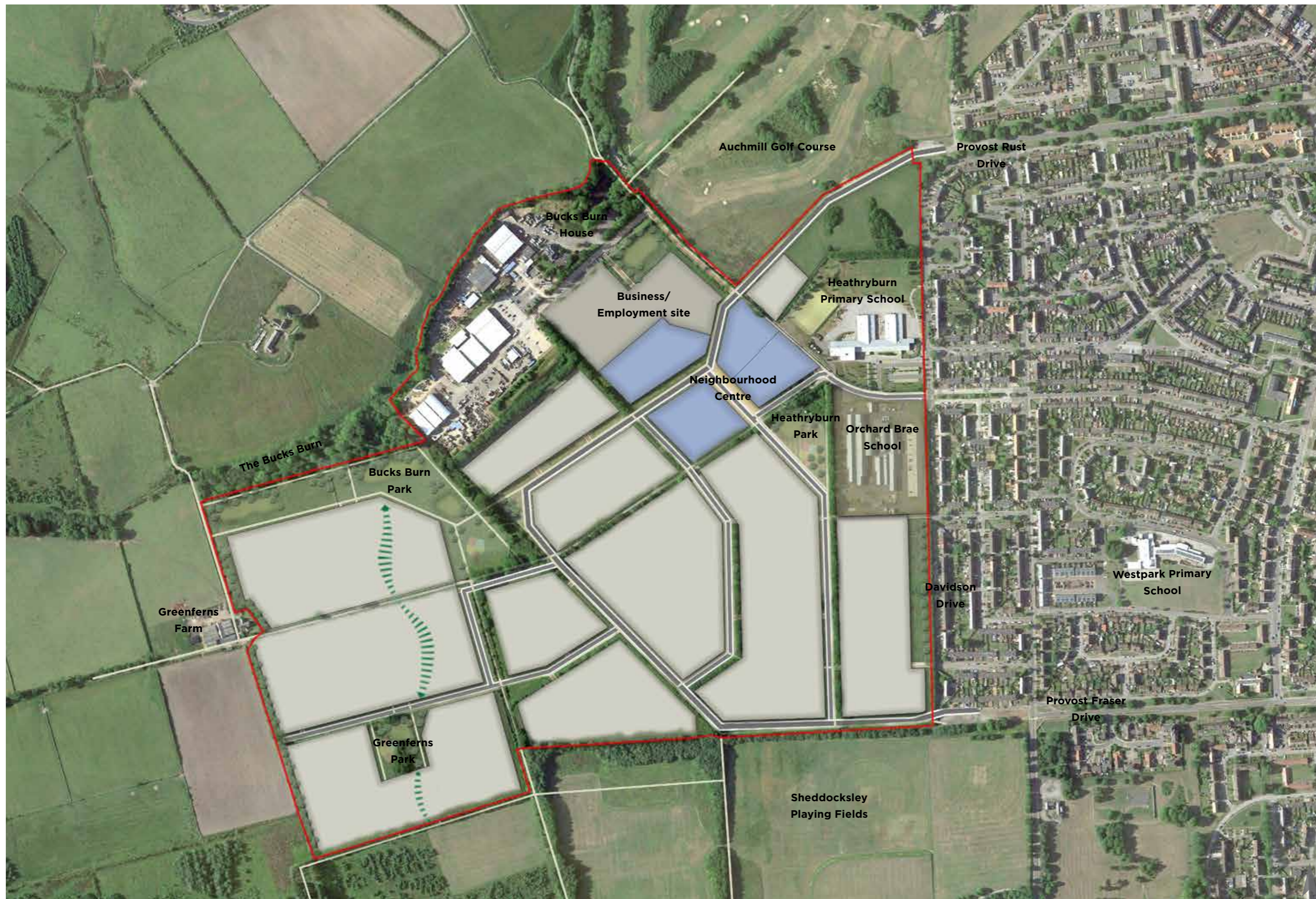


Fig. 45: The Development Framework.

Scale: 1:5,000@A3

5. The Development Framework

5.1 Purpose of the Development Framework

The Framework has evolved from an analysis and appreciation of Greenferns and its strategic and local context. It creates a co-ordinating structure which sets a strong vision for Greenferns from which more detailed design can follow. The following sections will provide a detailed breakdown of each element of the framework.

The purpose of the Development Framework at Greenferns is to guide and inform development in the wider area, ensuring Aberdeen City Council can control the quality of development coming forward. The Development Framework will describe and illustrate the layout for a sustainable urban residential area, including locations for a mixed use Neighbourhood Centre, a primary school, community facilities, employment land and key open space.

In line with the Aberdeen City Council 'Masterplanning Process' the Development Framework sets out a Vision and a spatial framework for the way in which the Strategic Housing Land Reserve at Greenferns will be developed. The Development Framework will describe and illustrate the layout for a sustainable urban residential area for around 1,500 houses, it has established a range of 1,254 to 1,650 houses depending on the density range.

This section of the document is intended to;

- Establish a clear and exciting future vision for Greenferns;
- Provide a clear and comprehensive spatial framework that describes how the site is intended to be developed;
- Describe and explain the integrated land-use, landscape and transport proposals;
- Set out a clear phasing strategy.

This will provide a framework for innovative urban design solutions which will be developed in later tasks either through design codes or briefs before detail layouts can be brought forward.

The Development Framework must be robust and viable enough for Aberdeen City Council to support and direct the form of development at Greenferns through discussions with concerned stakeholders. In creating the Development Framework a number of supporting studies have been completed to date as part of the masterplanning process, providing technical robustness for the Masterplan. These have been appended to this document and include, an initial Transport and Accessibility Assessment, Noise Assessment, Ecological Assessment, Landscape and Visual Impact Assessment and a Drainage Assessment.

5.2 Previous Development Framework (2009)

The previous Greenferns Development Framework, figure 46, established principles for the creation of a residential-led mixed use development of approximately 1,250 residential units, supporting retail, service and community uses and employment land.

The following section presents the updated Development Framework which has been prepared in accordance with The Aberdeen Masterplanning Process: A Guide for Developers. In general the principles of the adopted Development Framework remain however a number of changes to the Development Framework have been required to be incorporated in the updated version. The key changes to the Development Framework include:

- Provision of additional land for Enermech (industrial land) to remain on the current site around Bucksburn House and land for future expansion.
- Inclusion of the new Orchard Brae school, off Howes Road within the layout.
- Review of non-residential land uses within the neighbourhood centre.
- Review of the location of the proposed neighbourhood centre within the layout.
- Review of the proposed densities and phasing strategy.
- Review of the size and location of areas of public open space.
- No residential development within the area where noise levels are in excess of 57dB LAeq.

Further detail on the required alterations is contained within the following sections of this document.



Fig. 46: Previous Development Framework (2009)



Fig. 47: Community Exhibition, August 2017.

6. Community engagement

6.1 Consultation and Engagement

In accordance with the Council's Masterplanning Process and the requirements of the Council officers Scoping Report for updating the Greenferns Development Framework, public consultation has been undertaken as part of the review of the development framework. This is an important part of the process which allows people to engage and contribute to the Greenferns proposals and keeps them informed of progress.

The main focus for the community engagement was the holding of a public consultation event to consider the draft development framework. The event was held in Northfield Community Centre, Byron Square, Northfield a central and accessible location for the local community who live close to Greenferns. The event was held on Tuesday 22 August 2017 and ran from 2pm to 8pm. Members of the Design Team and Places for People were on hand throughout the day to answer questions and discuss the proposals for Greenferns with members of the local community and other interested parties. An exhibition was on display at the consultation event which included background on the proposals, plans and photographs of the site, key changes from the previous proposals and details of the updated draft development framework, the vision, delivery and phasing. Comments forms were also available and people were encouraged to fill them in to help inform the development of the proposals.

The public consultation event was publicised through an advert in the Aberdeen Evening Express, the displaying of posters at prominent locations throughout the Northfield, Mastrick and Heathryfold Areas and personal invites sent out to a range of community groups, local politicians, Council officers and other public bodies and interested parties. Copies of the Consultation Boards and comments forms were also made available at Northfield Library and online on the Council's web site on the Consultation Hub. People were given until 22 September 2017 to respond with comments on the proposals.

Twenty five people attended the consultation event and nine completed comments forms were returned. Information and comments were also disseminated to members of the Design Team in discussions held at the event.

In addition to the public consultation event, meetings were also held with EnnerMech Group Limited, a major employer located at Bucksburn House within the development framework area. Representatives of EnnerMech attended the public consultation event and representations were submitted by the company on the draft development framework.

The main feedback received following the community engagement process and the meetings with EnnerMech highlighted the following issues.

Affordable Housing

Strong emphasis was placed by a number of those that attended the event that affordable housing should be affordable to all members of the community. In this respect it might better be described as social/council housing. If this was to be provided at Greenferns this could help cut the Council housing waiting list.

Employment

Despite the recent downturn in the oil and gas industry EnnerMech is committed to their base in Aberdeen and wish to construct their new global headquarters building and expand the workshop and storage facilities at their campus on Howes Road. In order to achieve this the company require more land and welcome the 6 acres identified in the development framework for their expansion proposals. Their preference is for option 1 which provides the opportunity for their new office building to have a prominent location on the Primary Street within the overall development.

Transportation

Concerns were expressed about the increase in traffic that would be generated by the proposals for the local area, in particular Howes Road and Springhill Road. In this respect there will be a need for additional pedestrian crossings and lollipop personnel. There could also be a deterioration in air quality as a result of the increase in traffic. The opening of a new link road from Provost Rust Drive and Provost Fraser Drive will help ease the traffic outside Heathryburn Primary School and Orchard Brae School, especially in terms of removing the HGVs that currently use Howes Road. The early phasing and delivery of the link road from Provost Rust Drive to Howes Road is strongly supported by EnnerMech for these reasons. The company would also wish to have further discussions with the Council over potential upgrading works for access into their campus from the Primary Street via Howes Road to ensure that the access is suitable for HGV movements.

Education

It was considered that Heathryburn Primary School was already close to capacity and would struggle to accommodate the proposed 1500 new houses at Greenferns. A new primary school will be required and consideration also needs to be given as to whether there is sufficient secondary school capacity at Northfield Academy.

Community and Medical Facilities

The need to provide another community centre was questioned as there are already 5 other such facilities in the area which are under-utilised. The sustainability of a new medical centre was also questioned, partly from a staffing point of view.

Environment

Concern was expressed about the development proposals resulting in a loss of greenspace, rights of way, footpaths and the detrimental impact on wildlife. There was a desire to see the trees, hedge and stone wall retained along Davidson Drive and that it should be houses and not flats built in the fields opposite Davidson Drive. EnnerMech also wished to ensure that the SuDS/Open Space area identified at the entrance to their site, for public safety reasons be identified as an open space drainage area within the EnnerMech campus and not accessible to the public. The company would look to see the area designed as part of a gateway feature so that it is an attractive area for those visiting or working within their site as well as benefiting the wider area.

Uses

With regard to the proposed residential development in areas C2 and I, EnnerMech would wish the detailed design and layout for these areas to have regard to the adjacent operations so that the mixed uses can sit comfortably together.

General

How is the proposed development to be funded? What will be the impact on the Council's budget?

The event could have been better publicised.

Support

General support was expressed by a number of those who attended the consultation event for the updated proposals and changes to the development framework and, the beneficial impact they would have on the area.

GREENFERNS, ABERDEEN

Community Consultation Event - August 2017



WELCOME

INTRODUCTION
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.

CURRENT PLANNING POSITION
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.

PURPOSE OF CONSULTATION
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.

THE SITE

SITE LOCATION
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



PREVIOUS PLAN

THE ADOPTED DEVELOPMENT FRAMEWORK 2016
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



KEY CHANGES TO THE PROPOSAL

KEY CHANGES TO THE PROPOSAL
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



Fig. 48: Community exhibition board 1, August 2017.

Fig. 50: Community exhibition, August 2017.

GREENFERNS, ABERDEEN

Community Exhibition Event - August 2017



THE DEVELOPMENT FRAMEWORK

THE DRAFT DEVELOPMENT FRAMEWORK
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.

LAND USES
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.

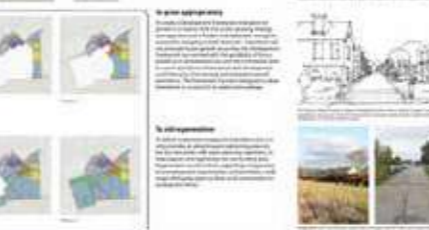


Housing types and mix
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



THE VISION

THE VISION
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



DELIVERY

SHAPING ABERDEEN HOUSING LLP
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



WHAT DO YOU THINK?
The Aberdeen City Council is pleased to have been selected as a national exemplar of best practice in community consultation. The Aberdeen City Council has been selected as a national exemplar of best practice in community consultation.



Fig. 49: Community exhibition board 2, August 2017.

Fig. 51: Community exhibition, August 2017.

6.2 Response to Comments

One major difference from the public consultation undertaken on the development Framework prepared in 2009 and the current development framework is the general acceptance now of the principle of development at Greenferns, a reflection of the allocation of the site for development in the 2008 Local Plan and the 2012 and 2017 Local Development Plans. Other issues raised are similar to those raised in 2009, principally concerns expressed about affordable housing, increased traffic and the relationship of the development to the housing on Davidson Drive. A response to the comments raised is considered below.

Affordable Housing

Affordable housing at Greenferns will be provided to meet the Council requirement of at least 25% and will be spread throughout the development. The delivery of much of the housing at Greenferns, including the affordable units will be through the body Shaping Aberdeen Housing LLP a joint venture partnership between Aberdeen City Council and Places for People. This body is designed to build, own and manage housing for rent targeted at a range of needs, including key workers and, deliver a range of housing for sale including low cost home ownership.

Employment

The expansion of the existing employment use at Bucksburn House is welcome both from the perspective of Greenferns being a sustainable mixed use development and the consolidation and increase in employment in the area. It is estimated that the expansion of the EnnerMech campus could see an additional 350 jobs created over the next 10 years.

Transportation

A Transport Assessment has been prepared to support the updated development framework. This identifies the mitigations and interventions required to address the traffic impact of the development proposals. This will include if appropriate new pedestrian crossings. It will also take into consideration air quality issues and seek to ensure rights of way are protected and that all new footpaths and cycleways are integrated into the existing network. The development framework will seek to prioritise the implementation of the new link road connecting Provost Rust Drive to Howes Road to take HGVs away from driving past the two schools and through existing residential areas as currently happens. EnnerMech are willing to work with the Council on the early delivery of the new link road as they wish to progress quickly on the expansion to their campus at Bucksburn House.

Education

Aberdeen City Council's Education Service has been consulted as part of the review of the development framework. Heathryburn Primary School is currently at capacity and is forecast to remain at capacity for the next five years. It may be necessary therefore to extend Heathryburn to cater for the first phases of housing at Greenferns. There is also spare capacity at the nearby Westpark Primary School at Cruden Crescent in Northfield which will serve some of the new housing development at Greenferns. In terms of Northfield Academy there is considerable spare capacity at the current time which will reduce only slightly over the next five years. If additional capacity is required in the future as a result of the Greenferns development, Northfield Academy can be extended required.

Community and Medical Facilities

The comments on the availability of community facility provision in the area are noted and it will be important for the Council and Places for People to work closely with community planning officers and local community groups to establish what is required in the area and if that should be provided onsite at Greenferns or at existing community facilities elsewhere in the area. The requirements for new medical facilities is determined by NHS Grampian. An ongoing dialogue will be maintained with them to ensure that sufficient provision has been made in the development framework for future healthcare requirements and the timing of that provision.

Environment

Environmental consultants are an integral part of the Design Team appointed to work on the updating of the development framework. Their input is important along with the landscape designers in ensuring the protection and enhancement of the existing footpath network, the protection of wildlife and the creation of new open spaces and parks at Greenferns. It is agreed on the grounds of public safety that the SuDS/Open Space area at the entrance to the EnnerMech Campus should have a passive and decorative role rather than be used as an area of public open space. It is in any case, located on the edge of the Greenferns proposals, somewhat detached from the proposed housing.

The need for the retention and enhancement of a landscaped buffer area between the existing housing on Davidson Drive and the Greenferns proposals is recognised. This will be reflected in the finalised development framework.

Uses

The importance of ensuring that the employment uses at EnnerMech and the proposed housing can be good neighbours is recognised. This will be reflected in the finalised development framework.

Other

The funding and delivery of the Greenferns proposals will be the responsibility of Shaping Aberdeen Housing LLP. The partnership between the Council and Places for People have a five year business plan and loan facility in place

With regard to publicity the period for accepting comments on the draft development framework was extended from 8 September 2017 to 22 September 2017 to allow people more time to comment.

6.3 Moving Forward

The suggestions and ideas for the consultations undertaken have been considered by the Design Team. These have helped shape the emerging ideas for the review of the Greenferns Development Framework. Further opportunities for community engagement will be available when planning applications for the development are consulted on.

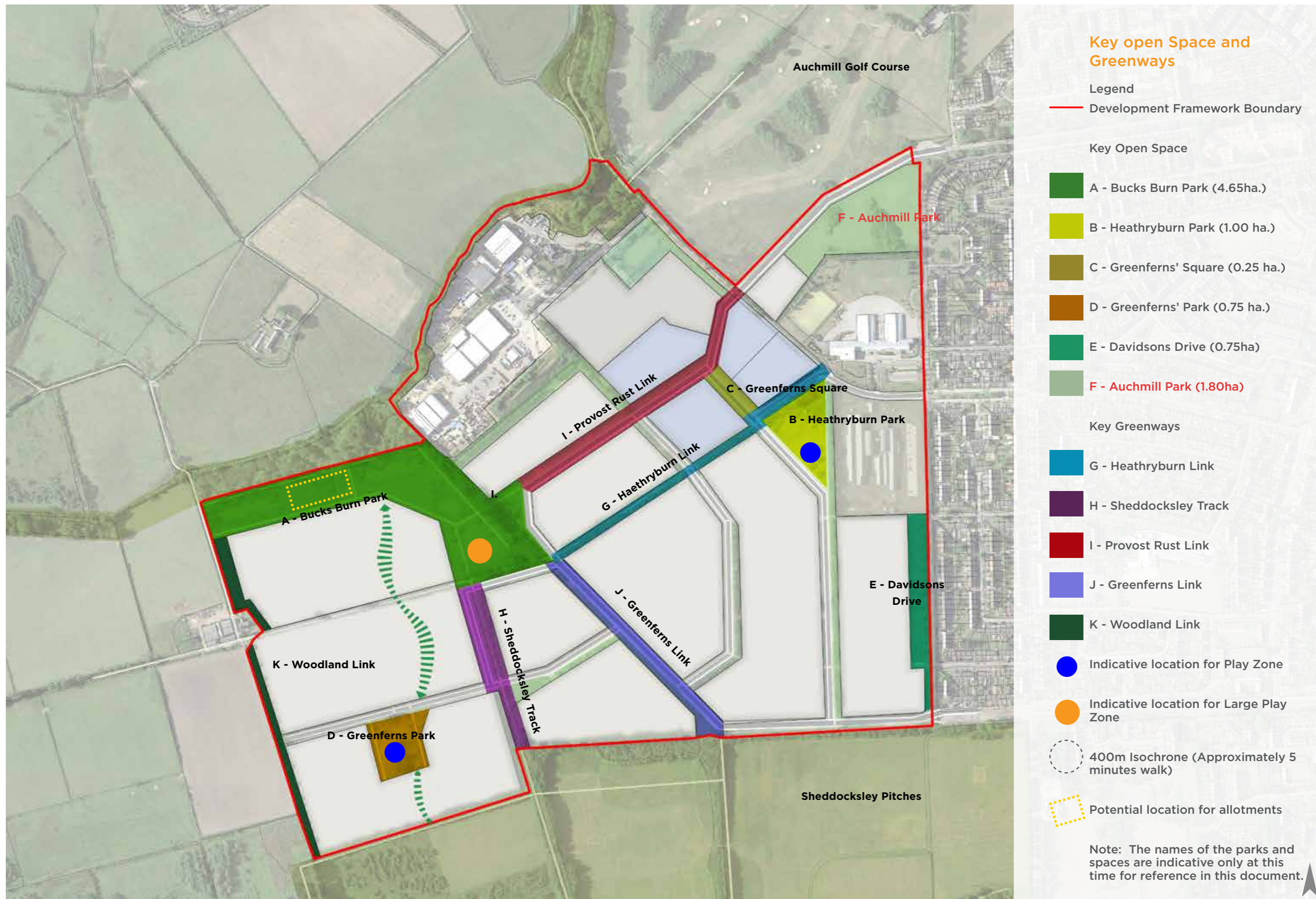


Fig. 52: Open Space Framework.

