

# Harrow Strategic Development Partnership

## Initial Phase Business Plan

### Grange Farm Estate Regeneration phases 2 & 3



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## Appendices

<b>Appendix 1</b>	[exempt]
<b>Appendix 2</b>	[exempt]
<b>Appendix 3</b>	Social Value and Community Engagement summary
<b>Appendix 4</b>	Sustainability Strategy
<b>Appendix 5</b>	[exempt]

## ACRONYMS

<b>AY</b>	Avison Young	<b>KPI</b>	Key Performance Indicator
<b>BCIS</b>	Building Cost Information Service	<b>LAR</b>	London Affordable Rent
<b>BTR</b>	Build to Rent	<b>LBH</b>	London Borough of Harrow
<b>CDM</b>	Construction (Design & Management)	<b>LPA</b>	Local Planning Authority
<b>CGIs</b>	Computer Generated Images	<b>NIA</b>	Net Internal Area
<b>CIL</b>	Community Infrastructure Levy	<b>NIY</b>	Net Initial Yield
<b>CIM</b>	Community Investment Manager	<b>OMV</b>	Open Market Value
<b>CIP</b>	Community Investment Plan	<b>PC</b>	Practical Completion
<b>CPS</b>	Community Participation Strategy	<b>PCSA</b>	Pre-Construction Services Agreement
<b>DA</b>	Development Agreement	<b>PIR</b>	Project Impact Report
<b>DM</b>	Development Manager	<b>PPA</b>	Planning Performance Agreement
<b>DMR</b>	Discount Market Rent	<b>PROW</b>	Public Right of Way
<b>EDM</b>	Electronic Direct Mailers	<b>PRS</b>	Private Rental Scheme
<b>EIA</b>	Environmental Impact Assessment	<b>S&amp;M</b>	Sales & Marketing
<b>FVA</b>	Financial Viability Assessment	<b>SDLT</b>	Stamp Duty Land Tax
<b>GPR</b>	Ground Penetrating Radar	<b>SO</b>	Shared Ownership
<b>GEA</b>	Gross External Area	<b>SOA</b>	Schedule of Accommodation
<b>GIA</b>	Gross Internal Area	<b>SV</b>	Social Value
<b>GLA</b>	Greater London Authority	<b>SVP</b>	Social Value Portal
<b>HSDP</b>	Harrow Strategic Development Partnership	<b>STP</b>	Subject to Planning
<b>HOTs</b>	Heads of Terms		
<b>JV</b>	Joint Venture		



## Executive Summary

### Introduction

This document is the Initial Phase Business Plan for the Grange Farm Estate Regeneration Phases 2 and 3. It is proposed that the development is brought into the Harrow Strategic Development Partnership (HSDP) under the process outlined for 'Future Sites'. The process for the addition of future opportunities and community facilities is set out in Schedule 8 of the HSDP's Members' Agreement, and the inclusion of Grange Farm phases 2 and 3 to the partnership will effectively add another core site.

### Site Location and Description

The site is located in South Harrow, HA2 0QA.

The Phase 2 and 3 land benefits from outline planning permission to build 485 dwellings and community facilities building, which was granted in 2019 as part of a comprehensive regeneration application across three phases. Phase 1 was permitted in detail and is currently under construction.

### Project Objectives

The project represents a once in a generation opportunity to transform this part of South Harrow for the better. The aim is to design and deliver a high quality, viable scheme in alignment with:

- The Council's Priorities
- The objectives of the HSDP
- The aspirations, visions and needs of estate residents and the wider community of South Harrow.

### Proposals

The proposed development consists of a comprehensive regeneration of Phases 2 and 3 of the Grange Farm Estate to include a mixture of affordable and private sale housing across a number of buildings designed to be 'tenure-blind'. The scheme will feature high quality public realm and a range of landscaped amenity spaces, parking provision, plus an energy centre. Environmental improvements will include biodiverse planting and ecology enhancements. In addition to the above, a dedicated new Community Facilities building will provide further community benefit.

