

Application for Planning Permission in Principle
October 2013



Infrastructure Statement

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1. Introduction

- 1.1 This report has been prepared on behalf of Grandhome Trust in support of its application to Aberdeen City Council for Planning Permission in Principle (PPIP) for a sustainable urban extension comprising up to 4,700 dwellings, together with associated retail and commercial development, community facilities, amenities, services and infrastructure on a 227ha site at Danestone, approximately 6km north west of Aberdeen city centre.

Purpose

- 1.2 The purpose of this Statement is to set out thematically what infrastructure is necessary to support the development and to sustain its community, and when it is expected to be delivered. In some cases, the Statement explains how infrastructure may itself be phased to meet essential needs without compromising the viability of the development in the initial stages. This statement identifies the infrastructure that will be delivered to ensure that the first phase is 'effective' in 2015, with the first houses expected to be occupied that year.
- 1.3 This Statement should not be read in isolation, but together with the other planning application documents which include: Masterplan Drawings; Environmental Impact Assessment; Planning & Design Statement; Landscape Strategy.
- 1.4 Reference should also be made to the Development Framework which has been approved by Aberdeen City Council as Interim Planning Guidance. The process to ratify the Framework as Supplementary Guidance by the Scottish Government has commenced.

Vision

- 1.5 The vision for Grandhome is the creation of a new mixed-use urban extension of Aberdeen, catering for the city's anticipated growth over the next 10-20 years whilst adhering to the principles of place-making and responding to the traditional vernacular.
- 1.6 The vision is underpinned by six core principles:

Strong Sense of Place

Grandhome will have a strong Donside identity and character, rooted within the vernacular of northeast Scotland. Architecture will respond to the context and traditions of the area to remain compatible with the surrounding communities of the Bridge of Don.

Sustainable and Walkable Neighbourhoods

Grandhome's masterplan is made up of a series of neighbourhoods, each of which is designed so that residents can access schools, shops, employment opportunities and community facilities within walking distance of their homes. By optimising the range of local facilities over time, residents will be less car dependent than other communities, promoting a sustainable lifestyle.

A Well-balanced Mixed Community

Grandhome will aim to become a self-sustaining development, with housing, employment and community facilities integrated within each neighbourhood. Each neighbourhood will comprise a mix of different sizes and designs of homes at different price levels, including 25% affordable housing.

Green Spaces to Breathe

Grandhome will include an extensive green network, crossing the site from both north to south and east to west. Different green spaces will combine to provide a mix of formal recreation, walking areas and informal relaxation. The landscape plan also preserves key elements of the site in naturalistic, untamed areas, and creates safe corridors for local wildlife.

Well-Connected Streets

Grandhome is designed to follow the progressive principles of the Scottish Government's 'Designing Streets' policy. The various neighbourhood phases are designed to maximise connections using streets, promote walking and cycling, and combine together to make an attractive, traditional place.

A New Centre for the Bridge of Don

Grandhome will be sympathetically integrated into the surrounding community and over time will provide a range of employment, retail and other local services including opportunities for new businesses of different sizes, strengthening the lifestyle and choices for local people.



Fig 1: Grandhome Masterplan

- Mixed-Use Buildings
- Office Buildings
- Single-Use Commercial Bldgs.
- Indicative Footprints
- Plots
- Schools
- Civic Buildings
- Existing Buildings
- Open Space
- SUDS
- Site Boundary

1.7 Although not part of the current application proposals, the site actually has capacity to extend further. To this end the masterplan for the site looks beyond 2023 to demonstrate how the new community could grow to approximately 7000 units in the longer term. Whilst the infrastructure identified in this statement relates only to the 4700 units that are currently proposed, regard has also been had to the need to integrate the infrastructure provide with any future expansion of the site.

Description of Development

1.8 Planning Permission in Principle is sought for the following:

“A mixed-use community comprising up to 4,700 homes, town centre (including commercial, retail and leisure uses and hotel), 5 ha of employment land, neighbourhood centres (including commercial, retail and leisure uses), community facilities, energy centre, open space, landscaping, and supporting infrastructure including mean of access”

1.9 The development and phasing schedule for the site is set out below, along with the corresponding phasing plan.

1.10 At this stage a build out rate of 200 units per annum has been assumed based upon our understanding of likely demand for new housing (see schedule at Appendix 1). However the development, including the supporting infrastructure, could be brought forward at a faster rate if there was sufficient demand.