Scale: 1:5,000@A3

7. Open Space and Greenways

7.1 Open space

The Development Framework for Greenferns has aimed to provide a variety of open spaces complementing the areas and types of open space provided in surrounding areas. The open space opposite, which takes account of the existing programmed open space at Sheddocksley to the south and the importance of the Bucksburn (LNCS) as an ecological resource has provided a key factor in shaping the form and layout of the Development Framework.

7.2 ACC Open Space Audit

The findings from the Open Space Audit have been used to develop the revised standards for the provision of new open space. These are designed to encourage more useful, relevant and efficiently managed open spaces, of the right type and in the right place.

The Landscape Framework has been specifically developed with consideration of the proximity of Sheddocksley Park and Bucks Burn Gorge (LNCS) both of which are identified as 'areas of open space >2.0ha' within the City. Sheddocksley is identified as an outdoor sports area with play space and the Buck Burn Gorge (LNCS) as an area of Natural Greenspace.

Auchmill Golf Course (Outdoor sports area) and Eric Hendrie Park (Neighbourhood Open Space and play space) also have catchments which cover parts of the site area.

These existing areas of open space are located either side of the Greenferns development meeting the accessibility criteria of the ACC standards for many of the types of open space required. Therefore the Landscape Framework focuses on providing good connections to these existing high quality areas of open space for the proposed community and visitors alike, contributing to their improvement.

Given the proximity and good connections provided to Sheddocksley Park there is no requirement to provide outdoor sports areas within the site. There must however be sufficient, meaningful neighbourhood open spaces provided, which meet the criteria for the Open Space Strategy.

7.3 ACC Green Space Network

Aberdeen's Green Space Network (GSN) is identified in the Local Development Plan (Policy NE1) to protect, promote and enhance designated natural heritage sites, connectivity between habitats, open spaces and opportunities for physical activity and access to the outdoors.

The site at Greenferns benefits from a quality Greenspace Network in the surrounding areas containing a range of habitat types (Source: Aberdeen City Council 'In My Area' GIS Resource).

GSN Site 26, Auchmill/Bucksburn Gorge, is a Core GSN site connecting Bucks Burn Gorge, Burnbrae Moss (Bucksburn LNCS), and Den of Moss-Side LNCS. The major habitat types of the GSN are Coniferous and broadleaved woodlands, lowland mixed deciduous forest, neutral and improved grasslands, standing open waters (priority habitat which define the northern boundary of the site). The site provides opportunities for recreation through walking and also opportunities for ecological improvements.

To the south and west of the site area GSN area 31, Kingswells South, Sheddocksley, Maidencraig, provides another Core GSN site. The site connects Bucksburn Gorge (part of Bucksburn LNCS), LNCS Den of Maidencraig and LNR, and North Burn of Rubislaw (Part of Rubislaw LNCS). The site consists of farmland, semi natural grassland and a public park which present opportunities for habitat improvements and enhancement.

7.4 Provision

Following Policy NE4 (Open Space Provision in New Development) The Council will require the provision of at least 2.8ha per 1,000 people of meaningful and useful open space in new residential development.

Initial development figures for the site (see page 79) suggest an number of residential units between 1254 and 1650. Given an average occupancy of 2.5 people per unit this would give a requirement for between 8.77 hectares and 11.55 hectares of open space.

The development framework includes;

- 9.20 hectares of key useable open space.

In addition to the useable greenspace there are areas of woodland, Greenways and existing woodland areas surrounding Bucksburn House which do not count towards the formal open space provision.

The site therefore meets the quantity requirement for open space at the lower range development scenario. Although the site does not provide the full requirement for the mid or upper range, it was discussed with ACC that the quantity is not the major concern on the proposed site. It's the quality of existing spaces that allow communities and residents to use these open spaces regularly. Therefore financial contribution towards the improving the quality of existing open spaces adjacent to the site in addition to the formal provision may be required as part of the development. The contribution required should be assessed as part of any future Planning Application. The existing open spaces which could benefit in terms of improving the quality of open spaces are sites identified as AN30 Sheddocksley Football Field to the south of the development AN118 Greenferns Community Woodland and site AN79 Bucksburn House towards north east of the development



Fig. 53: Greenferns Community Woodland.



Fig. 54: Sheddocksley Sports Pitches.



Key open Space

Legend

— Development Framework Boundary

■ Key Open Space

■ Civic Space

■ Greenways

A Bucks Burn Park (4.65 ha.)

B Heathryburn Park (1.00 ha.)

C Greenferns' Square (0.25 ha.)

D Greenferns' Park (0.75 ha.)

E Davidsons Drive (0.75ha)

F Auchmill Park (1.77ha)

▨ Woodland Edge

● Indicative location for Play Zone

● Indicative location for Large Play Zone

▭ Potential location for allotments

— Opportunity to integrate open space and SuDS within block layout to connect areas of open space

Note: The names of the parks and spaces are indicative only at this time for reference in this document.

Fig. 55: Open Spaces.

Scale: 1:5,000@A3

7.5 Key open space

As there is a good provision of natural green space in the surrounding area the development aims to provide well located meaningful and functional open space that could be used by the surrounding communities.

Location

Location of key open space has been strategically planned to:

- Provide a contrast to the type of open space provided at the Sheddocksley Pitches.
- Take account of existing site features and vegetation.
- Ensure good access to a variety of recreational opportunities for all future residents.
- Strengthen and enhance ecological networks.
- Integrate with the proposed key path network.
- Aid integration with existing communities.
- Allow development to face on to spaces, increasing value in both price and amenity.
- Assist SuDS principles.

Type

The Greenferns Development Framework has been designed with reference to ACC's Open Space Supplementary Guidance (SG), which sets out the type, quantity, accessibility and quality of open space to be provided by new development. Spaces are assigned a type according to scale:

- Major;
- Neighbourhood; and
- Local.

and a category according to use:

- Play zone/Other play areas and Large Scale Play Zones;
- Outdoor Sports Areas;
- Natural Greenspace and Green corridors; and
- Allotments or Community Gardens.

It notes however that:

'Each development does not necessarily need to incorporate all four categories of green space. The categories provided will depend on the type and scale of development proposed and local conditions. If for instance there is considered a good supply of one type of green space in a locality, it may be appropriate to substitute another type instead.'

Given the proximity of the Sheddocksley sports pitches and playing fields provided directly to the south of the site, the Development Framework does not make a provision for this type of open space. Instead it proposes that more emphasis is placed on providing the other three types.

Size and Number

The plans and text on the following pages identify the hierarchy of spaces and their functions at Greenferns. The location, size and type of the spaces varies across the site to ensure appropriate levels of good quality and accessible open space provision for all members of the community. In a number of circumstances the spaces and Greenways combine to provide a network connecting to the wider context.

The Development Framework proposes one large Neighbourhood Open Space and three Local Areas of Open Space rather than more numerous smaller spaces. This approach has been taken to provide the following benefits:

- Ability to create meaningful habitat and ecological corridors.
- Create meaningful and usable open space.
- Allow more efficient maintenance.

A Major Area of Open Space has not been provided within the Greenferns Development Framework as the scale and function of such a space would not be appropriate to the location.

Civic spaces

In addition to the Neighbourhood and Local Areas of Open Space a 'Civic Spaces' has also been identified. This is to be located within the Neighbourhood Centre. The space should be more formal and be located within the development structure at a key nodal points in association with areas of mixed use development. Where the street pass through or adjacent to the civic space it must do so in a sensitive manner, adding to the sense of place and integrating with the space rather than cutting through it.

Play Zones

One large Play Zone has been identified in the southern part of the Bucks Burn Park. In addition two further play zone areas have been identified in the Framework which between them will measure over 0.6 hectares to meet the requirement. They are distributed evenly throughout the development and all residents are within 400m of a play zone or large play zone identified within the framework.

7.6 Character

In response to the underlying influencing factors on the site, five key areas of open space have been identified. These aim to establish differing character areas throughout the site.

A: Bucks Burn Park

A Neighbourhood Park providing a strategic role as part of the GSN, strengthening and protecting the Bucks Burn, incorporating the Bucksburn Gorge LNCS and ancient woodland. To accommodate SuDS provision and path networks linking with Aberdeen City Core Paths. The opportunity to accommodate allotments should be explored as there is no provision within the vicinity of the development so providing allotments would benefit both the development itself and the wider community.

B: Heathryburn Park

A Local Park, retaining existing vegetation and providing an arrival point within Greenferns. Helping the new development connect with Northfield and Heathryburn School.

C: Greenferns' Square

A high quality civic space, with flexible ground floor units allowing retail opportunities. Capable of hosting events and celebrations and providing a vibrant hub for the new development.

D: Greenferns' Park

A Local Park with an ecological bias, retaining existing vegetation and providing SuDS facilities.

E: Davidsons Drive Park

A Local Park providing an attractive entrance to the site from Davidson Drive. The space will provide an attractive interface between the existing and new residential areas, providing new connections and helping with integration of the communities.

F: Auchmill Park

A Local Park which would look to provide an attractive entrance to Greenferns and integrate with the existing areas of open space to the north and east. Connections to Heathryburn School could also be explored.

The design of the public open spaces should recognise the potential to enhance existing habitats for wildlife. The site could be a key location for habitat enhancement and creation, and appropriate tree/shrub species should be used to maximise the benefits to wildlife where appropriate.

A: Bucks Burn Park

Size

- 4.65 ha.

Type

- Neighbourhood Open Space
- All residents within 600 metres (around 10 minutes walk) of a Neighbourhood Open Space.

Function of Open Space

- To include location for a Large Play Zone.
- Informal Play/Amenity Open Space.
- Natural Green Space and Wildlife Corridor.
- To accommodate SuDS facilities.
- Protect and enhance the existing ancient woodland.
- Accommodate footpath / cycleway link from Kingswells to Bucksburn.
- Increase property value by attractive prospect.
- Opportunity to provide a site for allotments to be considered. The location and design of the allotments will need to be carefully considered within the park and next to the LNCS.
- Provide improved arrival space to Business / Light industry site at Bucksburn House.

Existing Features to be retained where possible

- Ancient Woodland
- Existing trees and field Boundaries.
- The Bucks Burn
- Existing ditches and watercourses

Design principles

1. The park is intended to have a gradient in character from wild/natural and wooded by the Bucks Burn running to more open and amenity space on the edge of the development.
2. Properties on the edge of the Bucks Burn Park must address the park.
3. SuDS facilities must be designed as an integral part of open space.
4. The Bucks Burn Park should be enhanced to create more natural habitat and improving water quality along with providing benefits to reduce risks of flooding and surface water runoff. The functionality of SuDS as an open space should be demonstrated at the detailed design stage showing its community value.
5. The park should contain large areas of undisturbed habitat increasing its ecological value.
6. The Play Zone should be located to the south east away from the Bucks Burn and close to the residential areas.
7. Opportunity to integrate open space and SuDS within block layout to connect areas of open space (not included within park area).



Fig. 56: Bucks Burn Park Concept.



Play Facilities



Parkland character adjacent to development



Wilder character adjacent to Bucks Burn. Park to include SuDS facilities.

Artist's Impression of Bucks Burn Park

"An extension of the Bucks Burn Gorge Local Nature Conservation Site, enhancing ecological and open space networks, connecting Kingswells to Bucks Burn and providing opportunities for cleansing and controlling water discharge into the Bucks Burn."



Fig. 57: Artist's Impression of Bucks Burn Park.

B: Heathryburn Park

Size

- 1.0 ha.

Type

- Local Open Space
- All residents within 400 metres (around 5 minutes walk) of a Local Open Space.

Function of Open Space

- To include location for a Play Zone.
- Informal Play/Amenity Open Space.
- Natural Green Space
- Increase property value by attractive prospect.
- Accommodate SuDS facilities.
- Provide open space for the adjacent schools.

Design principles

1. Properties on the edge of Heathryburn Park must address and overlook the space, providing an element of natural surveillance and policing.
2. The neighbourhood centre to the north must be designed to address the park with clear and safe access points.
3. Good road crossing facilities must be designed in association with the park, providing easy access to the Neighbourhood Centre and Heathryburn School.
4. Where possible existing trees should be retained, becoming an integral part of the park and its character.
5. Ensure good pedestrian links to Northfield, helping increase integration between the existing community and new development.
6. SuDS facilities must be designed as an integral part of open space.



Fig. 58: Heathryburn Park Concept.



Development to address park.



Ensure good pedestrian crossings from the park to Heathryburn School.



SuDS Facilities incorporated within park.

Artist's Impression of Heathryburn Park

"A Local Area of Open Space, retaining existing vegetation and providing an arrival point within Greenferns. Helping the new development connect with Northfield and Heathryburn School."



Fig. 59: Artist's Impression of Heathryburn Park.

C: Greenferns' Square

Size

- 0.25 ha.

Type

- Local neighbourhood centre

Function of Open Space

- Create a civic setting and identity.
- Provide a flexible space able to accommodate for cultural events, celebrations and markets.
- Provide a meeting place.
- Provide a specific designed off street bus stopping area.

Design principles

1. High quality design, materials and quality.
2. Ensure high connectivity and permeability to surrounding area.
3. Ensure clear legible routes to surrounding bus stops.
4. Provide flexibility within surrounding buildings to accommodate active ground floor uses.
5. Provide associated parking.
6. Create clear links connecting to Heathryburn Park and both the schools.
7. Create clear links with the business site to the north.
8. Provide the main civic space within Greenferns. The space should be designed to be flexible and allow for a wide variety of community uses.
9. Include street trees
10. Incorporate some on street parking (the majority of parking should be located within rear courtyards).
11. The bus hub/bus stopping area should be designed as an integral part of the neighbourhood centre.
12. Lighting should be a key feature of the space.
13. Public art should be incorporated in to the design of the space.



Fig. 60: Greenferns Square Concept.



Small public space.



Opportunities for cafe / restaurant uses and spill out. Flexible ground floor units allow neighbourhood centre to evolve.



Old Aberdeen.



Fig. 61: Artist's Impression of Greenferns Square.

D: Greenferns' Park

Size

- 0.75 ha.

Type

- Local Open Space
- All residents within 400 metres (around 5 minutes walk) of a Local Open Space.

Function of Open Space

- To include location for a Play Zone.
- Informal Play/Amenity Open Space.
- Natural Green Space
- Accommodate SuDS facilities.
- Increase property value by attractive prospect.

Design principles

1. SuDS facilities must be designed as an integral part of open space.
2. Properties on the edge of Greenferns Park must address and overlook the space, providing an element of natural surveillance and policing.
3. Where possible existing trees should be retained, becoming an integral part of the park and its character.
4. Ensure good pedestrian links to Sheddocksley.
5. Retain existing drainage channel and develop it into an integrated linear SuDS feature linking Greenferns Park and Bucks Burn Park (not included within park area).



Fig. 62: Greenferns' Park Concept.



Integrated linear SuDS (Lamb Drove, Cambourne, Cambridgeshire)





Fig. 63: Artist's Impression of Greenferns Park

E: Davidson Drive Park

Size

- 0.75 ha.

Type

- Local Open Space
- All residents within 400 metres (around 5 minutes walk) of a Local Open Space.

Function of Open Space

- To include location for a Play Zone.
- Informal Play/Amenity Open Space.
- Natural Green Space
- Increase property value by attractive prospect.
- Provide a link between new and existing developments

Design principles

1. Linear area of open space linking the new and existing developments and providing an interface between the two.
2. Provide a safe and attractive entrance to the site from Davidson Drive.
3. Retaining existing wall and hedgerow along Davidson Drive to form the eastern edge of the park.
4. Housing along the western edge to front the new open space providing natural surveillance of the open space.



Fig. 64: Davidsons Drive Park Concept.





Fig. 65: Artist's Impression of Davidsons Drive



Greenways

Legend

- Development Framework Boundary
- Key Open Space
- Civic Space
- Greenways
- G** Heathryburn' Link
- H** Sheddocksley Track
- I** Provost Rust Link
- J** Greenferns Link
- K** Woodland Link

Note: The names of the parks and spaces are indicative only at this time for reference in this document.

Fig. 66: Greenways.

7.7 Greenways

The Development Framework has sought to retain and enhance the existing field boundaries, tracks, walls and trees as an integral part of the layout. These features should be retained where possible to add character and maintain the linkages with the wider green space network and not create complete fragmentation of habitats. The natural features such as green corridors and existing line of trees linking ancient woodlands should be maintained to provide wider connectivity when combined with pedestrian routes.

The Greenways are formal landscaped areas which will add to the general amenity of the area, however, according to open space quality criteria and quality standards they do not contribute towards the formal open space requirement or provision. As such it is important these provide connections to the key areas of open space and existing areas of open space which will provide meaningful and functional open space that could be used by the communities.

Location

The location of the Greenways has been strategically planned to:

- Take account of existing site features and vegetation.
- Ensure good access and connections across the site and promote healthy travel.
- Create an attractive network of routes.
- Create safe routes to school.
- **Strengthen and enhance ecological networks through planting of appropriate trees and shrubs.**
- Integrate with the proposed key path network.
- Aid integration with existing communities.
- Assist SuDS principles

Character

The Greenways are linear features which cross the site, these will where possible retain the existing features around which they are based. The five Greenways are listed opposite, more detail regarding the Heathryburn' Link is described on the following pages.

Existing trees

Development should not take place within the root protection areas and the zone of influence of existing trees and newly planted trees.

The proposed Greenways offer an opportunity to retain the existing tree lined field boundaries in certain locations. These can create high quality green corridors to link proposed and existing corridors and areas of woodland. In addition to maintaining existing trees and features, such as walls and drainage ditches, consideration should be given to the design and width of the Greenways to allow the incorporation of further planting and successional street tree planting. Street tree planting will be considered in all appropriate locations.