Key deliverables and Development Structure are shown in the table below:

Key Deliverables:	Grange Farm Phases 2 & 3
<b>Number of homes</b>	532
<b>Private homes</b>	352 (61% by Hab Room) (of which 6no. Townhouses)
<b>Affordable Rent</b>	180 (39% by Hab Room) (of which 26no. Townhouses)
<b>Shared ownership</b>	Number and allocation to be agreed with LBH (does not directly affect FVA or the required levels of social rent homes)
<b>End uses</b>	Residential, community use, management offices
<b>Community Benefit</b>	Estate Regeneration. New Community Facility. Public amenity
<b>Delivery strategy</b>	Build in two phases to suit residents decant
<b>Building heights</b>	3-7/8 Storeys
<b>Development Structure</b>	Private sale residential as 50/50 partnership. Affordable residential and Community Facilities building to be fully funded by the council under a Community Works Agreement (CWA).

## Financial Viability: Headline Position

The viability model outputs (presented in detail in the Financial section and summarised below) show a positive Land Value and positive business case for Phase 2. Currently Phase 3 has a negative Land Value.

Phase 3 is principally affected by uncertainty and inflation associated with the works not due for site start until Q2/3 2026, almost 4 years from now.

Commitment to Phase 3 costs beyond Planning will not be required until Q3 2025, (estimated point of instruction of PCSA) and an updated Phase Business plan will have been produced using up to date inflation and sales revenue estimates at that time.

In addition, finance costs may be reduced across both phases subject to agreement of funding sources, which would potentially further improve viability and land value, particularly so for Phase 3, which is currently impacted by its longer programme from overall project start and the associated effect of debt costs.

Key milestones are effectively natural 'Gateways' or 'Hold Points' in the project timeline, where an up-to-date assessment on viability, cost expenditure to date and future costs budget can be made prior to further commitment. The project is treated as two phases to allow risk to be managed accordingly. The financial section sets out Forecast Costs for each of the following 'Hold Points':

- Prior to submission of Planning application
- Prior to instruction of PCSA Phase 2
- Prior to 'Unconditional' Land Draw down and construction Contract Phase 2
- Prior to instruction of PCSA Phase 3
- Prior to 'Unconditional' Land Draw down and construction Contract Phase 3

The Affordable Residential accommodation and the Community Facilities building are to be fully funded by the council under a Community Works Agreement (CWA). The incoming funding for the CWA is shown in the model within the headings 'Social Rent revenue' and 'Non-housing revenue'.

The summaries that follow set out the Financial Viability for each of the two phases respectively:

PHASE 2 Headline Item	
Land Value	£1.03
Returns to Harrow (Margin + Partner Interest)	£7.8
CIL to Harrow	£1.8

PHASE 3 Headline Item	
Land Value	£-9.37
Returns to Harrow (Margin + Partner Interest)	£9.1
CIL to Harrow	£1.9



## Programme

The table below set-out the key programme milestones and governance dates

Milestone:	Target Date
Consultant team procurement	Aug-Oct 22
Project commencement	Nov 22
Pre-planning period and stakeholder consultation	Nov 22 – Sept 23
Submit Planning application (phases 2&3 combined)	Sep 23
Planning determination period including decision and S106	Oct 23 – Jul 24
Phase 2 demolition and enabling works start	Sep 23
Approval to commence PCSA for Phase 2	Mar 2024
Phase 2 Unconditional / Land draw down and main works start	Oct-Nov 24
Approval to commence PCSA for Phase 3	Feb 2026
Approval to enter into Phase 3 Build contract	Oct 2026
Phase 3 Unconditional / Land draw down date	Nov 2026

## Planning

The land has the benefit of Planning Permission for the comprehensive phased redevelopment of the estate, to provide 274 affordable homes and 300 private sale homes. (Hybrid planning application, LBH reference P/3524/16).

485 of those homes plus a community facility were permitted in outline on land designated as Phases 2&3.

The planning strategy for the project has to factor in the need to optimise and improve the permitted proposals in terms of housing provision, energy performance and placemaking. This is to be achieved by the submission of a new full application that combines Phase 2 & 3.