Table 1: Indicative Development Schedule

Class	Use	Type	Laverock Braes		Town Centre		Clerkhill		Whitestripes/ Bonnyside		Whitesripes/ Bonnyside		TOTAL
			Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		
			Site (ha)	GFA (sqm)	Site (ha)	GFA (sqm)	Site (ha)	GFA (sqm)	Site (ha)	GFA (sqm)	Site (ha)	GFA (sqm)	
1	Retail	Convenience		729		7380		577		360		840	
		Comparison				5000							
		Bulky				5000							
		Supermarket			0.73	2700							
		Total		729		20080		577		360		840	22,586
2	Financial & Professional		122		1230		96		60		140	1,648	
3	Food & Drink		365		3690		289		180		420	4,944	
4	Business (Office)			0.52	3218		14938					18,156	
5	Industrial												
6	Distribution												
7	Hotels			0.57	4,500 (75 rooms)							4,500 (75 rooms)	
8	Residential Institution												
9	Residential			500 units	1,800 units		500 units		1,100 units		800 units	4,700 (units)	
10	Non-Residential Institution	Civic/Community	0.08	240	0.63	3760	0.11	210	0.26	720			
		School			3.67	3375	11	18375					
		Total		240	4.3	7135	11.11	18585		720	0	0	26,680
11	Assembly & Leisure			0.42	2200							2,200	
	Sui Gen												
SUB TOTAL				1455		42053		34485		1320		1400	80,713

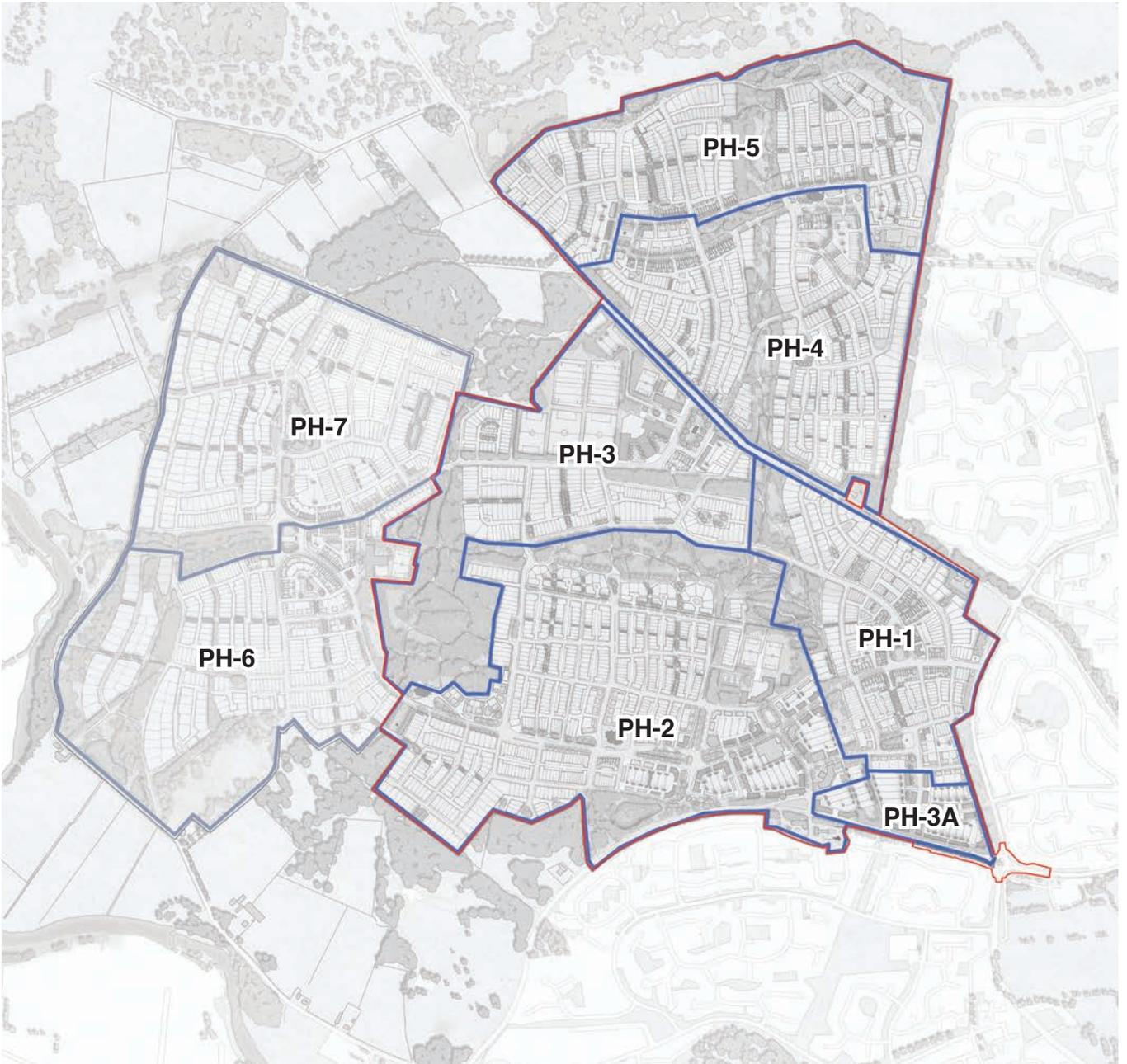


Fig 2: Phasing Plan

2. Transport

Principles

- 2.1 The key transport principles of the development are as follows:
- The development will capitalise on its proximity to regional facilities and employment hubs and local amenities through enhancement of pedestrian and cycle links and public transport provision in the surrounding area.
 - The development should be designed to include all of the facilities necessary for residents' daily needs and employment. This can ultimately lead to decreased car dependency and reduce the need to travel by car.
 - Thoroughfares should be designed to accommodate many forms of transport, including vehicular transport, public transport, cycling and walking. Car parking should also be provided in an aesthetically sensitive manner, and should not overwhelm street facades.