In line with Policy NE5 and ACC Tree and Woodland Supplementary Guidance, any development adjacent to existing trees should be carried out in accordance with BS 5837:2012 'Trees in relation to construction.

A detailed Tree Survey, Tree Protection Plan and Woodland Management Plan should be undertaken prior to any future Planning Applications.

F: Heathryburn Link

A linear space incorporating the eastern section of the existing track from Howes Road to Greenferns Farm. This will provide a strategic safe link between the Bucks Burn Park to the west and the neighbourhood centre, schools and Heathryburn Park to the east.

G: Sheddocksley Track

This existing section of track will be retained providing a key link from Sheddocksley to Greenferns via the Sheddocksley Playing Fields. Additional planting will also be incorporated helping to create a green link towards Bucks Burn Park.

H: Provost Rust Link

A cycle and pedestrian route adjacent to the Primary Street, connecting The Bucks Burn Park east to Provost Rust Drive. The green space should provide a frontage to the business areas to the north and location for some SuDS.

I: Greenferns' Link

This existing section of track will be retained adjacent to the Primary Street and provide a key pedestrian link from Sheddocksley Playing Fields to Bucks Burn Park. The existing trees must be retained where possible to add character.

J: Woodland link

The western edge of the development area must be defined by a structural woodland belt. Following the alignment of the existing field boundary the woodland will connect the Greenferns community woodland to the south of the site to the Bucksburn LNCS (Bucks Burn Park) to the north. The woodland link should be designed to incorporate any existing field boundary features and existing trees, it must also provide a footpath connecting the community woodland, park areas with the wider residential area.



Fig. 67: Existing Sheddocksley Track.



Fig. 68: Greenferns Track.



Fig. 69: Greenferns community woodland.

E: Heathryburn Link

Function of Open Space

- Natural Green Space and Wildlife Corridor.
- Accommodate SuDS facilities.
- Create pedestrian / cycleway link between Neighbourhood Centre, schools and Bucks Burn Park.

Design principles

- Properties on the edge of the Heathryburn Link must address and overlook the space, providing an element of natural surveillance and policing.
- Regular connections into the Greenferns Link should be provided through surrounding development.
- Good road crossing facilities must be designed in association with the link ensuring it is a safe and easy route to use.
- Existing trees and stone walls should be retained and enhanced, becoming an integral part of the Link and its character.



Fig. 70: Greenferns Link Concept.



The existing Greenferns Track



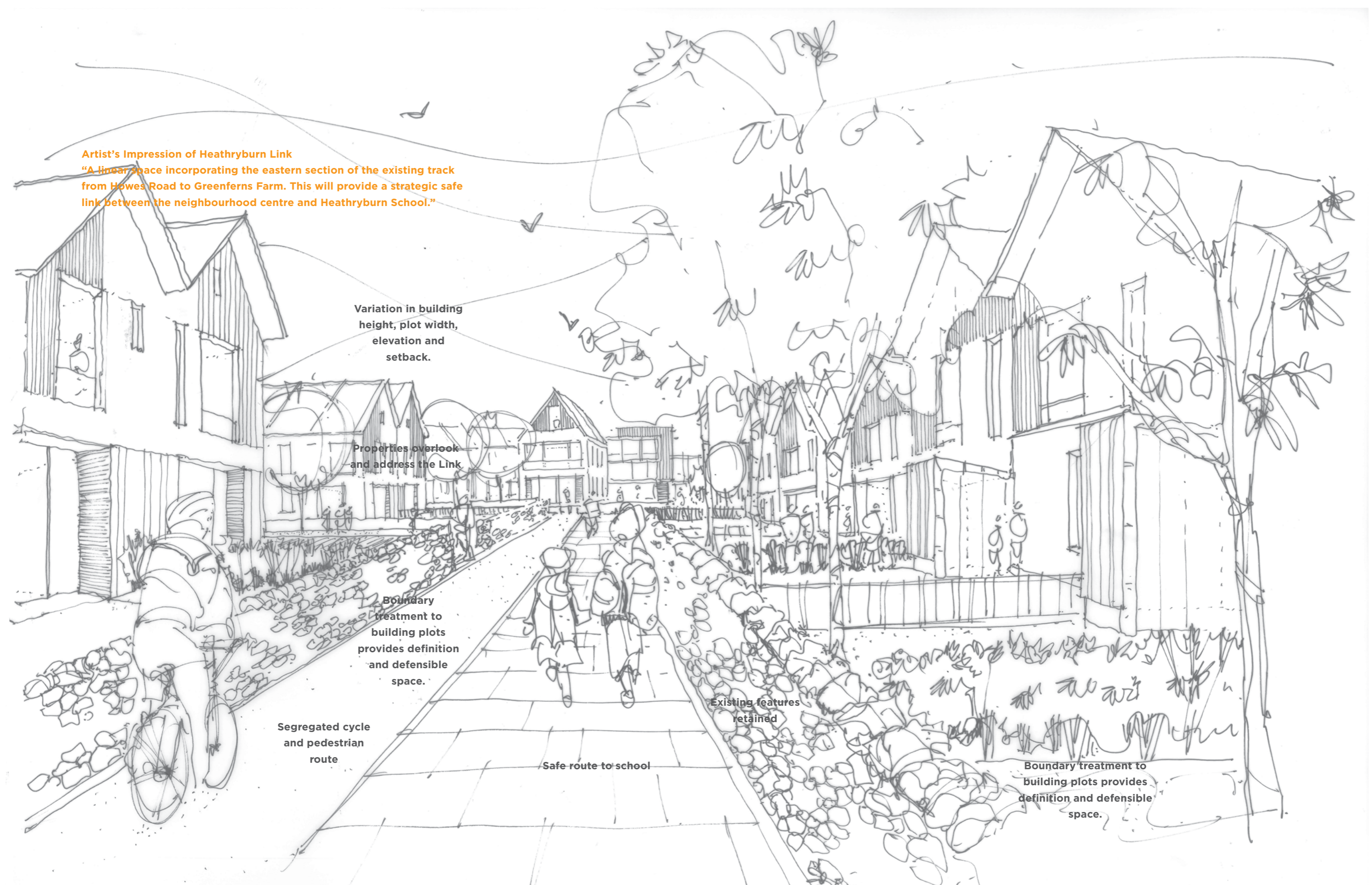
Linear corridor incorporating paths, SuDS and open space, Upton.



Opportunities to utilise existing walls and ditches as part of the SuDS network.

Artist's Impression of Heathryburn Link

"A linear space incorporating the eastern section of the existing track from Howes Road to Greenferns Farm. This will provide a strategic safe link between the neighbourhood centre and Heathryburn School."



Variation in building height, plot width, elevation and setback.

Properties overlook and address the Link

Boundary treatment to building plots provides definition and defensible space.

Segregated cycle and pedestrian route

Safe route to school

Existing features retained

Boundary treatment to building plots provides definition and defensible space.

Fig. 71: Artists impression of Heathryburn link.

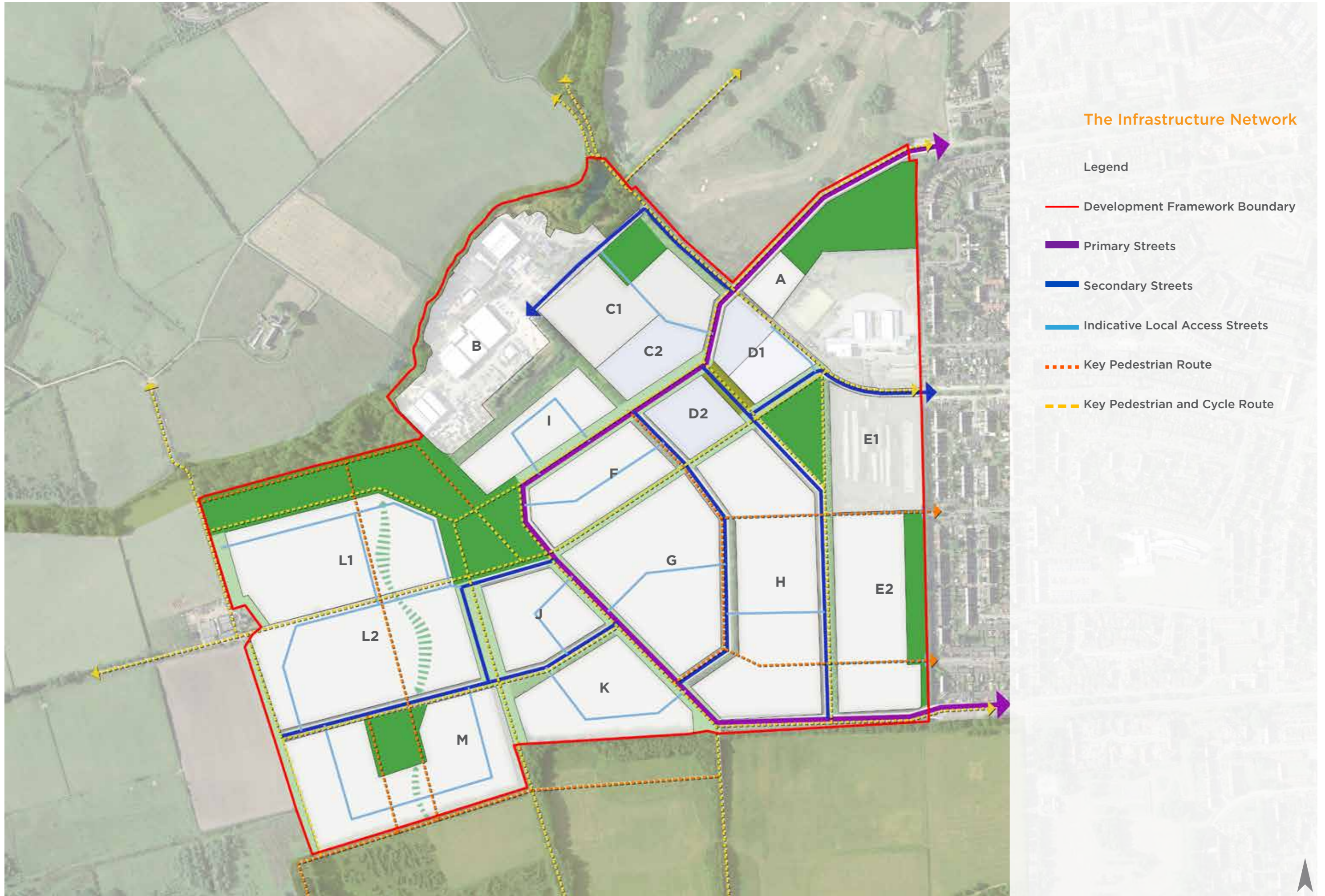


Fig. 72: Infrastructure Framework.

Scale: 1:5,000@A3

8. Infrastructure

8.1 Infrastructure Strategy

Development at Greenferns needs to ensure good access and connectivity with the surrounding existing network of roads and paths, as well as promoting travel choices for those wishing to live within the new community.

The proposed Development Framework aims to provide these choices for moving in and around Greenferns in a sustainable manner, providing links to pedestrian and cycle routes, bus corridors as well as to the local and strategic road network. Ease of access and movement, and a clear street hierarchy and pattern, will offer legibility and will contribute to the vitality and character of the proposed development.

The primary street has been designed to 'loop' through the development, connecting Provost Rust Drive to the north to Provost Fraser Drive to the south. It will pass between the mixed use Neighbourhood Centre and the employment areas to the north whilst allowing good public transport to the whole development. It has been specifically designed to take the main traffic routes and traffic associated with the business land away from near the school where they are accessed from Howes Road. The design and character of this street, including where it passes by the Neighbourhood Centre has been a key consideration of the Development Framework and has been developed as part of an access strategy from the outset, aiming to deliver an integrated land use and transport framework. As for education, there will be a key pedestrian and cycle route connecting the two schools to the rest of the site.

Movement Hierarchy

A movement hierarchy has been developed which addresses movement around the site by pedestrians, cyclists, public transport and vehicles. This hierarchy reflects the key design principles contained within Government guidance on Designing Streets with different standards adopted according to the role and function of the street.

The movement hierarchy aims to define a core network of streets and pedestrian and cycle links with secondary links serving the predominantly residential areas. The overall approach to the movement hierarchy is to:

- Designate streets where the principal function is for vehicular movement including buses;
- Provide suitable safe and direct crossing points for pedestrian/cyclist movements;
- Provide a choice of pedestrian/cycle routes with off road and on road facilities;
- Create direct links which follow key pedestrian desire lines;
- Create new links to neighbouring developments;
- Ensure the right balance between the movement and place function of streets;
- Allow the routing of buses through the site; and

- Ensure that all residential areas are within a reasonable walking distance of a bus stop.

Green Travel Initiatives

New residents should be informed of green travel opportunities via several methods including:

- Providing new residents with an information pack including bus stop locations, timetables and walking and cycle routes in the area;
- Details of walk to school initiatives;
- Real Time Public Transport Information systems located at the proposed bus stops within the site
- Inform residents of travel initiatives through community notice boards at buildings such as Northfield and Mastrick Community Centres;
- Other areas that could be targeted as information hubs could include parks, schools, local shops etc. The use of different amenities and community buildings can be an effective way of getting the information across to differing demographic groups.

Parking

The Aberdeen City Council's Development Standards were reviewed and it would seem appropriate in aid of creating a sustainable community to apply 2 parking spaces per house (3 bedrooms or less), 3 spaces per house (4 bedrooms or more) and 1.5 spaces per flat. This is below the current parking guidelines. This reduced parking rate will be supported by bus routes through the site and a percentage of social housing.

Aberdeen City Council support and encourage low or no car housing, recognising the contribution this can have towards sustainable development, where there is evidence that car ownership and use will be low enough to justify proposals, and where public transport and other travel options are sufficient to allow residents to rely wholly on them. The parking requirements for Housing Association/Social Housing (rented only) are lower than requirements for private residential areas and should be applied where appropriate.

The Council supports the implementation and expansion of Car Clubs in Aberdeen and Car Club provision should be considered onsite in line with the Transport and Accessibility SG as part of future Planning Applications.

In addition to car parking it is important that secure cycle parking is provided. Drawings submitted for a planning application should clearly indicate the number of spaces available for bicycles, location and design in line with the Transport and Accessibility SG.

8.2 Transport Impact

Potential Mitigation Measures

A range of potential mitigation options have been identified for the roundabouts on the A90, these are described further in the Transport and Accessibility Assessment (last updated 2010):

- Localised geometry improvements to the entry radius and flare length on entry arms;
- Provision of Bus Lane on Provost Fraser Drive to ensure public transport journey times are not affected by development traffic. Some local widening may be required to Provost Fraser Drive on the approach to the junction; and
- Spiral lane markings and improved approach lane markings and signage to marshal traffic through junction. Potential on A90 North and South to widen out to three lanes.

8.3 Future Growth

A Western Loop

The Framework has been designed to allow Greenferns to connect to its wider surroundings, the secondary street to the west of the Framework will be designed to provide the opportunity for future connections to the west and north. The access street to the north of Block L should also be designed to allow for future connections.

A North-South Link

A potential north south link, which could potentially run down the edge of Sheddocksley from the proposed development to the Lang Stracht would provide an alternative route to the strategic road network.



Fig. 73: Pedestrian and Cycle Network

8.4 Pedestrian and Cycle Links

Strategy and Principles

General

It is anticipated that there will be further possibilities for pedestrian and cycle movement throughout the development, along roads and their associated pavements and also through the development blocks. The footpaths and cycleways shown are not exclusive and are intended to show the main strategic routes only.

There will be a hierarchy of routes, with the shared Pedestrian and Cycle links providing the principal routes through the development fulfilling a more strategic function and connections to the existing Core Path network.

The pedestrian routes provide a secondary network or links connecting the strategic routes to the main residential areas and routes through areas of open space where cycle routes would not be appropriate.

Aims

- To make walking and cycling as attractive as possible.
- To create routes which link key destinations in as direct a manner as possible.
- To allow circular trips for recreation.
- To allow retention of existing field boundaries.

Routes

- Link to the existing Core Path Network.
- Strategic east west link through site connecting Howes Road to Kingswells path network.
- Links to Westhill/Aberdeen cycle route.
- Connect with key open spaces.
- Create safe routes to the existing Heathryburn School and the new special needs school.
- Ensure good access to the proposed neighbourhood centre and employment areas.
- Connections to Sheddocksley.
- Connection between Greenferns Community woodland and Bucksburn LNCS, incorporating Strategic North South route linking to OP32 Maidenraig North.
- Connections to Northfield, incorporating east west link connecting OP32 Maidenraig North to Northfield (Core Path 45 upgrade).
- Connections west to Kingswells and Brimmond Hill Country Park.

Cycle Links

Cycle links create a loose grid over the site facilitating movement through the development, connecting destinations, surrounding neighbourhoods and the Core Path Network.



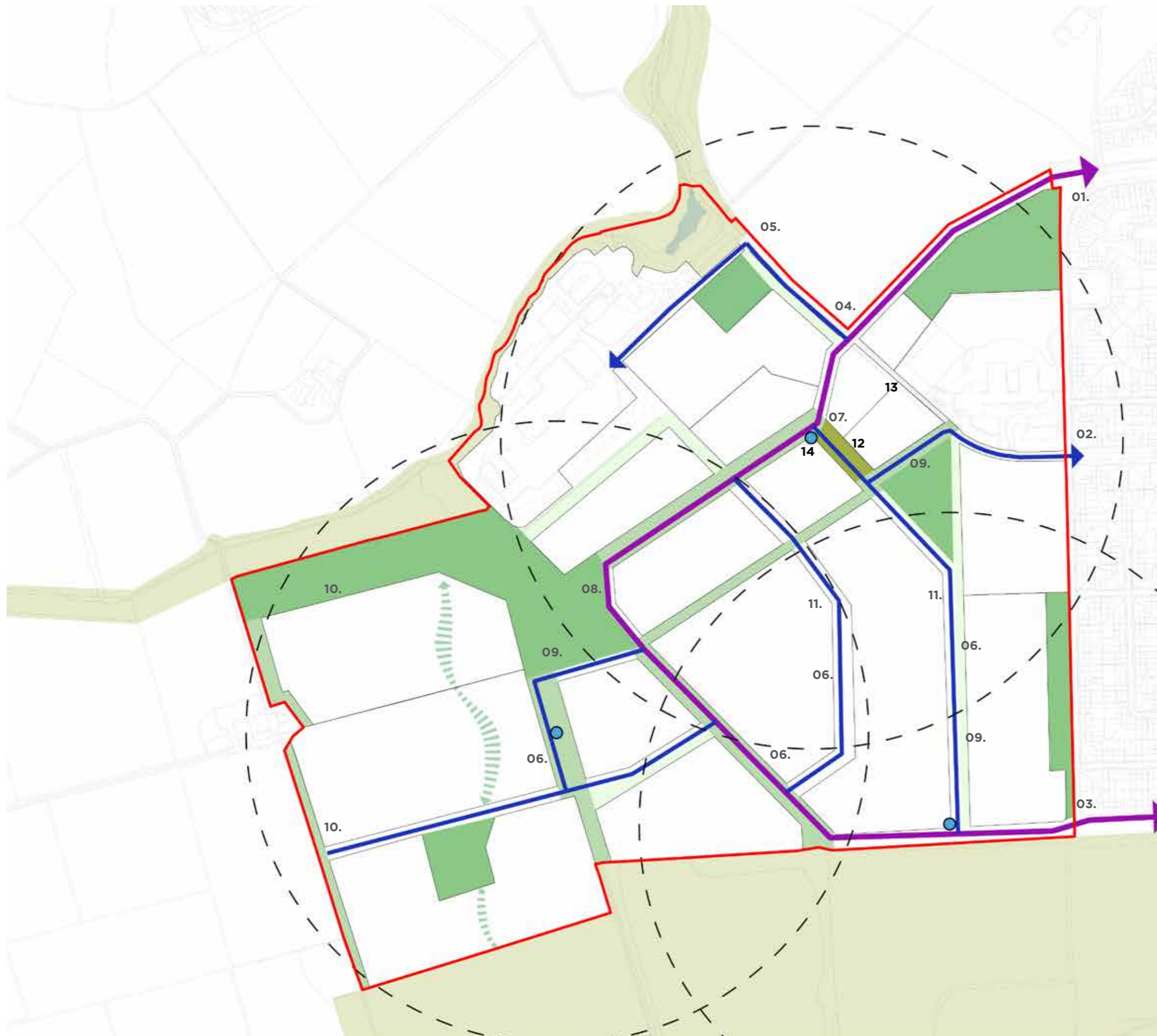
Fig. 74: Key Cycle Links.