Target Planning Dates are shown in summary table below:

Activity:	Target Date- TBC
Project commencement and pre-Planning period	Nov 22 – Sept 23
Submit phases 2 & 3 new full application	Sept 23
Resolution to Grant at committee	Apr 24
Complete S106 and issue decision	Jul 24

## Social Value

A social value plan is included at Appendix 3. Social Value benefits will include work and training opportunities for local residents, events support, charitable giving, procurement opportunities for local businesses and environmental improvements. Priorities for the project will be established through further engagement with the Residents Steering Group.

In addition, significant spend with local SMEs will support the local economy.

## 1 Introduction

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This document is the Initial Phase Business Plan for the Grange Farm Estate Regeneration Phases 2 and 3. It is proposed that the development is brought into the Harrow Strategic Development Partnership (HSDP) under the process outlined for 'Future Sites'. The process for the addition of future opportunities and community facilities is set out in Schedule 8 of the HSDP's Members' Agreement, and the inclusion of Grange Farm phases 2 and 3 to the partnership will effectively add another core site.

The Initial Phase Business Plan is put forward on the basis of the outputs described in this report and the feasibility stage proposals as outlined.

More detailed Phase business plans are to be produced as the scheme progresses, and regularly updated in accordance with the requirements of the HSDP's founding documents.

The project represents a once in a generation opportunity to transform this part of South Harrow for the better. The aim is to design and deliver a high quality, viable scheme in alignment with:

- The Council's Priorities
- The objectives of the HSDP
- The aspirations, visions and needs of estate residents and the wider community of South Harrow.

The HSDP has three core sites, being Byron Quarter, Peel Road, and Poets Corner. All three core sites were considered in the HSDP's initial overall Business Plan and are now subject to detailed design and the drafting of detailed phase Business Plans.

This Initial Phase Business Plan will inform the overarching HSDP Business Plan and the outcomes of the FVA will be incorporated at appropriate times.

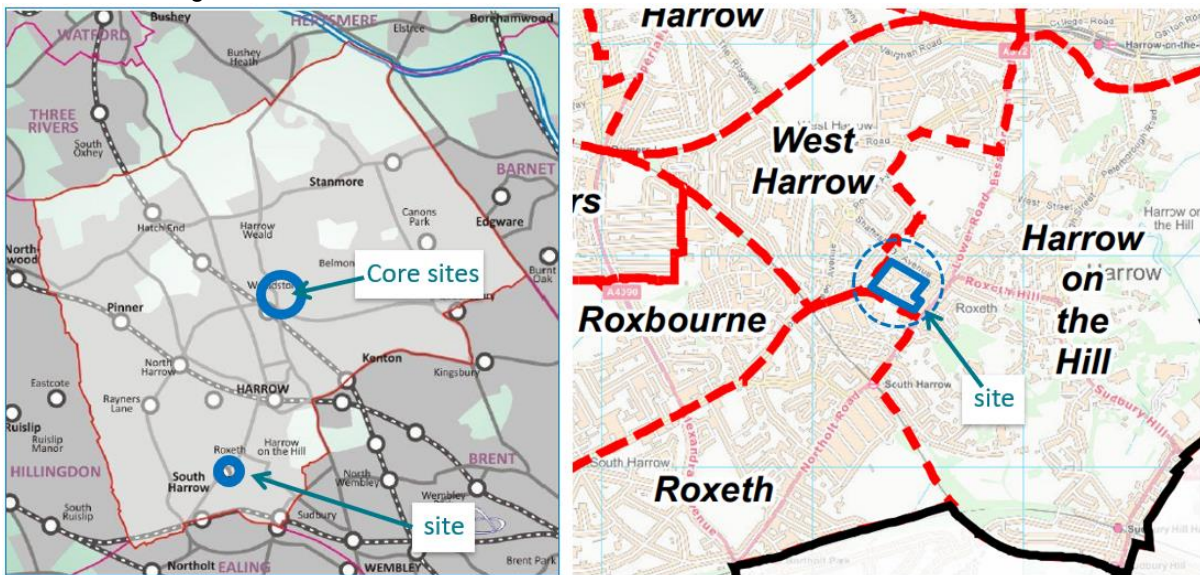
The purpose of this Initial Phase Business Plan is to inform a recommendation by the HSDP to Member Partners that the scheme should be formally incorporated into the HSDP and the project should commence.