Proposals

Access Strategy

- 2.2 The development of Grandhome is being delivered alongside a package of strategic enhancements to the wider transport network including the Third Don Crossing, the Aberdeen Western Periphery Route (AWPR) and improvements to the Haudagain roundabout as well as a number of associated strategic improvements which are still to be identified. Together these improvements will significantly increase the capacity presently available on the network to enable it to accommodate the developments allocated in the Local Development Plan, including Grandhome.
- 2.3 Within the framework of these wider strategic improvements to the network, several local

interventions are proposed specifically to provide vehicular access to the development site. The key elements of the access strategy are outlined below:

- 2.4 The Grandhome Trust will implement the following works in support of the phasing of the development:

2018 - 500 homes:

- Beyond new junction improvements in support of Phase 1 on Whitestripes Road and Whitestripes Avenue, no additional infrastructure upgrades are required.

2023 - 1500 homes:

- The northern element of the Parkway junction;
- Minor Lane alterations at Buckie Farm roundabout.

2032 - 2000 homes:

- First phase signalisation of Buckie farm roundabout (using no third-party land);
- Parkway South and duelling to Buckie.

2038 - By 4,700 homes:

- Junction at Whitestripes Avenue and Whitestripes Road upgraded.

- 2.5 Across all of these phases will be the gradual improvement of Whitestripes Road which will keep pace with the development of frontage along that corridor.

Public Transport

- 2.6 The area surrounding the site is already relatively well served by public transport. The A90, A96 and A947 corridors all support frequent bus services, with First Aberdeen services in the vicinity of Grandhome terminating in the established residential areas of Danestone (service 1), Ashwood (service 2) and Dubford (service 4). It is envisaged that new or extended bus routes will be delivered in support of the development providing