Pedestrian Links

Pedestrian links create a finer grid over the site facilitating ease of movement through the development and connecting with destinations, surrounding neighbourhoods and the Core Path Network.



Fig. 75: Key Pedestrian Links.



Primary Infrastructure Network

Legend

- Development Framework Boundary
 - Primary Streets
 - Secondary Streets
 - Indicative location for Bus Stop
 - 400m Isochrone (Approximately 5 minutes walk)
- 01** Entrance from Provost Rust Drive
 - 02** Entrance from Davidson Gardens
 - 03** Entrance from Provost Fraser Drive
 - 04** Entrance into the main Greenferns site across Howes Road. Existing avenue of trees to be retained helping to create strong arrival experience.
 - 05** Access to Bucksburn House, Business / light industry site maintained via Howes Road
 - 06** Where appropriate streets follow tree lined field boundaries, allowing them to be retained.
 - 07** Primary street to create a loop around the proposed neighbourhood centre, facilitating good public transport coverage and routing options.
 - 08** Primary Street avoids ancient woodland.
 - 09** Roads run adjacent to open space, helping to ensure development addresses space.
 - 10** Potential for connections to wider surroundings.
 - 11** These sections of General Access Road are included to allow public transport routes to serve development phases. Specification of these could be reduced dependant on phasing.
 - 12** Secondary street to pass through neighbourhood centre. The civic space should be designed accordingly with off street parking provided and have a pedestrian bias.
 - 13** Howes Road closed to vehicles (kept open for cyclists and pedestrians) in this section.
 - 14** Bus Stop at neighbourhood centre to provide bus hub.

Fig. 76: Primary Infrastructure

Scale: 1:5,000@A3

8.5 Primary street network

Strategy and Principles

Route

The route of the Primary street infrastructure has been designed to:

- Provide a new link from provost Rust Drive early in the development to allow access to the neighbourhood centre and business land.
- Provide a direct loop into the site, encompassing the neighbourhood centre.
- Tie into existing infrastructure.
- Allow the retention of existing field boundaries and ancient woodland.
- Give good penetration into the site for public transport.
- Provide various bus routing options both when built out and through possible development phases.

Traffic Calming

- Provide a degree of natural traffic calming through bends and turns.

Public Transport

- Allow for all of development to be within 400m of a bus stop.
- Not preclude future public transport service to the west.

Possible Public Transport Phasing

- The following series of diagrams highlight the ability of the framework to provide appropriate public transport coverage as the development expands. Note: Depending upon phasing strategy the number of General Access Roads could be reduced.

Phase 1

Temporary bus turning areas provided within the site.



Phase 2



Phase 3



Phase 4



Phase 5



Possible Public Transport Phasing.

8.6 Primary street

Design intent

- Provide the main route of circulation for the site, tying into two of the main access points at Provost Fraser Drive and Provost Rust Drive, reserving Howes Road for access to the two schools and for pedestrians and cyclists. Further north, Howes Road will provide Industrial Access, removing heavy vehicles from the Primary Street.
- Designed to allow public transport.
- Where possible avoids damaging the integrity of the existing tree lined field boundaries and the area of ancient woodland.
- Ensure the Primary Street penetrates deep enough into the site to allow good public transport coverage.
- Create the character of a residential street, which buildings address.
- Avoid long straight sections of road which encourage high vehicle speeds.

Design Specification

- Max 7.3m wide.
- Bus route.
- Frontage access allowed.
- On street parking allowed.
- **Street trees should be included where possible.**

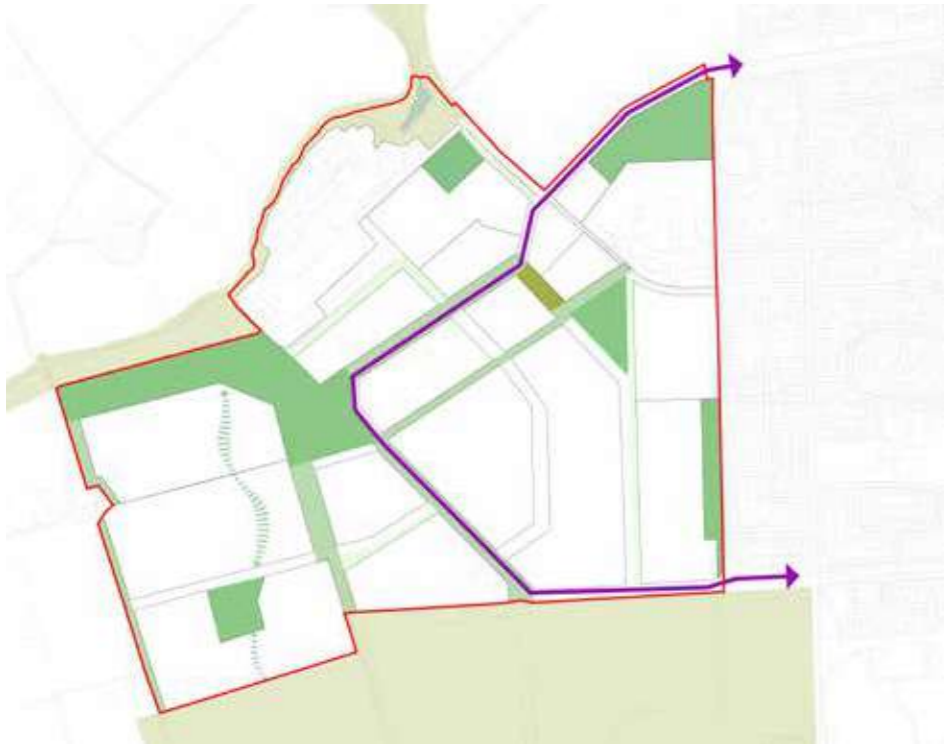


Fig. 79: Primary street.



Fig. 77: Primary street character, Aberdeen.



Fig. 78: Primary street character, Cupar.

8.7 Secondary streets

Design intent

- Provide secondary circulation to the site, connecting both north and south sides of the Primary Street.
- Designed to allow public transport.
- Where possible avoid damaging the integrity of the existing tree lined field boundaries by either crossing directly or running parallel.
- Access to Enermech site to be provided from existing Howes Road access.

Design Specification

- Min. 6.5m wide.
- Bus route (corner radii to be checked to ensure buses can travel round together).
- Frontage access allowed.
- On street parking allowed.
- **Street trees should be included where possible.**



Fig. 80: Secondary street character, Aberdeen.



Fig. 81: Secondary street character, Poundbury.



Fig. 82: Secondary streets.



Internal Block Infrastructure

Legend

- Development Framework Boundary
- Primary Infrastructure
- General Access Streets
NB. These are shown indicatively only however aim to outline key principles.

- 01** Vehicular Connection within development block to Davidson Drive.
- 02** Howes Road closed to vehicles (kept open for cyclists and pedestrians) in this section. Bucksburn House to be accessed from Primary Street and Howes Road to the north.
- 03** Access to be provided to Block C1 (light industry /business) directly from the Primary Street to aid permeability.
- 04** Where appropriate Local Access streets follow tree lined field boundaries, allowing these character forming elements to be retained.
- 05** Streets run adjacent to open space, helping to ensure that it is addressed by development.
- 06** Local Access Road to follow Greenferns Farm track, allowing Wych Elm to be retained.

Fig. 83: Internal Block Infrastructure.

Scale: 1:5,000@A3

8.8 Internal blocks residential streets

Strategy and Principles

General

It is anticipated that there will be a finer grain of Local Access Roads, Homezones and Courtyards which will further subdivide the Development Framework and help to create a finer grid of access and connectivity.

The Internal Block infrastructure shown here is not fixed at this stage but aims to show how key principles of the Development Framework can be achieved.

Street trees should be included where possible.

Route

Route of Local Access roads has been designed to:

- Allow retention of existing tree lined field boundaries.
- Ensure development addresses open space.
- Provide a suitable scale of road to the western rural edge of the site connecting the two secondary streets.



Fig. 84: Indicative layout for Residential Streets.



Fig. 85: Residential Street Upton.

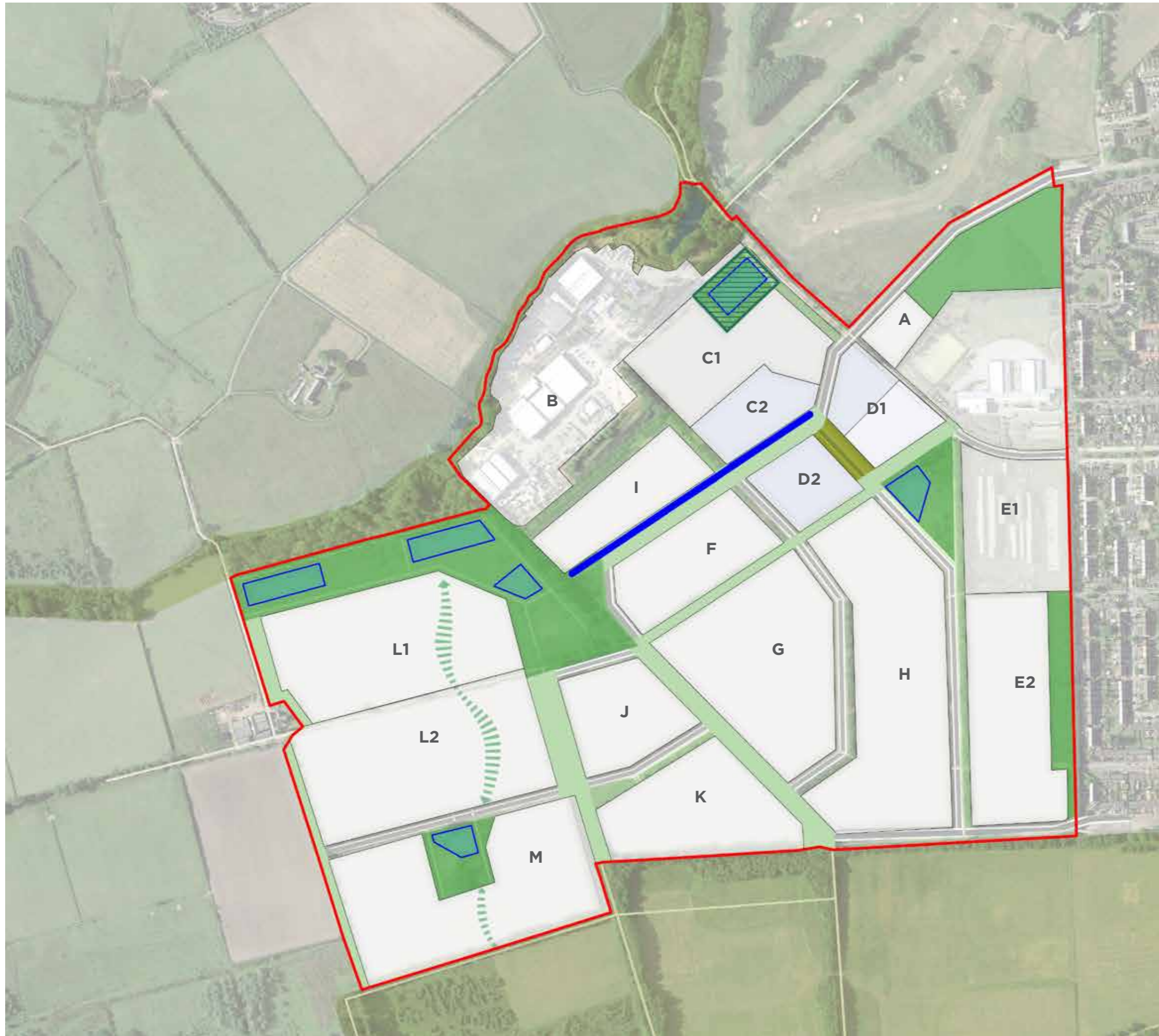
8.9 General access streets

Design intent

- Provide local access across the site.
- Allow retention of existing tree lined field boundaries.

Design Specification

- Typically 5.5m wide
- Frontage access
- On street parking



Drainage

Legend

— Development Framework Boundary

■ Open Space

■ Development

— Key Swale Features

■ Key SuDS Features

■ SuDS adjacent to business/employment land.

The area is not a key area of open space and should not promote public access. Rather it should be designed to tie in with the landscape surrounding Bucksburn House and form an entrance feature to the business site.

--- Opportunity to integrate open space and SuDS within block layout to connect areas of open space

Note: Filter strips and swales are vegetated surface features that drain water evenly off impermeable areas. Swales are long shallow channels whilst filter strips are gently sloping areas of ground. Both devices mimic natural drainage patterns by allowing rainwater to run in sheets through vegetation, slowing and filtering the flow. Swales can also be designed for a combination of conveyance, infiltration, detention and treatment of runoff.

Fig. 86: Drainage Infrastructure.

Scale: 1:5,000@A3

9. Drainage

9.1 Principles

The landscape framework offers the opportunity to integrate a hydrological system into the overall layout. The integration of the hydrological system and SuDS into the Development Framework has been informed and guided by the Drainage Impact Assessment. Currently for the majority of the site surface water drains north into the Bucks Burn and it is envisaged this will be replicated post-development. Surface water on the east of the site currently drains in an easterly direction, post-development it is envisaged that this would continue to be the case draining into the existing sewage network. Land adjacent to the Bucks Burn corridor and other low lying areas have been identified as suitable locations for the key SuDS facilities. Run-off naturally flows into these areas where some water logging already occurs. The landscape framework also enables the creation of a system of conveyance strips, swales and filter strips to control and direct run-off, these could be integrated within Greenways and adjacent to boundaries where suitable. Swales can be designed for a combination of conveyance, infiltration, detention and treatment of runoff.

SuDS are an important resource for biodiversity, sustainable treatment of surface water run off and also for the resident community in terms of visual amenity and passive recreational resources. The design of the SuDS facilities should be done in conjunction with the open space design to ensure that they create attractive features enhancing informal recreation. Steep gradients and fenced in drainage features should be avoided. Associated benches and footpaths should be provided encouraging the inclusion of these spaces into the fabric of community life.

As set out in the DIA, SUDS measures have been evaluated and are planned for implementation. Work carried out by the developer should confirm to the standards as indicated in the Scottish Water publications, 'Water for Scotland 3rd Edition' and 'Sewers for Scotland 3rd Edition'. An allowance for treatment volumes within the balancing ponds has been made and incorporated in the design layout.

This would deliver a potential level of improvement associated with quality of surface water drainage leaving the site (i.e. Limit potential for diffuse pollution, which is the main issue for water quality in the Bucks Burn).

In line with the findings of the HRA carried out for the LDP we advise that if a statement encouraging water saving technologies and water efficiency is included within any subsequent masterplan or Plan-ning Application then this significant effect can be avoided and an appropriate assessment will not be required. A Water Efficiency Statement will also be required in each subsequent Planning Application detailing the measures employed to limit water abstraction.

For all the drainage works a construction method statement will be submitted as part of a planning application to avoid run off/sediment impacting on the River Dee.

9.2 Requirements

A desk based assessment of site drainage (Drainage Assessment) has been completed to determine the likely surface water runoff which will be generated under the Framework proposals and to estimate the required capacity and likely suitable types of SuDS features to be adopted. This will be revisited at the detailed design stage in order for the develop the specific requirements of the drainage design.

The key requirements in terms of policy are as follows:

- Pre-development runoff rates must be mimicked post-development for all return periods up to the 1 in 200 year return period.
- Formal attenuation on site must be provided up to a 1 in 30 year event.

To ensure an appropriate drainage strategy for Development Framework this has been approached and assessed as follows:

- Potential issues associated with changes to the sites runoff characteristics have been appropriately considered in line with regulatory guidance.
- Measures to mitigate these issues, principally through the use of SuDS, have been identified.
- The proposed mitigation measures are readily achievable and fit into the overall strategy for development at the site.

Given the unattenuated peak runoffs estimated, the site's drainage strategy needs to incorporate attenuation in order to reduce post-development runoff rates. This will be achieved through the use of SuDS which will additionally provide water quality treatment and add to ecological and amenity value.

Pre-development runoff rates have been calculated based on industry-standard greenfield estimation techniques. Post-development rates have been calculated based on estimates of the likely ratio of impermeable and permeable areas using the modified rational method. These calculations were then used to provide an estimate of the required volume of attenuation needed to ensure post-development discharge rates would not increase the risk of flooding on-site or elsewhere.

9.3 SuDS options

The feasibility of a range of SuDS techniques has been assessed, in order of sustainability benefit, to identify which may be suitable for the site. This consideration has also taken into account local constraints to certain types of water features due to potential conflicts with aviation. As mentioned above these options will be revisited at the detailed design stage in order to develop specific requirements of the drainage design. The options available include:

- Basins and Ponds (Constructed wetlands, Balancing ponds, Detention basins, Detention ponds, but excluding permanently wet ponds to minimise attraction to birds).
- Filter strips and swales.

- Infiltration devices (Soakaways, Infiltration trenches and basins).
- Permeable surfaces and filter drains (Gravelled areas, Solid paving blocks, Porous paviour); Tanked Systems (Over-sized pipes/tanks, storm cells).

On the basis of the SuDS options available, there are a range of techniques that could be appropriate for use at this site. It is considered that a combination or treatment train of SuDS measures could be employed to deliver the required attenuation of surface water run-off.

Preferred locations for the key, larger scale features are illustrated opposite. The large areas of open space in the layout will provide opportunities for basins and ponds.

The area of ponds will be limited by the potential for these features to attract birds and thereby present a potential risk to the nearby Aberdeen Airport. It is therefore considered that only the minimum volume of storage for water treatment should be allowed for. At least four detention basin and four balancing ponds are considered to be feasible at the site. Although no soakaway tests have been undertaken to date, soakaways and infiltration trenches may be viable options. A small allowance for such measures has been considered possible but infiltration SuDS are not considered to make up a large percentage of the attenuation requirement.