## 2 Project Location, Objectives and Vision

### 2.1 Project Location

The estate falls within the residential area of South Harrow. The land sits entirely within Harrow on the Hill ward. Two ward boundaries are close by: Roxeth ward abuts the boundary to the south and West Harrow ward abuts the boundary to the west.

Site location diagrams:



The estate covers an area of 4.1 hectares, of which Phases 2 & 3 comprise approximately 3.6 hectares. The land currently comprises a 1960's housing estate, on part of which redevelopment is already underway (Phase 1, due for completion early 2023).

Main access is via Shaftesbury Avenue, which runs perpendicular to the A312 (Northolt Road), from south-east to north-west. The postcode of the development site is: HA2 0QB.

The estate can also be accessed via Dudley Road to the west, and a pedestrian route from Northolt Road to the south-east.

The site benefits from good public transport links, with South Harrow underground station being located approximately 0.5 miles to the south. This station provides frequent Piccadilly Line services into central London within 40 minutes.

Alternatively, Harrow-on-the-Hill station provides underground (Metropolitan Line) and National Rail services and is located approximately 1 mile to the north.

The site is also in close proximity to multiple bus routes linking to Harrow & Wealdstone Station which provides further services via underground (Bakerloo Line), Overground and National Rail.

Adjoining and nearby uses are described in Table and as labelled on image below.



Boundary	Description
North	Shaftesbury Avenue - rear gardens of post war semi-detached housing to the N and NE. Dudley Road - rear gardens of post war terraced housing to the NW.
South	Northolt Retail Park and associated car park East Croft House residential apartment block Shell Petrol Station
East	Osmond Close – BT Building Harrow Royal British Legion. Templar House residential apartment block BT Telephone Exchange building.
West	Dudley Road - rear gardens of post war terraced housing to the W.

The site is located 4.25km northeast of RAF Northolt and approx. 11km from Heathrow Airport and occupies aerodrome height, technical and bird-strike statutory safeguarding zones which must be accounted for in the design of the scheme.



## 2.2 Project Objectives – fulfilling the Objectives of the HSDP:

### **Deliver wider regeneration across the Borough**

The scheme will deliver additional new housing in a high quality mixed tenure development that provides a better mix of social housing as well as shared ownership and market housing for sale to meet the needs of existing and future households. In addition, the aim is to provide a fit for purpose, modern community facilities building and a vastly improved public realm and sense of place.

The project would further widen the effect of regeneration across the Borough beyond that anticipated for the Core Sites.

### **Accelerate the pace of housing delivery across the portfolio of Sites**

The regeneration of the Grange Farm estate will replace existing poor quality and energy inefficient properties with high quality homes to meet housing delivery and climate change reduction targets. The HSDP is well placed to progress the project at pace and in line with the recommendations in this report with regard to phasing.

In addition, opportunities will be taken to improve on the proportion and quantum of family homes and substantially increase the number of habitable rooms.

### **Contribute to the delivery of well designed, high quality places**

The scheme will enable the provision of Lifetime homes and purpose-built wheelchair housing enabling the occupants to remain living independently for as long as possible.

The overall masterplan is to be 'Placemaking'- and 'Quality of Environment' led. Design of public realm, open spaces and landscaping will be key to its success. The new community facility will provide opportunities for activities that may have a positive health impact.

### **Secure wider economic and social benefits**

Contribution to a thriving economy by offering opportunities for work and enabling income from those living in the additional new homes to be spent in the local South Harrow economy.

It will tackle poverty and inequality and provide genuinely affordable housing, enable good jobs to be created through construction work, including apprenticeships for local people and those already on the Grange Farm estate. Dedicated information campaigns as part of the Social Value offering will help to achieve this.

Potential fuel poverty issues will be addressed through low energy fabric-first approach to sustainable design of all buildings and the energy supply strategy.