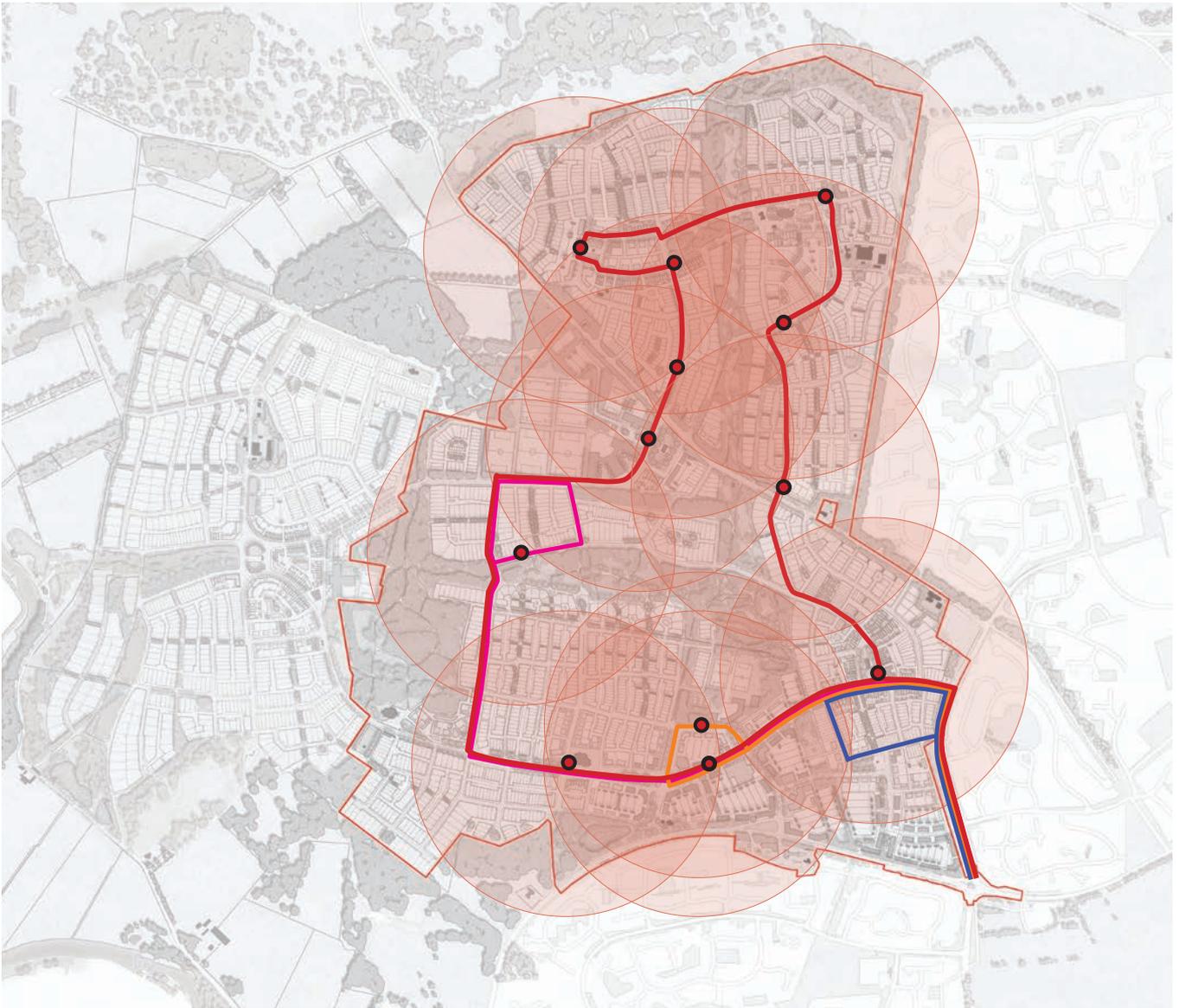


Fig 3: Potential Public Transport Bus Route



connectivity from the site to principal employment centres, transport nodes and other attractions in the City Centre and at other locations across the city such as Dyce and Aberdeen Airport.

2.7 Bus routes have been identified for phased implementation with the initial phases of development served by a variant of First service 1 which will operate via Whitestripes Avenue to the development. An initial loop service will then be provided serving Phases

1 to 3 which links the town centre to the western neighbourhood centre and community campus. This loop is expanded to serve Bonnyside and Whitestripes, north of Whitestripes Avenue at Phases 4 and 5. A further route is anticipated to be required to serve Phases 6 and 7. Bus stops are located within a short walk of all homes in line with policy which requires access to bus services within a 400m walk distance. The location of stops within neighbourhood centres will allow passengers access to shops and other facilities as an integral part of their journey.



Fig 4: Cycling and Footpath Network

- ■ ■ ■ Cycling and Footpath Routes
- ● ● ● NCN 1
- - - - Site Boundary
- — — — Other Pedestrian Connections

Pedestrian & Cyclists

2.8 The modular pattern of the masterplan is designed to ensure a high degree of pedestrian access within each neighbourhood and beyond. This is reinforced by a network of streets intended to optimise connections between the neighbourhoods, the town centre and the surrounding area. Linkages to surrounding areas will be made on a phase-by-phase basis with Phase 1 connecting to the existing Core Path to the north east of this Phase, connecting via Whitestripes Avenue.

3. Energy

Principles

3.1 As a Scottish Sustainable Communities Initiative (SSCI) development the requirements to move towards a low carbon economy have been fully incorporated in the Grandhome masterplan. Development on the site will incorporate sustainable energy practices in development such as promoting energy efficiency through building orientation design and materials as well as the provision of Low and Zero Carbon Generating Technologies (LZCGT) .

Proposals

Gas

3.2 Discussions with SGN Connections have been carried out to agree the strategy for servicing the new development. The first phase can be accommodated from the existing gas main which runs along the A90 with a connection at Buckie Farm roundabout. It is probable that no further reinforcement of the network will be required in support of the 4,700 homes, but this is being investigated further.

Electricity

- 3.3 Phase 1 will be served by a connection to an existing 11kv network at Buckie Farm roundabout. The existing 3 wire 11kv pole mounted overhead supply will need to be removed or diverted.
- 3.4 Future phases are likely to be accommodated by spare capacity at Whitestripes and Haudagain substations.
- 3.5 Later phases 6-7 may need a 33kv/11kv substation on site.
- 3.6 There is a 132kV National grid transmission line system installed through the site. It is not envisaged that this will be relocated, with the an integrated corridor of open space being provided around these existing pylons.

- 3.7 Low and Zero Carbon Generating Technologies (LZCGT) will become an integral part of the Grandhome development. The submitted Outline Energy Strategy identifies a full range of commercially available and potentially viable LZCGT suitable for the site. The selected technology will be phased in as the development grows.
- 3.8 The strategy identifies a number of potential LZCGT options, informed by the unique characteristics of the site including the scale of the development, the diverse mix of uses, the long timescale of the development and available natural resources. The widespread use of district and community heating led by biomass, with building integrated solutions where the development density prevents the use of district heating from being economically viable, is identified as the most suitable option for the site at this stage. The energy strategy for the site will be developed as the detailed design for the site is developed.

4. Telecommunications

Principles

- 4.1 Provision of a modern telecommunications network will be vital to the success of the development. Scotland's Digital Future: A Strategy for Scotland sets out aspirations for next generation broadband to be available to all people in Scotland by 2020 and Grandhome's aim is to provide a range of wholesale and retail 'next generation' voice, data and video services via a suitable 'next generation' fibre platform.
- 4.2 Superfast broadband at Grandhome will be one of the main attractions to developers and occupants of the development. It will also need to be designed to meet legislative and planning requirements and support the vision for a sustainable community through enabling working from home.

Proposals

- 4.3 A development of the scale and importance of Grandhome will almost certainly be sufficient to allow BT Openreach, or any other Ofcom regulated open-access or closed-access voice-data-video network providers, to invest in a Fibre to the Home (FTTH) platform. It is anticipated that FTTH at Grandhome could deliver "superfast broadband" speeds of up to 320Mbps. This "superfast broadband" could provide the Grandhome development with a very high degree of future proofing, increasing homeworking and community intranet capability.