Underground cellular storage may be designed into the underground drainage system to provide on-line attenuation in combination with flow control measures at the outfalls. There would also be some degree of storage provided in any conventional pipework, the consideration of which as storage is acceptable under the requirements of Sewers for Scotland. During an extreme storm such as the 200 year return period, it is also acceptable for flooding of open spaces as long as this does not flood buildings or major access routes.

The site is relatively large and areas of open space have been allowed for in the masterplan. The volumes of attenuation necessary to achieve greenfield rates, post-development are considered readily achievable given the space availability and flexibility in the final design.

The final configuration of measures employed will, however, be subject to further considerations of practicality and achievability at the detailed design stage in consultation with SEPA and the Planning Authorities.

9.4 SuDS maintenance

As outlined in Sewers for Scotland, only detention ponds, detention basins and underground storage techniques will be vested by Scottish Water. Responsibility for management, ongoing maintenance and specification of any alternative techniques, potentially through a separate management company, will need to be defined at the detailed design stage.



Development Blocks

Legend

— Development Framework Boundary

■ Open Space/SuDS

■ Civic Space

■ Development Blocks

⊙ Landmark / Gateways Features
 These points have been picked out at a Framework level as worthy of special design to enhance the legibility and interest of the urban form.

⬡ Neighbourhood Centre Landmarks
 The whole of the Neighbourhood Centre and its edges should be carefully designed to enhance the legibility of the development and announce the Centre.

Development Blocks

A	0.45ha
B	5.24ha
C1	2.43ha
C2	1.04ha
D1	1.29ha
D2	0.97ha
E1	2.37ha
E2	3.23ha
F	1.96ha
G	4.10ha
H	5.39ha
I	1.65ha
J	1.69ha
K	2.66ha
L1	4.30ha
L2	4.84ha
M	4.68ha
Total	48.29ha

Fig. 87: Development Blocks.

Scale: 1:5,000@A3

10. Development

10.1 Design Principles

The commitment to creating a high quality, distinctive and accessible new neighbourhood has been a driving factor influencing the Development Framework for Greenferns. The Framework has been developed to allow these aspirations to be met by guiding future development, however, these will only be achieved if attention is paid throughout the whole design evolution of Greenferns. Within development blocks a variety of building forms, street characters and public spaces will be necessary, with a positive relationship between buildings and the spaces they define. The new neighbourhood must be attractive, safe and a desirable place to live. A high quality environment will help to discourage damage and promote social responsibility.

To support the framework the design qualities, as set out in the Scottish Government's Designing Places and Designing Streets, have been identified which must be considered within future development proposals, these are:

An Integrated Place

The new development is planned as a fully integrated part of Aberdeen and it must be firmly tied back into the urban fabric of the existing settlement. It is planned as an urban expansion, providing a new neighbourhood to the west of Aberdeen through shared facilities, spaces and connections, and not as an isolated housing estate.

A Permeable Place

The development must have an urban form that allows and encourages the creation of a walkable community to support local facilities and reduce the use of cars. There must also be a variety of routes that people can choose when travelling through the area and the predominant street environment should be permeable, safe and legible.

An Accessible Place

Bus routes have been planned as an integral part of the new community at Greenferns, building upon and enhancing the many existing services to the west of Aberdeen. In addition development at Greenferns should cater adequately for the car without encouraging its use and emphasis should be placed on reducing traffic speed and prioritising journeys by foot, cycle and public transport. The place should bring together uses in a manner that reduces the need to travel and improves the quality of life.

A Distinctive Place

The existing landscape is a key asset in creating a distinctive place and the field boundaries, burn corridor, views and landscape features must be used to create a distinctive character and to generate a sense of place. This will also help people to orientate themselves and find their way around. Finally, the area should be visually interesting, integrating building form, development layout and landscape design to create urban areas with a strong identity.

A Well Structured Place

Greenferns should be characterised by attractive streets and spaces that are enclosed by appropriately scaled and positioned buildings, creating a coherent urban structure. The Development Blocks will be broken down by a series of local access roads with courtyards, lanes and mews as potential further subdivisions.

A Sustainable Place

New development should respond directly to the site's landscape features, embracing the topography and aspect, respecting the prevailing wind as well as the site's natural resources, while integrating new features such as sustainable urban drainage and ecological habitat.

To engender these qualities into the Development Framework at Greenferns a series of general principles have been considered. These principles should be used to inform future proposals for the site and be supported by further Strategic Design Guidance for the development area(s).

- Scale and density will vary across the site but the highest intensity of development should be focussed around the neighbourhood centre.
- The density shown on Figure 91 is a guide and it is anticipated that within each block there will be a more refined structure and range of densities. Generally the density should be highest around the neighbourhood centre and decrease from east to west, moving to the rural edge.
- Buildings will face each other across streets, spaces or parks and spill their activities on to them.
- The primary means of access into all buildings will be from the street or space the building faces.
- Streets, spaces and parks must be overlooked to provide natural surveillance, excessive lengths of blank walls will not be permitted.
- Street elevations along the primary road network and around the open spaces identified in the landscape framework will be predominantly continuous in nature and use the building frontages, gable ends, garages and walls to maintain this discipline.

- All streets, spaces and parks will be well defined by appropriately scaled buildings to ensure a strong degree of containment and avoid ill-defined or unwanted spaces.
- Where buildings are set back from the street they should have sufficient presence to contribute to that street.
- Streets should encourage through movement.
- There should be a variety of street types and that they should bend and flex with contours and features of the landscape, i.e. offer a sense of intrigue and some surprise.
- Street junctions should be designed as local nodes or spaces, rather than just traffic intersections.
- Courtyards should contain at least two dwellings and have at least two entry/exit points, to allow free movement and ensure natural surveillance.
- Development on the opposite side of streets should be designed to read together, especially at the edge of construction phases.
- Incidental open spaces will be provided in key areas to provide local amenity within residential streets and development plots.
- All residential areas and nodes of activity must be linked with a convenient network of paths/cycleways and public transport routes.
- Landmarks and vistas should be included within the development at appropriate locations to help with legibility and support local identity.
- There will be clear definition between private and public spaces and where development faces the primary street network and the open spaces identified in the landscape framework, the boundaries will be clearly defined by a low wall (potentially in combination with railings and hedging).
- There must be clear definition between public and private spaces.
- Car parking must not be allowed to dominate street frontages.

Use of carbon neutral technologies and design

In accordance with national and local policy and guidance, consideration should be given to the provision of a district heating network to meet the heat demand for the proposed development, consistent with the advice provided in the Scottish Government's online Planning and Heat advice.

The requirement for a feasibility study to assess the heat network and details of sustainable design considerations should be provided as part of any future planning submission.

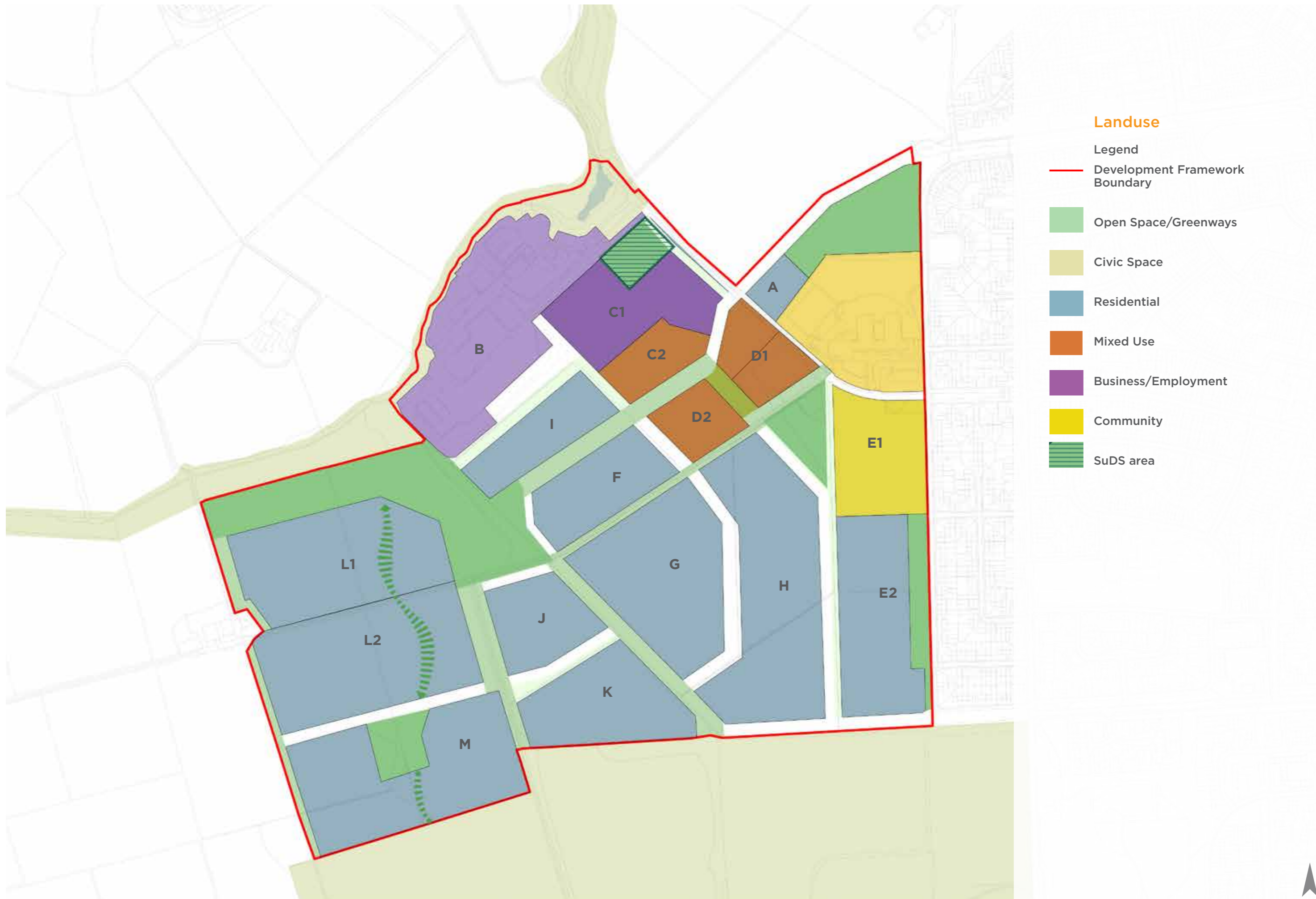


Fig. 88: Landuse Framework.

Scale: 1:5,000@A3

10.2 Landuse

The mix of uses and area requirements given below has been informed by Aberdeen City Council, discussion with the land owners, current Local Development Plan requirements and market analysis.

The Development Framework illustrates preferred areas and locations for a mix of landuses, as directed and informed by the requirements identified in the brief.

Non residential uses

Development Block B

- Business / Light Industry. (5.24 hectares / 12.95 acres)
- To remain under control of Enermech who will continue to run current operations from this site with opportunity to expand to site C1.

Development Block C1

- Business / Light Industry. (2.43 hectares / 6.00 acres)

Development Blocks D1 and D2

- Residential
- Office
- Retail, Class 1, 2 and 3 uses
- Supermarket
- Six GP Health Centre (1.76 acres / 0.76 hectares)
- Community Uses
- Restaurant / Cafe / Pub

Development Block E1

- Orchard Brae School for children with special needs (2.37 hectares / 5.86 acres)
- As outlined in the LDP a special needs school site has been completed and will be operating in 2017/2018.

The amount of employment land proposed for Greenferns in the Development Framework is less than that identified in the Local Development Plan. The policy documents have recommended 10 hectares (gross), however it is not considered that level of provision could be sustained at Greenferns and the proposed Business land and mixed use Neighbourhood Centre that are identified are considered to be more realistic.

Land at the existing Bucks Burn Business /Light industry site will remain in employment use and the current occupier (Enermech) has plans to expand which have been accommodated in the Development Framework.

If the Council wish to see more employment land at Greenferns, the Development Framework and Masterplan can be adjusted at the relevant time.

10.3 Development Block B and C1

A significant change from the original Development Framework has been the desire for the current occupier (Enermech) of the business / employment land around Bucksburn House (Block B) to not only remain on the current site but to also identify options for expansion of their site.

OPEN met with Enermech to discuss their operations and ambitions for expansion and how best these could be accommodated within the updated Development Framework. The current occupiers have reviewed their requirements and consider that they would need an additional 2.43 hectares / 6 acres to expand their operations. The expanded campus would include office, industrial, storage/yard and parking area.

The plans opposite present two options as to how the expansion of the business /employment land could be accommodated within the Development Framework depending of the desired level of integration and frontage with the mixed use neighbourhood centre. Significantly both options would still have the primary point of access from Howes Road and could be delivered in an early phase of development.

Both options provide a viable option for the expansion of the business / employment land. The preferred option will be developed as part of a future Planning Application and will be subject to discussions between Aberdeen City Council and Enermech.

Option 1

Block C1 (6 acres) could provide an expansion to the current campus accessed from Howes Road with the opportunity for connections through to the mixed use neighbourhood centre. This would also give the opportunity for the office building(s) to have a prominent location on the Primary Street.



Option 2

In this option Block C1 (6 acres) could provide the same amount of land for expansion however it would remain on a closed site accessed from Howes Road with no frontage to the Primary Street. Pedestrian links could still be provided to the neighbourhood centre. Residential development within C2 would front the Primary Street.

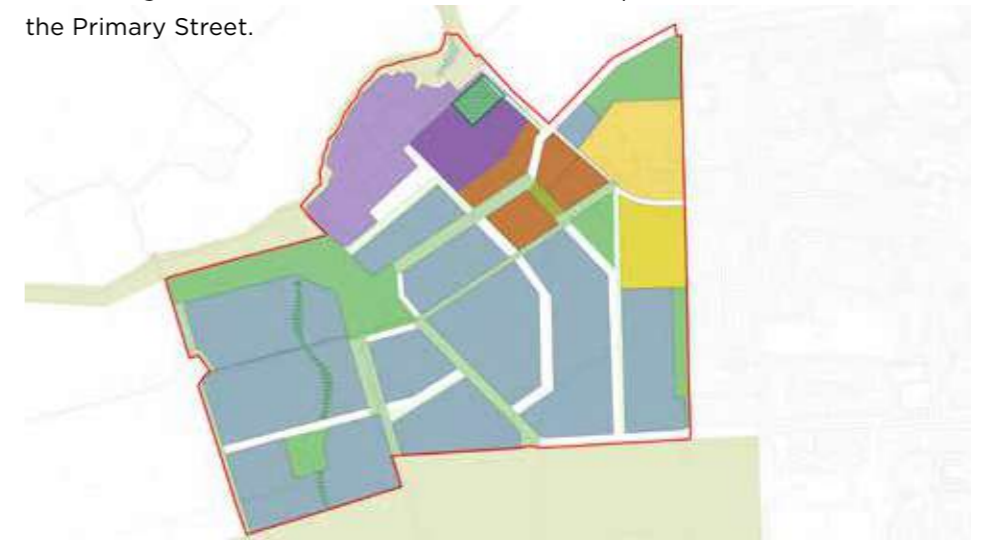


Fig. 89: Development Block C1 options.

10.4 School Principles

A new primary school (279 pupil capacity) has already been provided at Heathryburn within the Greenferns development. It opened in 2009. This may need to be extended at some time in the future to accommodate the additional pupils generated by Greenferns.

A new school for children with additional support needs has also been provided within the Greenferns development on Opportunity Site OP28. This school opened in 2017 and will serve children from across the City.

With the two schools identified within the Development Framework there is not further requirement for a school within the Greenferns area. The site at Greenferns is currently zoned to Westpark Primary School located within Northfield to the east of the site area.

Location

With the locations of the schools fixed on the site adjacent to Howes Road, the Development Framework review gave the opportunity to better integrate the schools as part of the neighbourhood centre. Whilst the location and design of the school sites has been fixed it was considered that by moving the neighbourhood centre to a location adjacent to these a more focused and vibrant mixed use centre could be achieved.

Access

A key principle of the Development Framework was to remove the primary vehicle route from between the schools as it is currently following Howes Road. The Development Framework proposes that the Primary Street wraps around the site and whilst a secondary street will continue to follow the existing alignment of Howes Road it will provide access to the school, neighbourhood centre and local areas only. Significantly this arrangement will take bus routes and vehicles associated with the industrial uses away from the school sites.

Heathryburn Link and the other pedestrian routes have been designed to ensure the school sites remain accessible and can be accessed via safe routes to school.

10.5 Business Principles

Location

The Development Framework provides two locations designated for business use (Class 4 and 5). One within Development Block C1, closely associated with the Neighbourhood Centre and the other within Development Block B.

Block B will continue to provide a location for business use within the Development Framework. Block C1 has been proposed as an expansion site and connections between the sites should be provided.

The Development Framework sets out an area (Block C1) for an expansion of the current business operation of Enermech, covering a total area of 6.00 acres and providing a link between the existing site and the neighbourhood centre. The expanded campus would include a mix of office, industrial, storage/yard and parking areas. This expanded business campus has the potential to generate significant on site employment and help to achieve the sustainable community objectives in creating a place to live and work.

Access

The principal access to the business site should remain from Howes Road. Secondary access could be provided from the primary Street for the offices within the expanded campus.

Pedestrian and cycle access should be provided from both Howes Road and the Primary Street. A bus stop is proposed to be located on the Primary Street as part of the neighbourhood centre and adjacent to the expanded campus providing good public transport connections.

Address

Attention should be paid to the frontage design of office buildings which address the Primary Street. Less attractive / larger units, storage areas, site yard areas and parking areas should be set back to the rear of any buildings within the development block.

The SuDS area to the north east of block C1 is required to serve the wider Greenferns site so does not form part of the business site. However due to the location next to the main entrance to the business site this area is not promoted as an area of public open space and the key pedestrian routes remain to the east of Howes Road (Core Path 44). Rather it should be designed as a gateway entrance feature to the business site from Howes Road in keeping with the character of the Bucksburn House landscape to the north.

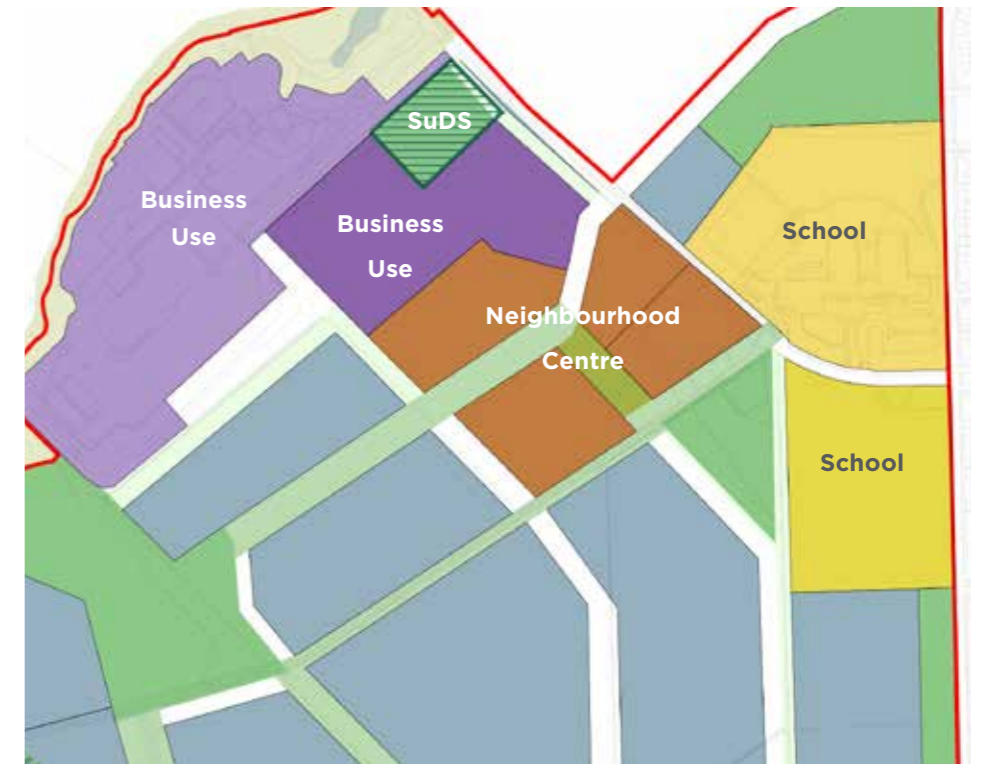


Fig. 90: Business Locations.