## 2.3 Project Vision – fulfilling the Vision of the local community and residents

We see the Grange Farm Residents Steering group as one of the most important stakeholders in the project. Going forward the project will evolve to respond to engagement with the group and build on the three key objectives of the group's 'Vision' and the draft "Neighbourhood Agreement" (headlines set out below).

**Place:** A beautiful place where people love to live, work and play

A high quality, tenure blind design.

Safe, secure, and well managed

Affordable, sustainable and energy efficient

Maximise opportunities to integrate into the wider South Harrow community

**People:** "We before Me". Working together for the greater community good.

Empowering people and communities

Wellbeing and community Cohesion

Dedicated and measurable Social Value programmes

**Partners:** Partnerships that help bring the community together.

Providing a new community 'Hub' that will consolidate existing smaller facilities in the area

Support for residents to control, manage and own projects and services

## 2.4 The Brief:

The above Objectives and Vision will be achieved through:

- Delivery of circa 530 tenure blind new homes, across two phases which will follow completion of Phase 1:
- To include minimum 38% affordable housing, new landscaped gardens, and outdoor spaces.
- Improved connections to nearby existing amenities.
- Up to date Community Hub building and Estate Management rooms.
- Effective delivery on agreed Social Value commitments

Progression of the scheme design will look at how roads and streets are designed to give space for pedestrians and cyclists. We will design out crime and ASB with subtle, passive measures to keep residents safe and secure. Such measures will include the physical security of buildings with robust doors, windows and locks as well as considered layouts within the plots and landscaping to include increasing natural surveillance



## 3 Legal

### 3.1 Ownership

The development site is comprised of a number of registered Titles. LBH have been freehold owner of the majority of the land and buildings in the masterplan for some years but a CPO process (confirmed by the secretary of state in July 2021) was necessary to ensure ownership and hence Vacant Possession (VP) can be achieved on the remaining freehold/leasehold interests. The latter included a number of houses and flats controlled by Notting Hill Genesis (NHG).

Justification grounds for the serving of the CPO were based on the Planning permission that had been secured as a hybrid of Detailed and Outline permission for the whole estate regeneration in 2019. Further details of this extant permission are provided in section 5.

LBH have confirmed they served the General Vesting Declaration (GVD) on NHG to gain control of those homes by 17th March 2022.

It is understood that negotiation with other leaseholders/freeholders on the estate is ongoing, and if necessary, a GVD can be issued to ensure vacant possession.

### 3.2 Vacant Possession (VP) dates and Decant Strategy

LBH have confirmed the following strategy with regard moving dates for existing occupants.

VP of the Phase 2 land has been prioritised for late 2022/early 2023 to give necessary time.

Temporary Accommodation households:

- To be moved off site and relevant notices have been issued to occupiers. After having been vacated, these properties will be secured and occupied by 'Property Guardians' on a 1-month notice contract.

Secure Tenants currently in Phase 2:

- Will move into the newly completed homes in Phase 1 and all relevant legal notices have been issued.

Any remaining interests in Phase 2 relate to existing leaseholders. Where moves have not been negotiated, notices and/or GVDs as required will be issued by LBH, giving the council the option to take possession at 3 months' notice.

Phase 3: A similar process to the above will be worked up for Phase 3 depending on a confirmed completion date of Phase 2. As yet no notices for vacant possession of properties on phase 3 land have been issued because the current programme does not require Phase 3 VP proceedings and notices to begin before 2023.

### 3.3 Air Cadets / MOD owned Land

On the south-eastern part of the site is parcel of land containing an existing single storey Air Cadets centre, outbuildings, and forecourt. This land is hatched green on the plan below.