5. Water

Principles

- 5.1 In accordance with the development's overarching sustainability objectives, water demand is to be reduced through a demand management strategy to include metering and low flow fittings, with grey-water recycling and rainwater harvesting where feasible and in managed buildings. Not only would this reduce water usage but it would also contribute to a reduction in foul water discharge.

Proposals

Waste Water

- 5.2 All foul sewerage will flow down a new sewer along the A90 Parkway to the Persley Waste Water Treatment Works.
- 5.3 Owing to levels, Phases 1, 3, 3A and 5 will require pumping stations to lift the foul sewerage up to the new trunk sewer. Remaining phases will use gravity.
- 5.4 Details of pumping stations will be brought forward on a phase by phase basis at the appropriate infrastructure design stage.

Water Supply

- 5.5 Early stages of Phase 1 will be serviced by existing water infrastructure.
- 5.6 Later stages will be serviced by a 3.8km main to be laid between the site and Fernhill Reservoir.
- 5.7 To ensure that there is sufficient storage capacity to service the development, Scottish Water has indicated that a new storage reservoir may be required. We are continuing to liaise with Scottish Water to determine further information on this potential requirement.

6. Surface Water Drainage

Principles

- 6.1 In accordance with Scottish Planning Policy (SPP) and all associated legislation and technical guidance it is proposed to implement Sustainable Urban Drainage System (SuDS) throughout all phases of the development to ensure that a robust stormwater management strategy will be in place. The stormwater philosophy throughout the development will be based on consideration of the existing conditions and hydrology and seek to ensure that the post-development conditions replicate the pre-development conditions as closely as possible.
- 6.2 The SuDS treatment train philosophy will be applied at Grandhome, utilising a sequence of SuDS features arranged to ensure run-off passes through the required number of treatment levels prior to reaching the receiving watercourse:
- Run-off from roof areas to be provided with one level of surface water treatment
 - Run-off generated by residential paving, car parking areas and shared surfaces will be provided with two levels of surface water treatment
 - Roads will also be provided with two levels of surface water treatment
- 6.3 A series of SuDS features will be adopted which depend on the specific technical requirements for each phase of the works. Typically these will include the following:
- Private 'at-source' features such as water butts; green roofs (where applicable); private permeable paving; soakaways and filter trenches
 - Public 'at-source' features such as adopted permeable paving; bio-retention planters
 - Infiltration basins and swales
 - Detention basins
- 6.4 To ensure the successful operation of SuDS features and to encourage a more integrated SuDS scheme it is proposed to limit the size of individual storage areas, incorporating them into the built environment without compromising the key aspects of the urban design and layout

Proposals

- 6.5 The principles set out above will be implemented on a phase by phase basis, with detailed SuDS design for each phase of development carried out at the appropriate time. At this stage a conceptual consideration of each phase has been carried out to identify key features:

Phase 1

- 6.6 The main SuDS detention basins, and other attenuation features, generally being provided in the west of Phase 1. A small part of the site sits at an elevated level and as such it is envisaged that this will drain the south-east of Phase 1, through Phase 3a, into existing drainage system which runs along Whitestripes Avenue/Parkway.

Phase 2

- 6.7 The topography of Phase 2 is such that most of this phase drains to the south and east and therefore the orthogonal drainage channels which serve Phase 1 will provide the main stormwater outfall. The SuDS management train will follow a similar format to Phase 1 with features located within green corridors and green spaces. Detention basins and long term storage (LTS) will be located adjacent to the southern boundary.

Phase 3

- 6.8 Phase 3 comprises a school with sports pitches to the north and residential areas to the south. It is envisaged that the school buildings will adopt significant 'at-source' SuDS features and also that the sports pitches will form a key aspect of the SuDS management train. As noted within Phase 2 above, the topography falls to the south and therefore SuDS features located within the green space to the north of Phase 2 will be required. This in turn will outfall into the detention basin SuDS features within Phase 1 to the north of the former manganese quarry.
- 6.9 It is likely that the northern part of Phase 3 will need to outfall into stormwater sewers to be constructed within Whitestripes Road which is envisaged will be improved as part of principal infrastructure works.

Phase 3a

- 6.10 Phase 3A will mainly will comprise commercial buildings and associated car parking. As discussed within Phase 1 above there will be an interface with some works