10.6 Mixed use Principles

Strategy

Greenferns will aspire to become a mixed use community with a vibrant Neighbourhood Centre. The final mix of uses and the detail design of the Neighbourhood Centre is still to be determined however could include;

- Residential
- Shops
- Small supermarket
- Cafe
- Pub
- Place of Worship
- Medical Centre
- Community buildings
- Offices

Use Location

The mixed use Neighbourhood Centre should be predominantly located within Blocks D1 and D2, with the business site and schools sites immediately adjacent. Block C2 could provide an additional area for other mixed uses should it be required.

Generally shops should address key spaces and nodal points. Restaurants/cafes should encourage outdoor seating and be located in sheltered south facing spaces with an attractive prospect such as overlooking Heathryburn Park. Office and residential uses may be located throughout the Neighbourhood Centre and should be located on the floors above retail units and other non residential uses.

The Medical Centre must be located within Block D1 and should form a prominent building on the Primary Street. Parking should be located to the rear of the building.

Compatibility of Uses

Care must be taken to ensure compatibility of uses and where possible avoid conflict through careful design. Consideration must be given to servicing and to minimise conflicts between pedestrians and vehicles.

Flexibility

Ground floor units in key locations such as around spaces and at nodal points should be designed to allow potential change of use depending upon market demand and the success of the Neighbourhood Centre. Open space should be designed to accommodate a range of potential activities.

Parking

Adequate parking provision should be provided for the mixed use centre but be broken up by planting and design to ensure it does not become dominating.

Within Blocks C2, D1 and D2 it is anticipated that the majority of parking will be located within rear courtyard areas. Visitor parking and parking for the non-residential uses could be accommodated in specific parking areas adjacent to the civic space, the park or in off street bays.

The Council supports the implementation and expansion of Car Clubs in Aberdeen and Car Club provision should be considered within the neighbourhood Centre in line with the Transport and Accessibility SG as part of future Planning Applications.

It is important that secure cycle parking is provided. Drawings submitted for a planning application should clearly indicate the number of spaces available for bicycles, location and design in line with the Transport and Accessibility SG.

Delivery

Community facilities, commercial space and business space will aim to meet the needs of Greenferns as the development grows. The provision of many services will be dependent upon a resident population before they become economically viable however and therefore the Neighbourhood Centre may take some time to meet its full potential. For this reason the Neighbourhood Centre is designed so that areas within it can operate as temporary open space, linking with the larger open space network until such time as the viability of the Neighbourhood Centre is established.

The medical centre would help bolster the viability of the centre as would the centre being located beside the main bus service through the Greenferns development and the additional footfall provided by the adjacent employment areas and schools. The building must be located within D1 and must overlook the public space to the west or south.

Design

The Neighbourhood Centre will focus around Greenferns' Square, a high quality public space. The Neighbourhood Centre is designed to benefit from good access to public transport and pedestrian and cycle connections. Attention will be paid to urban design principles including vistas and landmarks.

10.7 Residential Principles

Affordable Housing

Affordable housing should be phased and mixed throughout the development, not concentrated in one location. The level of affordable housing to be provided is likely to be in the range of 25% to 30%, however, a minimum of 453 units will be applied to the affordable housing total.

Typologies

A mix of housing types should be included across the site. A range of suitable typologies should be included within each development block to allow a choice of housing, to reinforce character and add variety to the urban form.

Height

Generally building height will range from one to three storeys, with opportunities at key landmarks and within the Neighbourhood Centre to increase to five storeys in places. There should be variation in building height from plot to plot to ensure a diverse and interesting streetscape. Generally buildings addressing open space, Primary and Secondary Streets should be taller to reinforce the urban structure. In undertaking further detailed design of building height, consideration should be given to the recommendations within the Landscape and Visual Impact Appraisal and the BAA Airport Safeguarding requirements.

Density

General density ranges for Development Blocks are set out in Figure 90 and Figure 91 on the following pages. It is not anticipated however that there will be a blanket application of these densities across the blocks. It is anticipated that densities within development blocks will be lower towards the Bucks Burn and western edge of the site and higher towards the eastern edge and in particular around the Neighbourhood Centre.

Permeability

Permeability should be created through residential development blocks, responding to the probable key pedestrian flows, ensuring it is as easy as possible to walk to destinations.



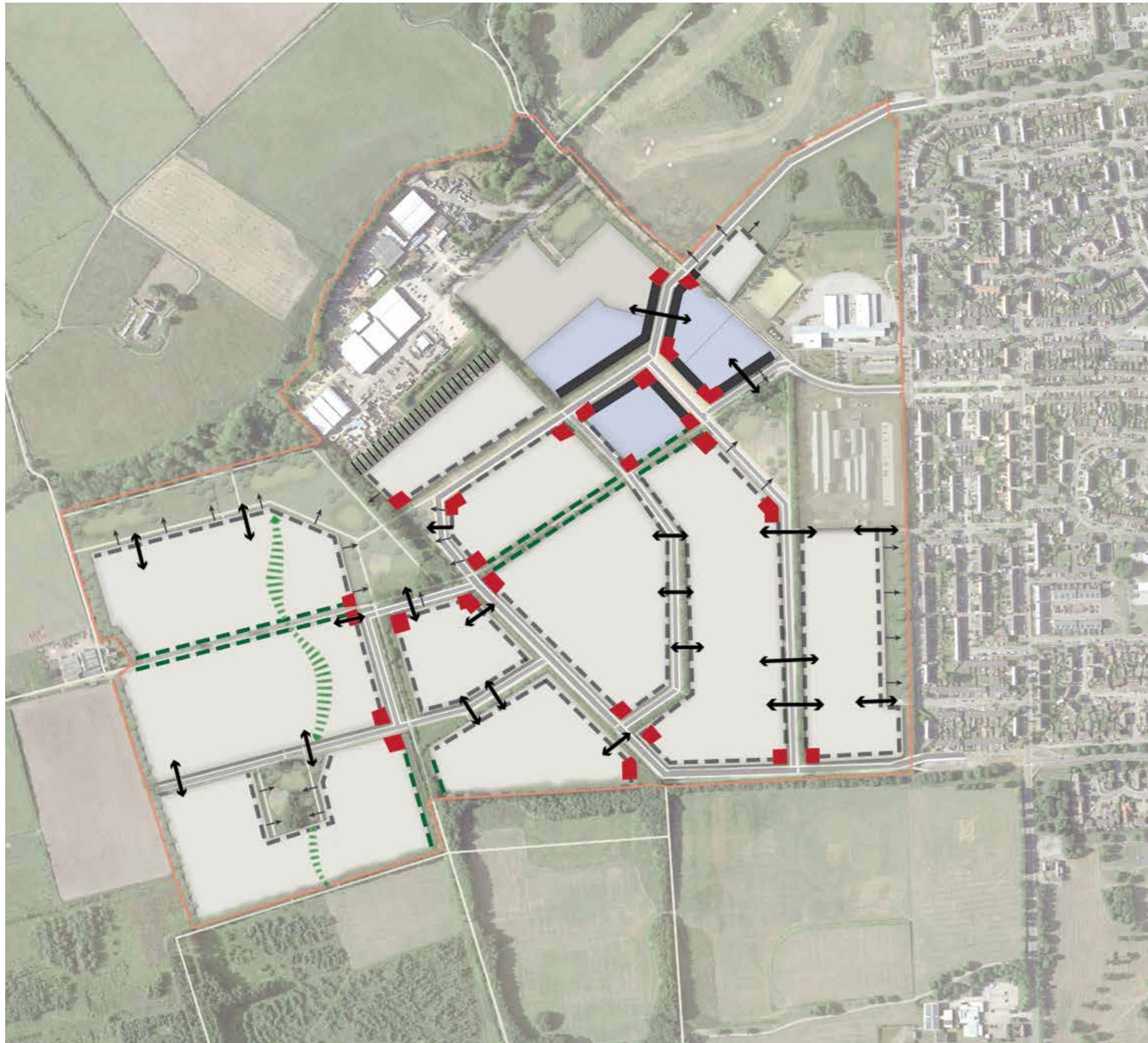
Fig. 91: Residential Density.

10.8 Residential Density

The resulting number of potential residential units from the density range shown across the site, opposite, is shown in the table below. The table presents a suggested density range, that aims to accord with the aspirations of the approved Local Development Plan with 30units/ha as a minimum requirement.

Development Block	Block Area (Hectares)	Block Area (Acres)	Indicative Landuse		% of Development Block Residential Development	Developable Area for Residential Use (Hectares) (From % Development Block Residential Development Assumption)	Suggested Density Range	Number of Potential Residential Units Within Suggested Density Range		
			Residential	Other			Suggested Density Range	Number of Potential Residential Units at lower of Density Range	Number of Potential Residential Units at average Density Range	Number of Potential Residential Units at Higher Density Range
A	0.45	1.11	X		100	0.45	Medium	16	18	20
B	5.24	12.95		Business/light industry	0	0				
C1	2.43	6.00		Business/light industry	0	0				
C2	1.04	2.57	X	Neighbourhood Centre/Mixed use	100	1.04	Higher	57	62	68
D1	1.29	3.19	X	Neighbourhood Centre/Mixed use	60	0.57	Higher	31	34	37
D2	0.97	2.40	X	Neighbourhood Centre/Mixed use	60	0.58	Higher	32	35	38
E1	2.37	5.86		School	0	0				
E2	3.23	7.98	X		100	3.56	High	160	178	196
F	1.96	4.84	X		100	1.96	High	88	98	108
G	4.10	10.13	X		100	4.10	Medium	144	164	185
H	5.39	13.32	X		100	5.39	Medium	189	216	243
I	1.65	4.08	X		100	1.65	High	74	83	91
J	1.69	4.18	X		100	1.69	Low	42	51	59
K	2.66	6.57	X		100	2.66	Medium	93	106	120
L1	4.30	10.63	X		100	4.30	Lower	43	75	108
L2	4.84	11.96	X		100	4.84	Low	121	145	169
M	4.68	11.56	X		100	4.68	Medium	164	187	211
	48.29	119.32						1254	1452	1650

Fig. 92: Schedule of Areas.



Development Principles

Legend

-  Development framework boundary
-  Key buildings/corners for orientation and landmarks
-  Building frontages to directly address the core neighbourhood centre
-  Building frontages to address key streets and spaces
-  Buildings to front a Greenway
-  Opportunity to integrate open space and SuDS within block layout to connect areas of open space
-  Buildings backing onto and appropriately offset from business site
-  Potential locations for access
-  Buildings to address areas of open space
-  Development blocks

Fig. 93: Urban design principles.

11. Character areas

11.1 Urban design

This Development Framework has aimed to set out design principles which are appropriate to this point in the design process. This has included the hierarchy of streets and spaces together and their key design parameters. This section provides further guidance which is appropriate at this time and will help the creation of character, sense of place and legibility at the site at Greenferns.

11.2 Character

Up to this section, the Development Framework has described the design principles of the Framework, providing a clear rationale for the proposed form, density and landuse through two dimensional explanatory diagrams. Whilst useful for conveying principles, these diagrams do not convey the desired character and sense of place which has been a key consideration throughout the design evolution of the Framework.

This section of the document looks at how the Development Framework will help create a distinct character, reflecting the combination of all the principles set out in this document to create an attractive new community at Greenferns.

Integration with existing landscape

The most significant aspect of the character of Greenferns will be informed and created by the treatment of the existing landscape features at Greenferns. The integration of existing landscape features such as walls, trees, field boundaries and key views into the layout will be key in defining the character of the new development. The Core Spaces and Greenways aim to provide an attractive setting, opportunities for recreation and also ecological improvement. The Bucks Burn, field boundaries, Greenferns Woodland and field boundaries are important landscape features which are fundamental to the Development Framework and the success of the development as a place. Key principles in the Framework such as ensuring that properties address these features, aim to foster a positive relationship and sense of stewardship between the community and these landscape elements and the larger ecological systems that they represent

Woodland

Generally across all development blocks buildings should address areas of open space and woodland where possible, helping enhance the character of Greenferns and foster a positive relationship between the community and the landscape setting.

Architecture

Architecture has an important role to play in creating and defining character at Greenferns. Well designed, high quality architecture with close attention paid to detail and material selection will be an essential part in creating an attractive and desirable place to live. Architecture should also strive towards the highest environmental standards, reducing energy consumption and helping the former Greenferns meet sustainable aspirations.

Whilst it is perhaps not appropriate to be too specific at this Development Framework stage of the design process with regards to architectural form, style and materials the following provides some general guidance which aims to influence the general character of architecture across the site.

Architectural form

Initial guidance relating to architectural form and typologies has already been provided within this document, presented through a combination of requirements relating to density, maximum building height, indicative housing mix and urban design. Generally however Greenferns aims to provide a mix of predominantly urban family housing across the site with built form responding to the hierarchy of streets and spaces.

The architectural form should relate to the different character areas, with perhaps a more urban response to the east and around the neighbourhood centre and lower density more rural character to the west and north overlooking the Bucks Burn.

Architectural Style

Within a development of this size there should be a variety of architectural styles across the site which respond to the existing context, the proposed hierarchy of streets and spaces and other influences such as density and topography.

As discussed within 'The Vision' in this document, the proximity of development to the Bucks Burn and rural edge provides an opportunity for an architectural style in contrast to where the site knits into existing Northfield area and a style reflecting the local vernacular will be more appropriate, alternatively a more contemporary approach to design may be appropriate.

Architectural Materials

The selection of architectural materials across the development should aim to convey a sense of quality, robustness and permanence.

Materials should be appropriately chosen to reflect their context and location within the proposed site layout. These should reflect the character areas that have been identified. The character areas could for example, manifest themselves in material selection around the proposed Greenferns Square reflecting the civic nature of the space and along the Bucks Burn park edge reflecting the rural location and agricultural heritage etc.

Palettes of materials should not be homogeneously applied across the site however care should be taken to ensure co-ordination.

Architectural variation

Variation of adjacent building heights, styles and typologies can provide interest within the urban form, creating distinctive streets and attractive roofscapes. Applying homogenous building styles or heights across the site must be avoided.

Boundary treatments

Plot boundary treatments have a huge influence on the quality of streetscape and definition of space. These can also play a large part in the creation of character across the site and help to reinforce the street hierarchy and legibility of the site. Front and side plot boundary treatments should be of high quality walls, hedges or railings. Design consideration should be given to how boundary treatments can be used to reduce the visual impact of refuse bins on the streetscape.

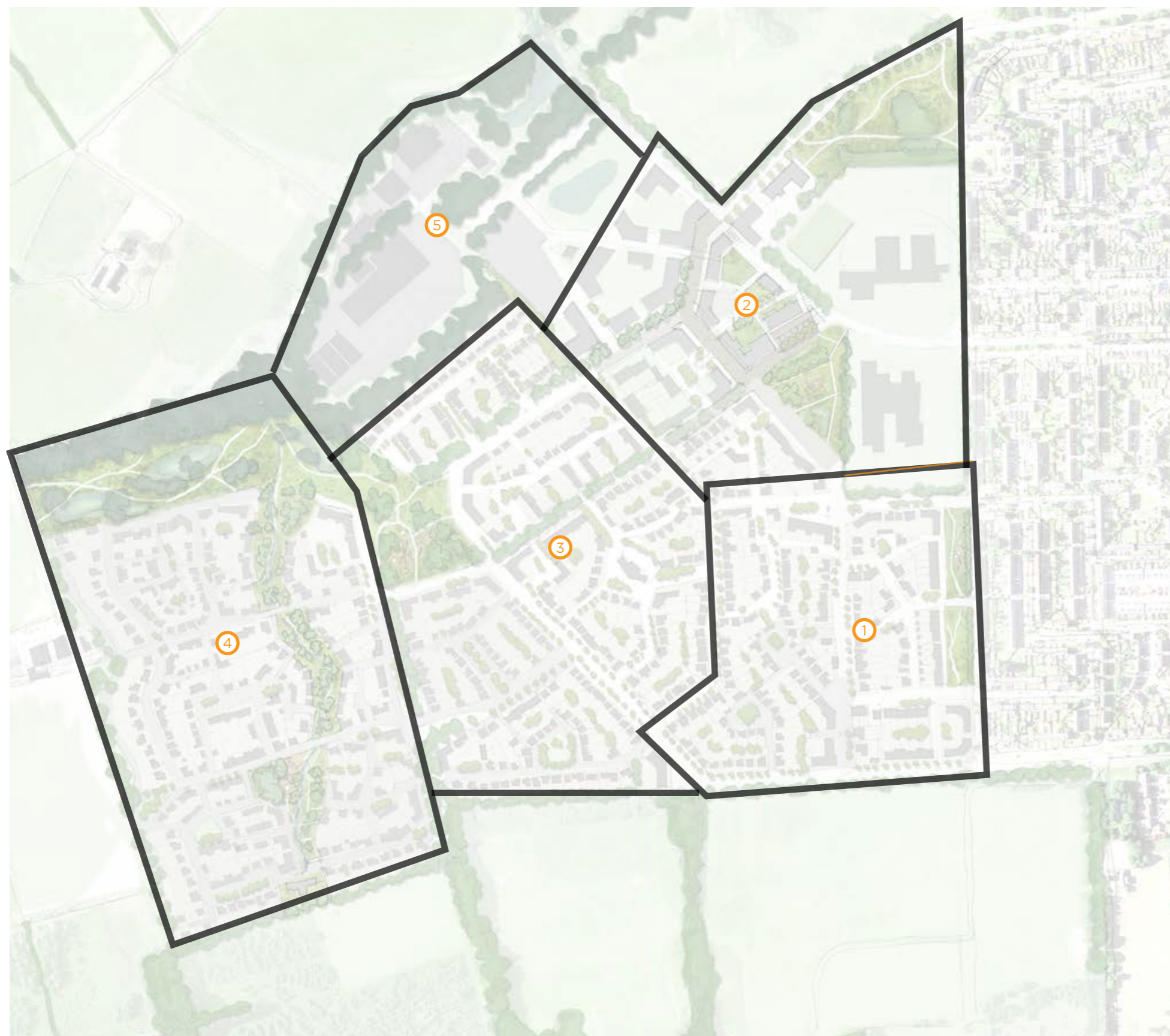


Fig. 94: Greenferns character areas.