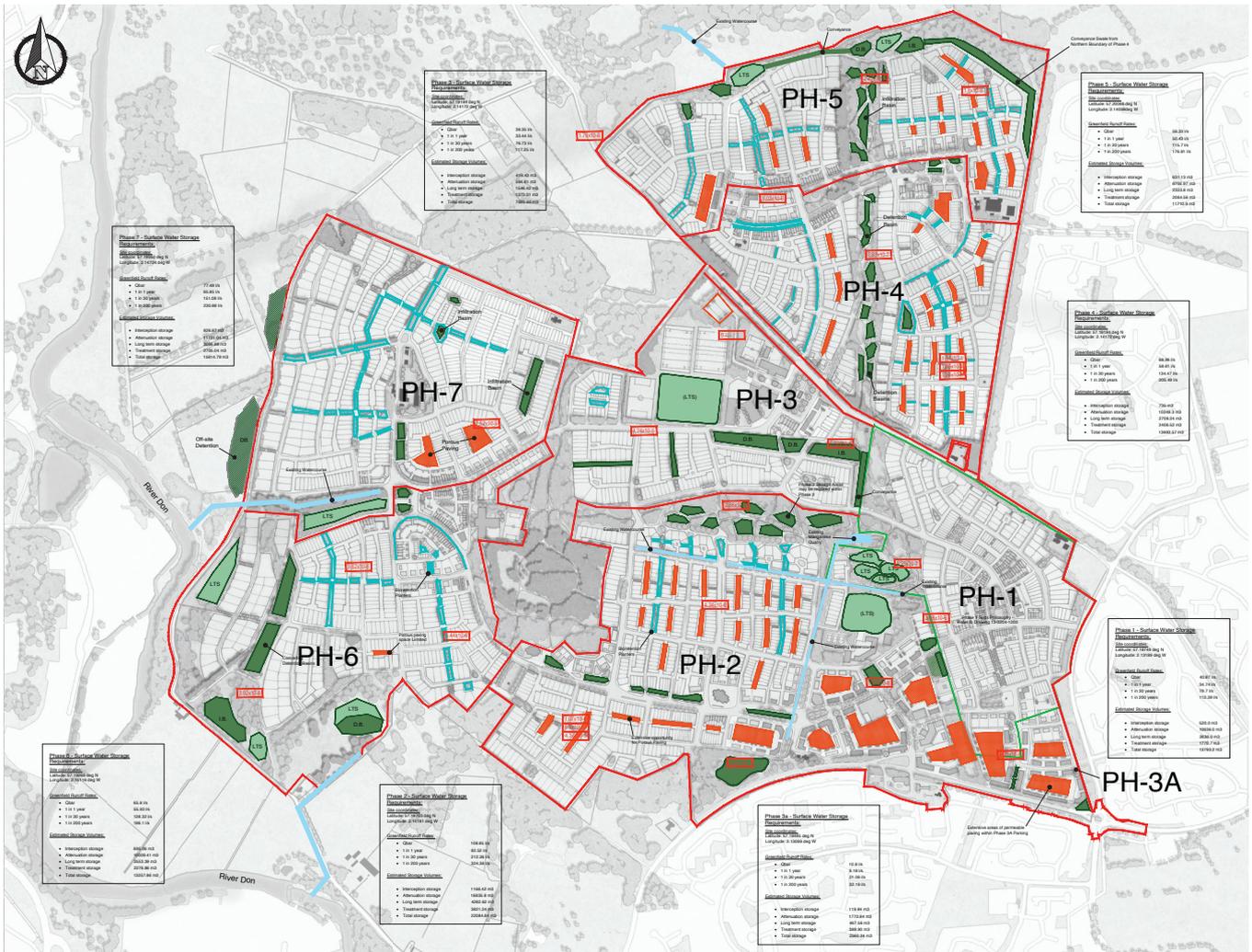
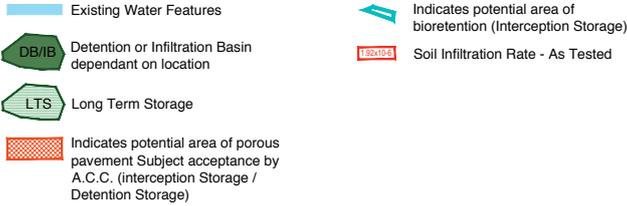


Fig 5: Sustainable Urban Drainage Plan



constructed during Phase 1. The SuDS management train in this case will comprise a series of interlinking permeable paved areas with voided sub-base (VSB). The VSB will be a combination of tanked and infiltration systems. As noted, the outfall will be via the connection to the public sewer in Whitestripes Avenue constructed to suit the Phase 1 works.

Phase 4

6.11 The key feature in Phase 4 is the pylon corridor which extends north through this part of the development site. The line of the pylon defines a wide green corridor and it is envisaged that this soft landscaping zone will extensively incorporate a series of SuDS features which will comprise detention and infiltration basins with conveyance swales. There is a low point towards the north of this part of the site and consideration of outfall from this point will need to be made. It is likely that swales from the eastern side of the site will need to

extend to detention basins and LTS positioned close to the northern boundary of Phase 5.

6.12 The southern part of Phase 4 may outfall to the south into public sewers to be constructed as part of anticipated infrastructure enhancements to Whitestripes Road.

Phase 5

6.13 The stormwater strategy for Phase 5 will comprise the SuDS management train principles using the continuation of the proposed green corridor. There are extensive green spaces proposed along the northern boundary and it is proposed that these will incorporate detention and infiltration basins, swales and LTS. There is an existing watercourse from this point towards Grandhome Moss and the stormwater from Phase 5 and part of Phase 4 will be supplied to this via the stormwater outfall.

7. Education

Principles

- 7.1 The aspiration for Grandhome is to deliver a full spectrum education system which meets the requirements and expectations of every member of the community accommodating up to two Primary Schools and an Academy. All schools in Grandhome will offer high quality facilities to support the experiences and education that children and young people need.
- 7.2 However, buildings are only one element of creating a learning community. Offering a variety of ways in which children and young people can learn and opening up opportunities for their participation in social and community life are just as important. To this end all schools will be genuine neighbourhood buildings, with all facilities available for community use, including adult education, plus spaces which can be used by other organisations involved in the health and wellbeing of children and their families.

Proposals

- 7.3 Phase 1 to 5 of Grandhome, for which permission is sought, will accommodate two primary schools and one secondary school all built to Scottish Futures Trust standards. The masterplan places these educational buildings across the site embedded into different neighbourhoods:
- Grandhome Primary School
 - Clerkhill Primary School and Academy (Community Campus)
- 7.4 Recognising current capacities at Danestone Primary School and the need to phase in the primary school at the optimum time i.e. when there is sufficient critical mass to support the school, Phase 1 primary children will attend Danestone until the first primary at Grandhome opens at the beginning of Phase 2.

- 7.5 The demand for primary and secondary education places will be monitored closely, with phasing of future schools being largely driven by the speed of development. However, the delivery of a new secondary school will come later and will be driven by the wider requirements of the City's education strategy.

Primary

- 7.6 Each primary school will be positioned in such a way as to allow children from more than one neighbourhood to join the school. In this way the schools themselves will act as 'bridges' helping the forming of new friendships in the new community.

Academy

- 7.7 The Academy will be one of the largest and most important community buildings in the development. It is envisaged that the Community Campus will accommodate a range of community services which could include early years/day care public facility, a public library, leisure centre with numerous sports pitches, youth provision and family centre. These services will draw the buildings into community life and ensure that school buildings are used efficiently both during the school week and at evenings and weekends.

8. Community Infrastructure

Principles

- 8.1 A key principle of the development is to provide all of the facilities and services necessary for residents' daily needs. To this end Grandhome will accommodate not only shops and restaurants, employment and schools, but also social and community facilities such as community centres and health centre.
- 8.2 The provision of social and community facilities is considered to be essential to delivering a sustainable new community not only as it further reduces the need for residents to travel outside the settlement (reducing the reliance on vehicular travel and thereby carbon emissions) but also because they facilitate community cohesion by providing a space for social interaction.

Proposals

Community Facilities

- 8.3 Although the schools will be the centre of community life, it is proposed to provide sites for other community uses within each neighbourhood. These are as yet unspecified but can be developed to meet the future requirements of the community (eg. places of worship).
- 8.4 With the proposed primary and secondary schools hosting community uses and activities there will be sufficient community space and facilities available within the town centre and Clerkhill in advance of the development of the community sites. The main community sporting facilities and library will be delivered on the Community Campus.

Health facilities

- 8.5 Health facilities will include suitable NHS provision along with pharmacies and dentists within selected neighbourhoods. It is proposed that the majority of health provisions will be delivered at the neighbourhood scale to accommodate the initial demand from the new development. Once a sufficient critical mass has been established the population will be able to support a purpose built health centre proposed to be located to the eastern edge of the town centre.