11.3 Character areas

Five character areas have been identified across the Framework area which reflect a variety of anticipated approaches and identities. These will be progressed and refined at subsequent masterplan stages. In general, character areas draw from land use, existing landscape features and adjacent open spaces.

A general description of the desired character and key character forming aspects for each area is provided on the following pages. The purpose of this is to inform the development and future design of buildings, streets and spaces within each character area, to create distinctiveness across the site and avoid a homogenous built environment.

Character areas

1. Northfield edge
2. Neighbourhood centre
3. Sheddocksley core
4. Bucksburn rural edge
5. Howes Road (industrial site, not described as it has a specific character defined by the land use and setting)

Northfield edge

Within the Greenferns development the interface with Northfield will be one of the key areas to inform the overall character of the new development. New development must be organised in such a way as to allow good integration with the existing Northfield area whilst respecting the existing properties along Davidson Drive. The north - south alignment of Davidson Drive and existing field boundaries together will help define the structure for the area.

Key design principles and character aspects:

- High density urban area, reflecting the existing urban form within the Northfield area to the east.
- Largely rectilinear grid form of development driven by existing field boundaries and street connections running parallel to Davidson Drive.
- Broad mix of house types.
- Davidson Drive interface defined by public open space and good pedestrian and vehicle connections.
- Local access connections and pedestrian connections to Davidson Drive and Northfield area provided.
- East - west urban structure.
- Existing north south field boundaries to be retained and protected.
- Gateway in south east corner where the primary street connects to Provost Fraser Drive.
- Strong urban edge to overlook Sheddocksley sports pitches.
- Good links to Sheddocksley sports pitches promoted.
- Within the residential area, the existing field boundary should be retained as part of the development layout.
- The existing trees and walls will act to enhance the character of the streets and spaces to help create an interesting and recognisable place to live.



Fig. 95: Artist's Impression from Davidson Drive.

The neighbourhood centre

The mixed use centre of the Greenferns development, this area will have the most urban character of all the areas. It should define a clear centre for the community, focused around Greenferns Square which should be overlooked by adjacent shops, offices and community buildings. The urban character should incorporate both school sites and the business area to the north of the primary street, with office buildings and higher density residential areas defining the central focus for the Greenferns community.

The area should not be without some open space and landscape features with Heathryburn Park providing a point of integration between the schools, the existing community and the new community.

Key design principles and character aspects:

- Gateway in north east corner where the primary street connects to Provost Rust Drive. The street should be tree lined and use Block A as a landmark overlooking the park.
- Properties overlooking Auchmill Park and Golf Course.
- The tree lined character of Howes must be retained, providing a pedestrian route through the centre.
- The schools must be integrated into the design and character of this area with good connections provided.
- The primary street will provide a clear route into and through the neighbourhood centre. The character of the street should incorporate the 'Greenway' and be tree lined helping integrate adjacent areas.
- The business area to the north must seek to integrate with the neighbourhood centre. Providing a landmark building and high quality frontage to the north of the primary street.
- The area should be defined by high density residential development including flats and flats above non-residential ground floor uses.
- All non-residential uses should be located within this area.
- Community uses including the Health Centre must be integrated into the layout.
- Heathryburn Park should provide a focus within this area along with the Heathryburn Greenway.
- Greenferns Square should be designed to provide a main civic space for Greenferns, connecting Heathryburn Park and the primary street it should allow for spill out space and civic uses within the centre of Greenferns.



Fig. 96: Artist's Impression of neighbourhood centre character areas.

Sheddocksley Core character area

The character of this area should reflect the more central location within the development, providing some higher density development in a more formal arrangement. This character area is defined by a diverse range of residential densities held together with common response to adjacent areas of open space and Greenways. The area includes high, medium and low density residential areas. To the north, either side of the primary street the residential areas should be higher density with a character similar to the adjacent neighbourhood centre. The primary street and Provost Rust link should act to connect and integrate these areas. Between Heathryburn Link and Provost Rust link block F should have a compact and tight urban character. To the south and west the density should reduce and the character be less urban in response to the areas of open space which area overlooked.

Key design principles and character aspects:

- Higher density residential development to the north with lower density development to the south and west.
- The structure of the residential layout must take reference from the Greenways and field boundaries.
- The design of block I must take account of the business land to the north and should back onto the landscape area to the north.
- The primary street must incorporate street tree planting and good pedestrian routes/crossing points to provide an attractive feature connecting the character area.
- Provost Rust link should be a key feature within this area, allowing the open space and tree planting adjacent to the primary street and integrating the area with the neighbourhood centre.
- Heathryburn Link will provide a key feature within the area which adjacent residential areas should seek to connect with.
- The integration of Bucks Burn park to the west should be a key character forming element with large detached properties overlooking the open space.
- The existing trees and field boundaries must be retained and integrated into the design of streets and spaces within this area.
- Blocks J and K, located between Bucks Burn park and Sheddocksley sports pitches should be of a lower density with a more rural edge character.
- The architectural style and plot boundaries should reflect a less urban approach within this area. Including more detached properties, areas of amenity space, front gardens and tree planting.



Fig. 97: Artist's Impression from within Sheddocksley core character area.

Bucksburn rural edge

A lower density residential areas on the western edge of Greenferns. This area should be characterised by the rural edge location, the surrounding woodland to the south and west, existing field boundaries and the Bucksburn Corridor and Bucks Burn Park to the north. The housing within this area will largely comprise detached and semi detached housing with some higher density areas in key areas such as around areas of open space. The street arrangement should be less formal, integrating landscape features, amenity spaces, SuDS features and with clear links to the surrounding landscape areas to help generate a rural edge character. The streets and spaces should be design to allow views north and west to the surrounding countryside, Bucksburn and Brimmond Hill.

Key design principles and character aspects:

- Bucks Burn Park should define the northern edge, overlooked by surrounding properties this is a key features within Greenferns.
- The woodland edge to the west will tie the area in with the wider landscape character, provide shelter and an attractive edge to the development.
- Properties can back onto the proposed woodland, however, a pedestrian route must be provided within the woodland and good connections provided to adjacent residential areas.
- Greenferns farm must be carefully considered at the edge of the development.
- The access track to Greenferns Farm should provide a key pedestrian route through the area, with the existing walls retained as features.
- Greenferns Park should be designed around the existing woodland and field boundaries and provide a focal point for the community in this area.
- Existing field ditches and drainage channels should be retained and utilised as features within the layout where possible. These features do not form part of the open space network but should be itegrated within the block design.
- Sheddocksley Track will define the eastern edge of the development, it must be overlooked with good connection to it from adjacent residential areas.



Fig. 98: Artist's Impression of Bucksburn rural edge character areas.

12. Phasing

12.1 Phasing and Delivery

As one of the most prominent planning projects in Aberdeen, development at Greenferns will require a clear phasing strategy along with the coordination and planning of several activities. It will equally involve many different partners – developers, landowners and the Council to name only a few – that will need to be drawn together in a cohesive manner in order to deliver the best results.

The proposed phasing for the complete development at Greenferns for around 1,450 homes (range from 1,254 to 1,650) in a mixed use development has been devised to ensure that build-up of a new community is achieved in a coherent and logical way and within a well-structured landscape framework. The overall approach to phasing is a fully integrated one, combining in each phase, landscape, roads, services, as well as development proposals.

The phasing strategy for development, infrastructure, landscape and community facilities will ensure the development will feel like a “natural” growth to the west of Northfield. It is important that the implementation of development accounts for important issues such as changes in economic circumstances, variations in the land-use mix, its location, the rate and scale of development, improvements to the transport network, the timing of remediation and infrastructure works, the property market demand and supply, community regeneration projects, land assembly, development funding, infrastructure costs, site constraints and planning policy. Hence the fundamental need for flexibility.

The shape of new communities and quality of development will depend on strong long-term leadership and management to ensure that the overall Vision and Framework that is established in the Local Plan and Masterplan is maintained and that ad-hoc and incongruous development is avoided. Therefore, an important and parallel strand of work will be to discuss and establish the best delivery mechanism. A preferred developer(s) must discuss the preferred delivery mechanism for the area and include discussions on delivering affordable housing and other aspects of planning gain.

The proposed phasing strategy presented on the following pages, sets out the key principles for phasing and the broad direction for development and infrastructure construction. The general pattern and scale of development described and illustrated in this chapter is indicative only. With the phasing illustrated through five broad phases.

The initial phase in the Masterplan includes Blocks E2 and part of H to allow the OP28 development site identified in the Local Development Plan to come forward in the first phase. The subsequent phases are indicative only and present the strategy for growing the settlement in a coherent and logical manner.

12.2 Principles

The proposed phasing strategy following the key principles outlined below:

- The overall approach to phasing is a fully integrated one, combining in each phase landscape, roads, services as well as development proposals
- Beginning construction where development can take advantage of existing infrastructure and where new and existing residents can benefit from any new facilities;
- Ensuring development takes places in a sequence that “feels” like it is planned as the natural growth of the town and is not in isolated pockets in rural areas;
- Designing and constructing an appropriate amount of the landscape and public realm proposals simultaneously with development, to help create a new setting and identity for Greenferns;
- Ensuring facilities – local shops / bus routes – are in place as early as possible to meet demand
- Providing the transport facilities – particularly proposed bus routes and pedestrian links to the existing town to serve each phase; and
- Minimising the disruption caused by construction activity to local residents and road users during the development programme.

12.3 Existing Site

Existing schools

- Teaching at both of the existing schools will continue throughout development, consideration must be made to minimise disruption and danger to school children from construction traffic and site.
- The phasing of the potential extension of Heathryburn should be planned to minimise disruption from construction.

Bucksburn House

- Existing industrial and office units associated with Bucksburn House (Development Block B) will continue to be used for business uses.
- Access must be maintained to the site via Howes Road throughout the development process, however, new road access from the north should be a priority to remove traffic associated with the business uses from Howes Road in front of the schools.

12.4 Indicative Phasing Strategy

The following Phasing Strategy is indicative only, however aims to illustrate potential growth of Greenferns, balancing the provision of development with open space and community facilities and ensuring good public transport coverage.

The phasing of key pedestrian and cycle links is not shown on these diagrams however it is intended that throughout the phases, new routes and links will be constructed in association with development, ensuring that as destinations are created they are adequately served.

Generally the growth of Greenferns will occur from east to west in an integrated approach, combining in each phase landscape, roads, services as well as development proposals. The sequence of site development is based on, deliverability and in particular the need to provide infrastructure to service the site.

The development and viability of the Neighbourhood Centre will be dependent upon the surrounding development of Greenferns however it will be the aim to provide the non residential uses as early as possible.

12.5 Sustainability principles

Through delivery the proposals must be compliant with the requirements of the Climate Change Act. It might be that this is covered by the developers in each phase – but a holistic approach needs to be taken overall to ensure any systems implemented are compatible across all phases and flexible to change.

Some of the key principles that must be addressed through future planning submissions include;

- Overall lighting strategy.
- Compliance with BREEAM HQM or alternative sustainable construction scheme, use of locally sourced products, fabric first approach.
- Ensuring building design takes cognisance of adaptive measures at the design stage – wider guttering to accommodate more potential downpours, porous pavements, use of green infrastructure, having larger roof over-hangs to provide shelter for the building fabric from adverse weather etc.
- Careful consideration should be given to the location of the recycling and waste provision onsite.
- Digital connectivity and accessibility within the development must be considered.



Fig. 99: Development Framework - Phase A

12.6 Phase A

Open Space

- Heathryburn Park constructed, aiding integration with Northfield, providing SuDS facilities for development and recreation opportunities for new residents. Facing section of Greenferns' Link constructed.
- Auchmill Park

Infrastructure

- Primary street access from Provost Rust Drive, providing temporary bus hub and specific access to business / light industry sites B and C1.
- Primary street access from Provost Fraser Drive.

Development

- Development Block A
- Development Block C1
- Development Block E2

Development Block	% of Block Developed in this Phase	Landuse	Potential Number of Residential Units
A	100	Residential	18
C1	100	Business / light industry	0
E2	100	Residential	178
Total in Phase A			196

Notes:

- For non-residential land use areas please refer to page 79.
- Access to Block B must be maintained throughout the development.
- Access to north school must be maintained throughout the development.
- Block C1 is identified in this phase and improved access to B and C1 must be provided as part of the first phase, however, development within C1 could take place at a later date as the occupier requires.
- Potential Number of Units is taken from Average Density Range calculations for Development Blocks, see page 81.

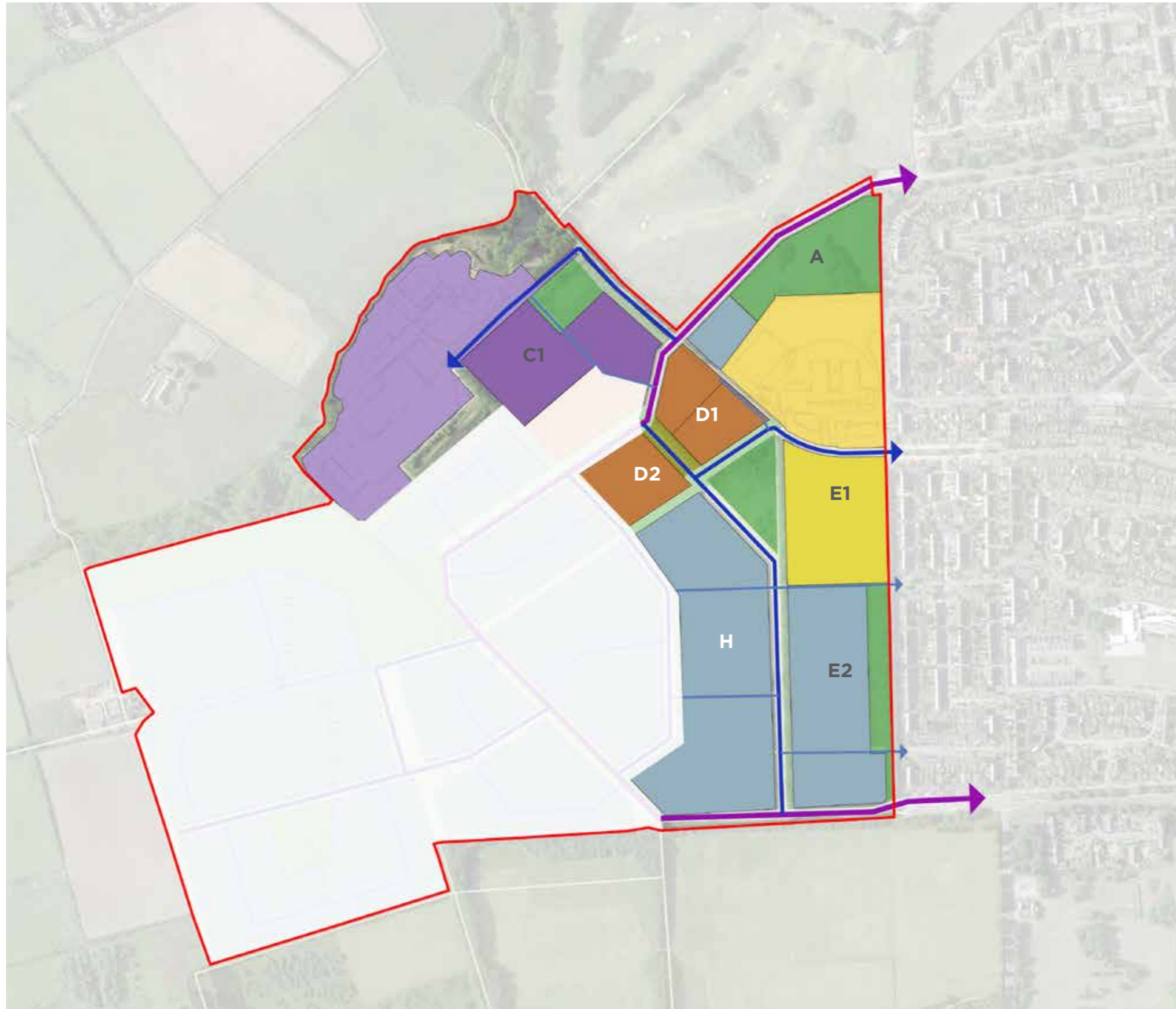


Fig. 100: Development Framework - Phase B

12.7 Phase B

Open Space

- Heathryburn Park completed and the eastern part of the Heathryburn link delivered.
- The civic space within the neighbourhood centre should be delivered.

Infrastructure

- Section of Primary street from Provost Rust Drive and Provost Fraser Drive constructed and connected with secondary street to allow public transport route option.

Development

- Residential development within Blocks D1 and D2 completed.
- The timing and delivery of the non residential uses within the neighbourhood centre, including the Medical Centre and shops will be determined by market demand but should be provided as soon as viable.
- Development Block H built out with residential.

Development Block	% of Block Developed in this Phase	Landuse	Potential Number of Residential Units
D1	100	Neighbourhood centre	34
D2	100	Neighbourhood centre	35
H	100	Residential	216
Total in Phase B			285

Notes:

- For non residential land use areas please refer to page 79.
- Potential Number of Units is taken from Average Density Range calculations for Development Blocks, see page 81.