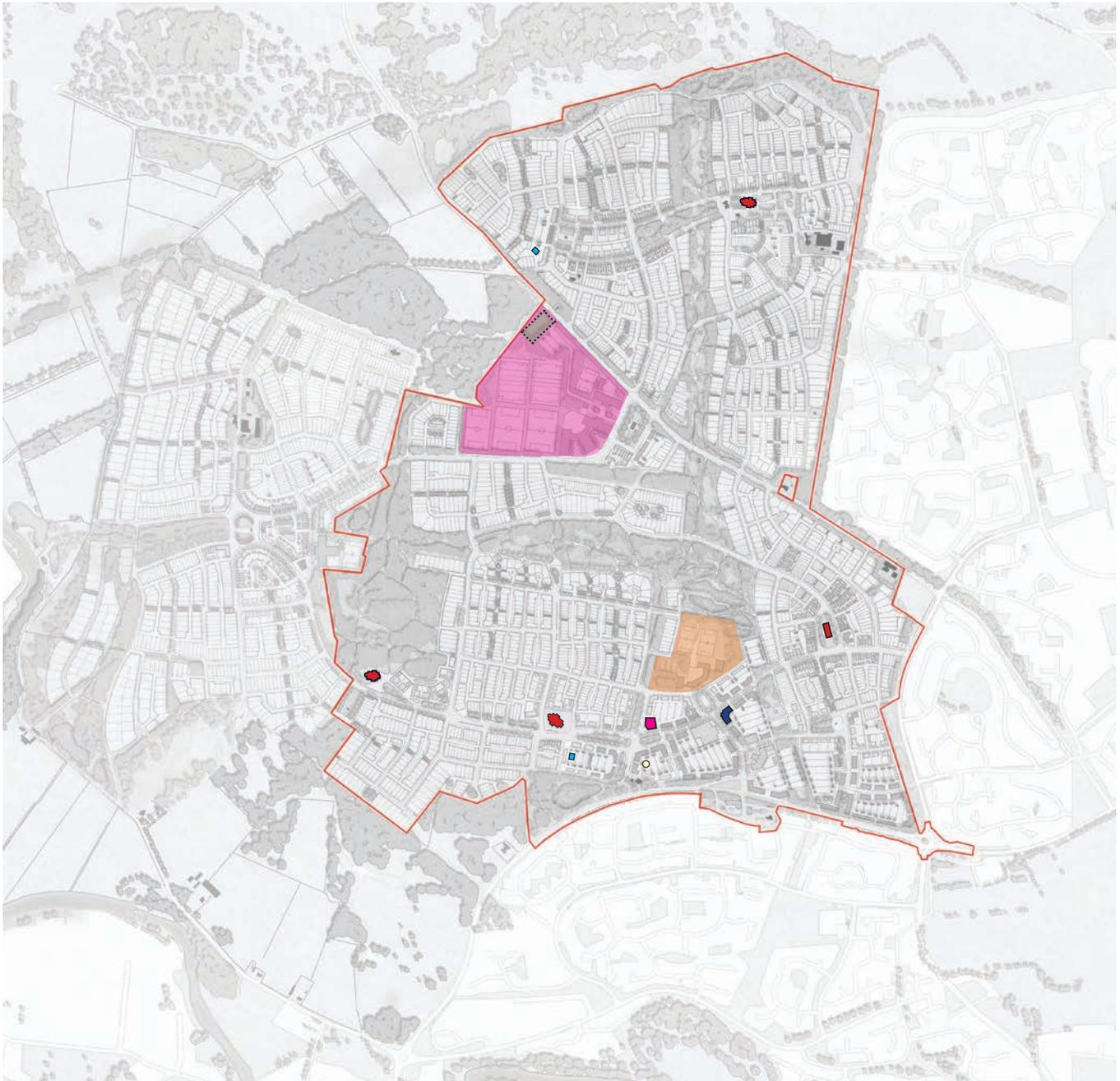


Fig 6: Community Infrastructure Plan

- | | |
|---|--|
| <ul style="list-style-type: none"> Existing Buildings Community Primary School & Sports Academy, Library, Community Campus, & Sports Civic Building: <ol style="list-style-type: none"> 1. Religious Building 2. Cover Market 3. Sites for Community Use 4. Civic Structure / Monument | <ul style="list-style-type: none"> Small Cinema/ Theatre LDP required Gypsy and Traveller site Health Centre Neighbourhood Recycling CHP Facility <p style="font-size: small; margin-top: 10px;">Sites retained for potential amenities with most liberty of uses. Uses are subject to change as the plan evolves.</p> |
|---|--|

9. Green Infrastructure

Principles

9.1 The vision for Grandhome is to deliver a development with a high proportion of open space which will accommodate formal recreational facilities and informal places for rest and relaxation, as well as natural, untamed areas that support biodiversity. There will be a diverse range of different types of green space easily within reach of all residents that will provide a high level of amenity while supporting the physical and mental well being of the development's occupants. The development will not be isolated from neighbouring communities; rather, the appropriate configuration of open spaces, connections and uses will foster interaction between neighbouring areas.

Proposals

- 9.2 An extensive network of green spaces is proposed within the masterplan area that also connects to areas beyond the boundary. The network includes the prime north-south link between the existing landscape features of Clerkill Wood, Monument Wood and Persley Wood, while more than double that quantity of green space has been added, with additional green corridors spreading towards the west and east, and linking to a further major green space corridor running north and linking to Grandhome Moss.
- 9.3 The masterplan for Grandhome has been designed to deliver a wide range of recreational opportunities across more than 60 hectares of open space. Details are set out in the table below.
- 9.4 This equates to just over 25% of the phases 1-5 site area (227ha). It should also be noted that, although outwith this application, the overall masterplan will deliver in excess of 80ha of open space which again equates to approximately 25% of the total site area (319ha).

Table 2: Open Space Provision

		PROPOSED	
	OPEN SPACE TYPE	number	total area
ACC Open Space categories	Play zone/other play areas	9	4.8ha
	Large scale play zone	1	0.25ha
	Outdoor sports areas	2 (5 inc existing**)	7.53 (42.1 ha inc existing**)
	Allotments or community gardens	2	0.65ha
	Natural green space and green corridors	-	23ha
	Town Park	1	7.5ha
Additional space types in masterplan	Neighbourhood Park	1	1.5ha
	Village Greens	5	3.5ha
	Civic Squares	3	1.5ha
	Other landscaped areas	-	12ha
		62.2 ha	



Fig 7: Landscape Framework



10. Summary

- 10.1 The vision for Grandhome is to create a sustainable new community of walkable mixed use neighbourhoods offering shops, jobs, schools and community facilities in order to lessen car dependency and promote a sense of wellbeing and community. This statement has identified the broad range of infrastructure that will be delivered to realise this vision.
- 10.2 This statement has demonstrated how the infrastructure will be phased to ensure that the needs of residents are managed at each phase of the development and that potential impacts are appropriately mitigated through careful planning.