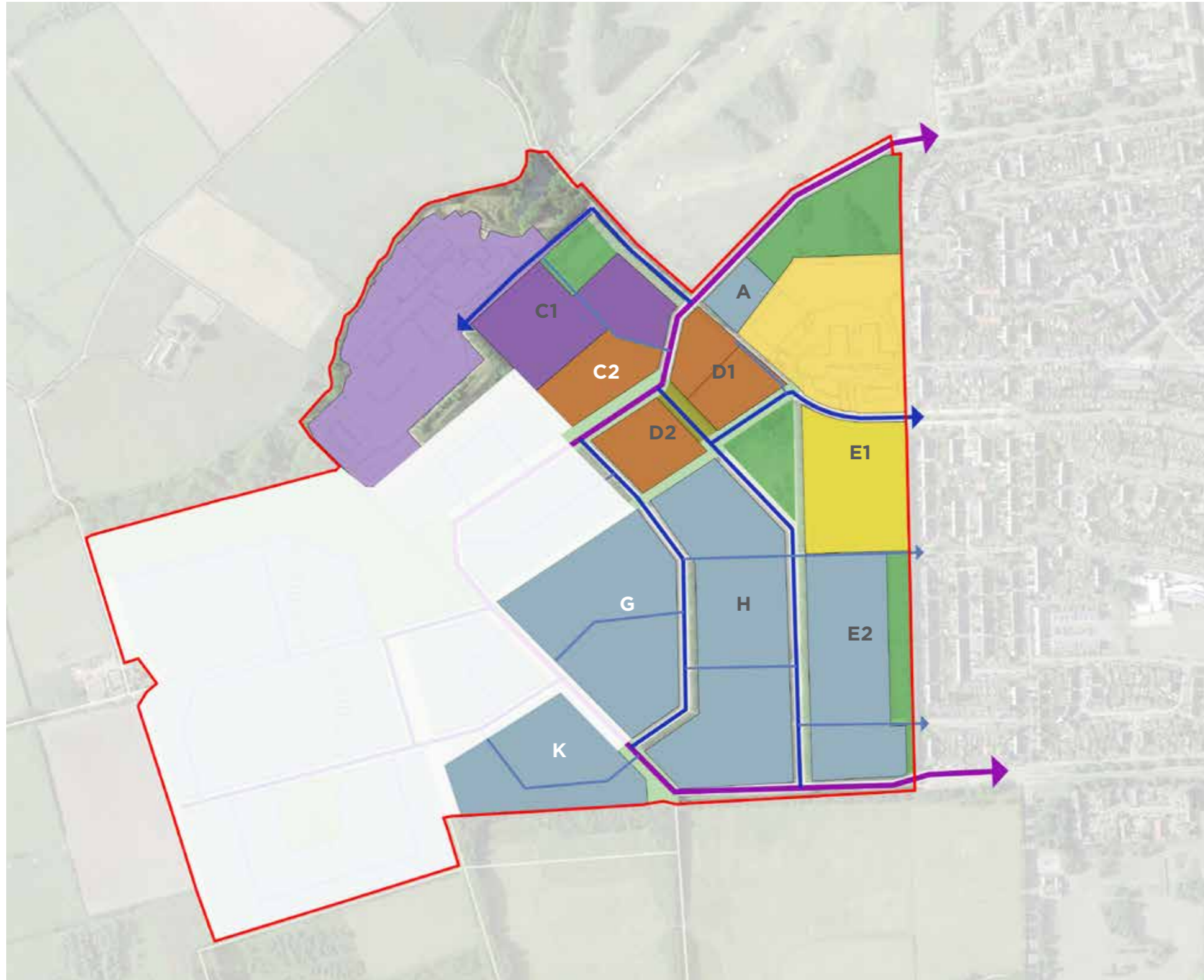


Fig. 101: Development Framework - Phase C

12.8 Phase C

Open Space

- Greenferns link delivered.
- Heathryburn link completed.
- Bucks Burn Park started to provide a location for the SuDS, a Play Zone and allow landscape areas the opportunity to establish.

Infrastructure

- Primary street extended both to the north and south and connected by secondary street between G and H.

Development

- Development Block C2, G and K built out as residential.

Development Block	% of Block Developed in this Phase	Landuse	Potential Number of Residential Units
C2	100	Neighbourhood centre	62
G	100	Residential	164
K	100	Residential	106
Total in Phase C			332

Notes:

- For non-residential land use areas please refer to page 79.
- Potential Number of Units is taken from Average Density Range calculations for Development Blocks, see page 81.





Fig. 102: Development Framework - Phase D

12.9 Phase D

Open Space

- Bucks Burn Park completed
- Greenferns Park
- Sheddocksley Link

Infrastructure

- Primary Street loop completed
- Secondary Street connection to Block M provided.

Development

- Development Blocks F, I and J built out as residential.

Development Block	% of Block Developed in this Phase	Landuse	Potential Number of Residential Units
F	100	Residential	98
I	100	Residential	83
M	100	Residential	187
Total in Phase D			368

Notes:

- For nonresidential land use areas please refer to page 79.
- Potential Number of Units is taken from Average Density Range calculations for Development Blocks, see page 81.

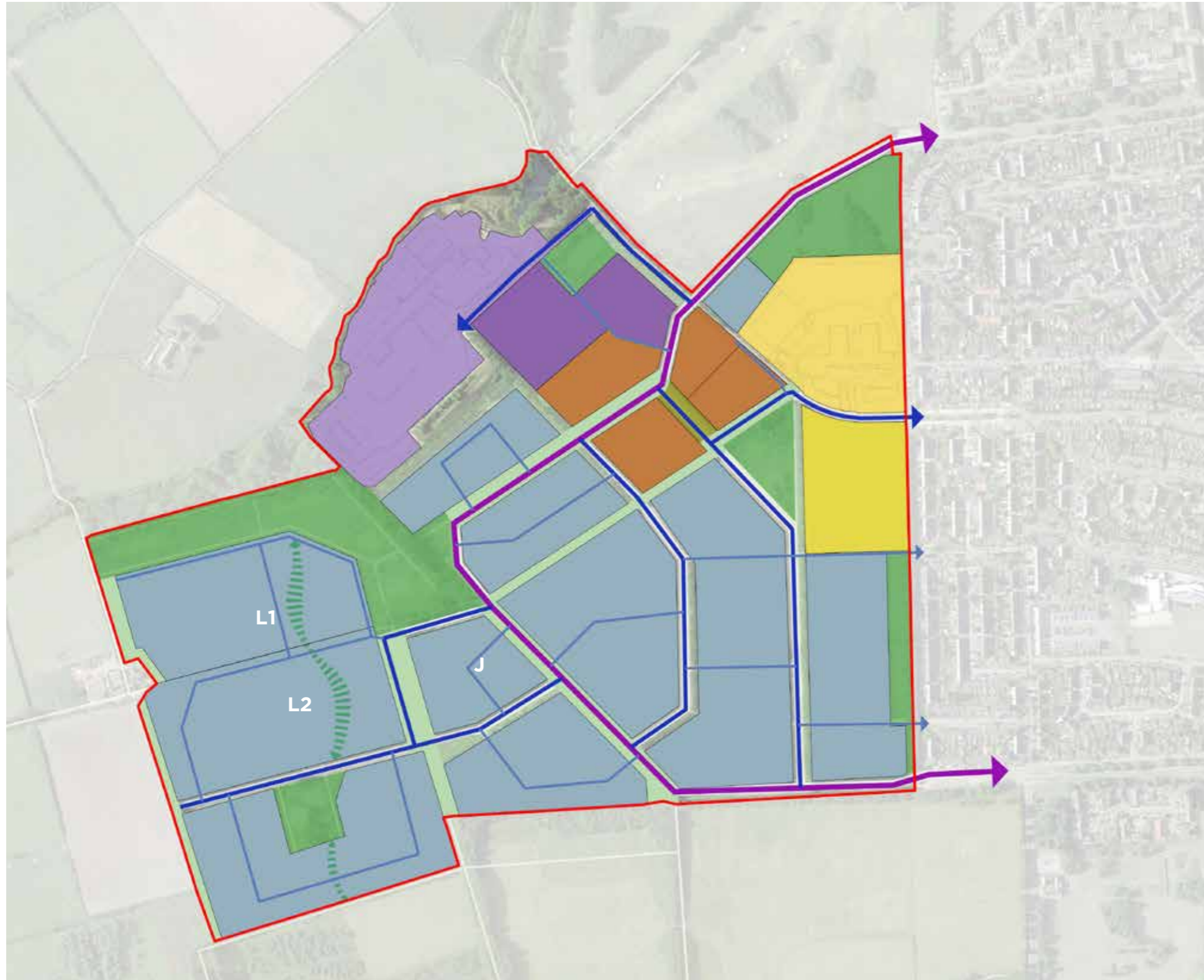


Fig. 103: Development Framework - Phase E

12.10 Phase E

Open Space

- Bucks Burn Park completed
- Greenferns link completed

Development

- Development Blocks J, L1 and L2 built out as residential.

Development Block	% of Block Developed in this Phase	Landuse	Potential Number of Residential Units
J	100	Residential	51
L1	100	Residential	75
L2	100	Residential	145
Total in Phase E			271

Notes:

- For non-residential land use areas please refer to page 79.
- Potential Number of Units is taken from Average Density Range calculations for Development Blocks, see page 81.

13. Infrastructure delivery

The following text aims to set out how and when it is intended to deliver the infrastructure associated with Greenferns (OP28 and OP33). This remains indicative at this stage and will be finalised through the Planning Permission in Principle/Section 75 agreement. The ALDP Action Programme (2017) has been referenced to formulate this delivery statement. The table below sets out the key requirements extracted from the Action Programme and describes an approach to delivery as appropriate to this stage of development. Further information on what infrastructure is required to be delivered and when is contained in the ALDP Action Programme.

Category	ALDP Action Programme item	Understanding of requirement	How to deliver	When to be delivered	Parties involved
Affordable Housing	As per ALDP Policy	The development has an allowance for 453 units or 25% whichever is the higher. This will be subject to a legal agreement in the form of a Section 75.	Delivery to be agreed following discussion with ACC's Housing Strategy and Performance Service, Planning Gain and Shaping Aberdeen Housing LLP (SAH LLP).	The phasing of the requirements will be discussed with ACC and SAH LLP and linked to the phasing of the development, taking into account other infrastructure requirements. As documented through S75 and Shaping Aberdeen Housing LLP's approved Business Plan.	ACC, Planning Gain team, affordable housing providers and SAH LLP.
Walking & Cycling	Strategic east west link through site connecting Howes Road to Kingswells path network.	Route to be identified within Development Framework boundary.	On site requirements to be delivered by SAH LLP.	In parallel with adjacent, on-site, development.	ACC and SAH LLP.
	Strategic North South route linking to OP32 Maidencraig North.	Route to be identified within Development Framework boundaries to connect to existing paths to south of site and Core Path 45.	On site requirements to be delivered by SAH LLP.	In parallel with adjacent, on-site, development.	ACC and SAH LLP.
	East West link connecting OP32 Maidencraig North to Northfield (Core Path 45 upgrade).	Given the distance to Core Path 45 from the site it is deemed more appropriate that a contribution be made.	Contribution to be agreed following discussion with ACC and Planning Gain team.	The phasing of the requirements will be discussed with ACC and linked to the phasing of the development, taking into account other infrastructure requirements.	ACC, Planning Gain team and SAH LLP.
	Links to Westhill/Aberdeen cycle route. Study underway to review A944 cycle route for consistency from Kingswells to Westhill.	Routes connecting to existing path network to be identified within Development Framework boundary. Contributions may be made to connections off site if deemed appropriate.	Contribution to be agreed following discussion with ACC and Planning Gain team.	The phasing of the requirements will be discussed with ACC and linked to the phasing of the development, taking into account other infrastructure requirements.	ACC, Planning Gain team and SAH LLP.
Public Transport	Frequent public transport services to serve the whole masterplan area which may include extensions to existing services.	Development Framework identifies potential routes and locations for bus stops which would ensure all development blocks fall within 400m of bus route.	The street network will be designed and delivered to allow bus access where required. Locations of bus stops will be identified at appropriate locations and delivered through discussions with ACC and bus operators' In general terms the majority of bus services will connect to Provost Rust Drive and Provost Fraser Drive however roads through the site will ensure the ability to connect to other locations. ACC Public Transport Unit responsible for delivery.	Linked to the phasing of the development.	ACC, SAH LLP and Bus operators.
	May be possibility for Public Transport-only link connecting OP33 Greenferns and OP32 Maidencraig North.	This requirement has not been raised through the design process due to good quality existing service.	na	na	na

Category	ALDP Action Programme item	Understanding of requirement	How to deliver	When to be delivered	Parties involved
Roads	Through the masterplan process and transport assessment to determine the requirements for development. Road access from OP33 Greenferns to Provost Rust Drive and Provost Fraser Drive.	Street hierarchy identified in the Development Framework and supported by initial transport studies. Upgrades and connections to the local road network with appropriate design standards to accommodate forecasted traffic volumes. The detail will be determined through the Transport Assessment process carried out as part of future Planning Applications.	Connection to the existing road network will be provided with appropriate design standards to accommodate forecasted traffic volumes. This will be determined through the Transport Assessment process and the timing of delivery will form part of the section 75 agreement or planning conditions. Improvements to the local road network will also be determined through the Transport Assessment process. It is proposed that streets will be constructed to adoptable standards and adopted by ACC. Streets will be delivered in line with the phasing strategy.	Linked to the phasing of the development.	ACC and SAH LLP.
	Investigate the potential for a bus hub connecting the existing bus services on Provost Fraser Drive, Provost Rust Drive and potential connection to Newhills South.	Public transport routes and bus hub identified in the Development Framework.	The street network will be designed and delivered to allow bus access where required. Locations of bus stops will be identified at appropriate locations and delivered through discussions with ACC and bus operators' In general terms the majority of bus services will connect to Provost Rust Drive and Provost Fraser Drive however roads through the site will ensure the ability to connect to other locations. ACC Public Transport Unit responsible for delivery.	Linked to the phasing of the development.	ACC, SAH LLP and Bus operators.
Water	Water - This site is service by Fernhill Water Supply Zone. A Water Impact Assessment is required to confirm capacity in the off-site main to Grandhome. Development on higher contour levels may require pumping.	A Full Water Impact Assessments and Drainage Impact Assessments will be carried out and the full extent of upgrades understood by the SAH LLP to be prepared and submitted as part of the appropriate statutory planning and legal processes.	Improvements will be implemented as per the agreed phasing with Scottish Water.	The phasing of the requirements will be identified by the Drainage Impact Assessment and Scottish Water Development Impact Assessment and linked to the phasing of the development	SAH LLP, Aberdeen City Council and Scottish Water.
	Wastewater - This development will have an impact on the sewers and pumping stations downstream, all the way down to the WWTW. A DIA will be required to identify possible mitigation. A model is being built by Scottish Water as part of the Aberdeen Wastewater Strategy. This will help to identify where in the network investment is required. Foul drainage will be required to conform to "Scottish Water's current design standards and connect to the public sewer/be adopted by Scottish Water.	A Full Water Impact Assessments and Drainage Impact Assessments will be carried out and the full extent of upgrades understood by the SAH LLP to be prepared and submitted as part of the appropriate statutory planning and legal processes.	Improvements will be implemented as per the agreed phasing with Scottish Water.	The phasing of the requirements will be identified by the Drainage Impact Assessment and Scottish Water Development Impact Assessment and linked to the phasing of the development.	SAH LLP, Aberdeen City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA).
	All proposed development must be drained by Sustainable Drainage Systems (SUDS) designed in accordance with the CIRIA SUDS Manual (C753)and developers must submit a Drainage Assessment/Drainage Strategy for any development proposals coming forward in line with PAN 61, Policy NE6of the Local Development Plan and Supplementary Guidance on Drainage Assessments.	The Development Framework indicates high level space requirements for SuDS. The Drainage Strategies will be prepared to be submitted as part of the appropriate statutory planning and legal processes.	The development will be drained via Sustainable Drainage Systems (SUDS) designed in accordance with the CIRIA SUDS Manual (C697) and developers must submit a Drainage Assessment/ Drainage Strategy for any development proposals coming forward in line with PAN 61, Policy NE6 of the Local Development Plan and Supplementary Guidance on Drainage Assessments.	The phasing of the requirements will be identified by the Drainage Strategy and linked to the phasing of the development.	SAH LLP, Aberdeen City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA).
	Developers should look for opportunities to protect and improve the water environment by taking account of the water features within and close to their sites.	The Development Framework indicates high level space requirements for SuDS. The Drainage Strategies will be prepared to be submitted as part of the appropriate statutory planning and legal processes. The Development Framework identifies opportunities for enhancing the existing water courses within the site as part of the open space network.	Through the Development Framework the opportunity has been taken to enhance the existing watercourses and fully incorporate them within the development layout as part of the network of core public spaces. The final configuration of measures employed will, however, be subject to further considerations of practicality and achievability at the detailed design stage in consultation with SEPA and the Planning Authorities. All watercourses should be protected within a suitable area of open space in accordance with Aberdeen City Council's Buffer Strips Guidance. On site requirements to be delivered by developers and any other environmental enhancement measures to be investigated and where viable delivered through any subsequent planning application(s).	The phasing of the requirements will be identified by the Drainage Strategy and linked to the phasing of the development.	SAH LLP, Aberdeen City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA).

Category	ALDP Action Programme item	Understanding of requirement	How to deliver	When to be delivered	Parties involved
Water	Site OP33 (or part of) is at risk of flooding. Developers will be required to provide a Flood Risk Assessment (FRA) in support of any development proposals for this site.	An initial Drainage Assessment has been prepared to inform the Development Framework and any potential issues with flooding have been addressed in the layout accordingly. A full FRA will be prepared to be submitted as part of the appropriate statutory planning and legal processes.	The Development Framework has taken account of information from the Drainage Assessment. As part of any application for Planning Permission in Principle the detail proposals will take account of information from the FRA.	The requirements will be identified by the FRA and linked to the phasing of the development. The flood risk assessment(s) should address all sources of flood risk to the site including fluvial flooding from the Bucks Burn and from smaller watercourses not included on the SEPA Flood Maps	SAH LLP, Aberdeen City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA).
	Any masterplan should take account of the existing water features within the site, the pressures which apply to these features and should direct developers to look for opportunities to protect and improve the water environment.	The Development Framework indicates high level space requirements for SuDS. The Drainage Strategies will be prepared to be submitted as part of the appropriate statutory planning and legal processes. The Development Framework identifies opportunities for enhancing the existing water courses within the site as part of the open space network. Any future Masterplan should take a more detailed look at the existing water features within the site area.	Through the Development Framework the opportunity has been taken to enhance the existing watercourses and fully incorporate them within the development layout as part of the network of sustainable urban drainage system (SuDS) and core public spaces. All watercourses should be protected within a suitable area of open space in accordance with Aberdeen City Council's Buffer Strips Guidance. On site requirements to be delivered by developers.	The phasing of the requirements will be identified by the Drainage Strategy and linked to the phasing of the development.	SAH LLP, Aberdeen City Council, Scottish Water and the Scottish Environment Protection Agency (SEPA).
Education	The timing of new and extended educational facilities will be determined in negotiation with developers, with the numbers of school aged children residing in the area to be monitored on a regular basis.				ACC, Planning Gain team and SAH LLP.
	One new Primary School (including land) and including Nursery & Community Learning and Development Facilities is required. An extension to Heathryburn Primary School may also be required.	It was agreed with Aberdeen City Council that a new Primary School was not required on site. The site is currently zoned to Westpark Primary School where it is understood capacity for pupils exists. Future educational capacity is currently under review by Aberdeen City Council. It is anticipated that a financial contribution will be made.	Contribution to be agreed following discussion with ACC and Planning Gain team.	The phasing of the requirements will be monitored with ACC and linked to the phasing of the development and school capacity.	ACC, Planning Gain team and SAH LLP.
	Additional capacity is likely to be required, and provided by the developer, at Northfield Academy to accommodate pupils generated by this development.	Aberdeen City Council to monitor and review requirements.	Contribution to be agreed following discussion with ACC and Planning Gain team.	The phasing of the requirements will be monitored with ACC and linked to the phasing of the development and school capacity.	ACC, Planning Gain team and SAH LLP.
Health	Planning Gain Contributions and Land (where identified) will be required to support the provision a new Health Centre (including land already identified) in the Greenferns area to support the General Medical Services for the additional patients from the OP33 Greenferns development. Will require to accommodate a 7 GP Unit for 4 existing GP's with 3 extra GP's to support the developments. 3 additional Dental Chairs in the recommended new Health Centre at OP33 Greenferns.	The Development Framework identifies a site of (0.80ha/2.00acres) for a new Health Centre within the neighbourhood centre.	NHS Grampian to advise of requirements during subsequent Planning Application process. Planning Gain to negotiate Developer Contributions. NHS Grampian to deliver.	The phasing of the requirements will be discussed with ACC and NHS and linked to the phasing of the development, taking into account other infrastructure requirements.	ACC, Planning Gain team, NHS and SAH LLP.

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