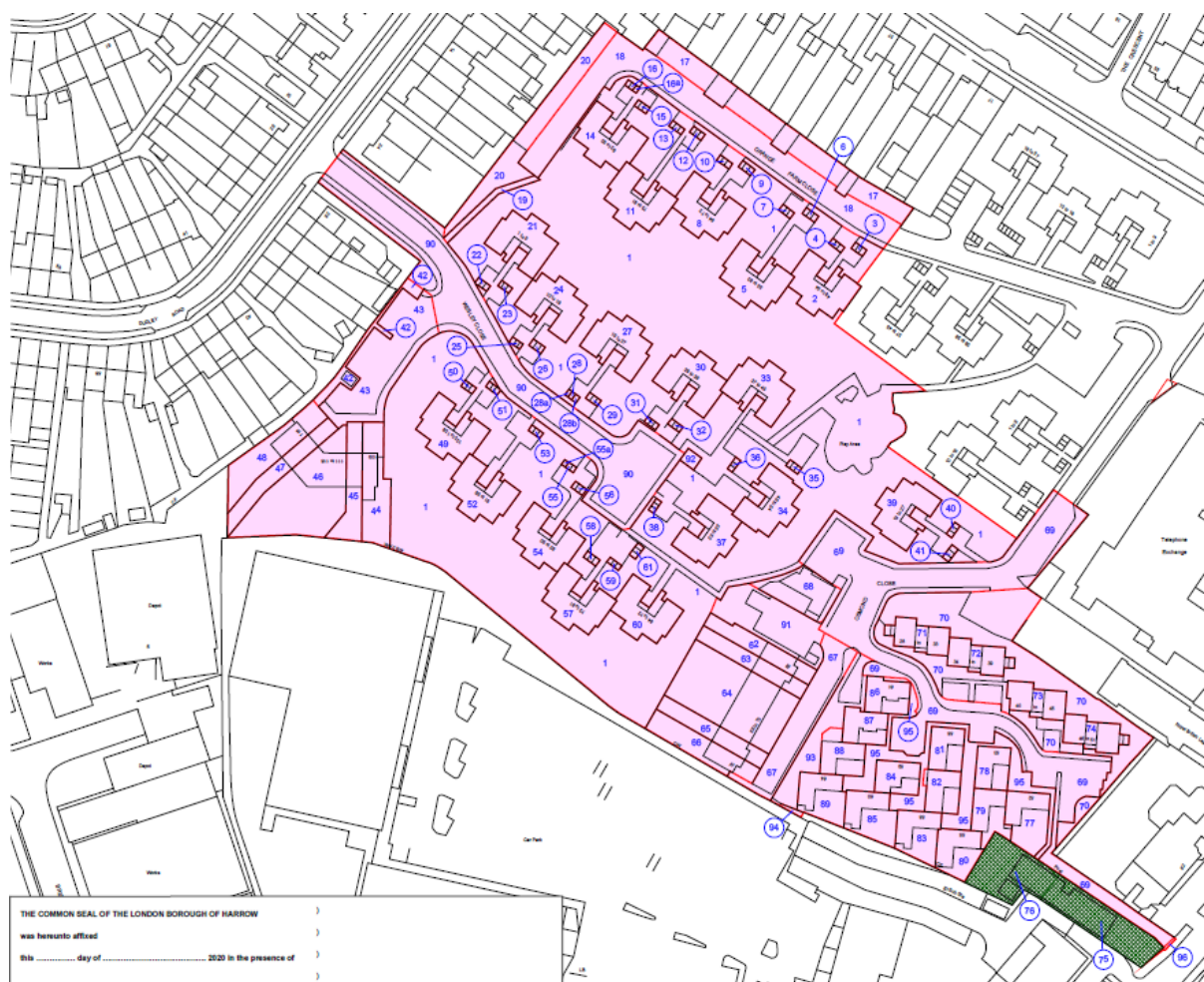
The original masterplan permission (detailed description in following section) envisaged this land to be part of the development. If included, it would have allowed a wider landscaped route and improved links to Northolt Road.

During the recent CPO process referred to earlier in this section, the MOD objected to its land being purchased.

It is understood that negotiation for reprovision of the Cadet facility, either on the Grange Farm Estate or elsewhere, did not result in any agreement, and MOD insisted that the land be removed from the Compulsory Purchase Order.

On that basis and for the purposes of this Business Plan the development site will exclude this land.

The ability to improve finishes and lighting of the existing pedestrian route to Northolt Road within council ownership remains.



CPO land plan above

### 3.4 Existing Residents and Tenancies

A Housing Needs Assessment undertaken by LBH for households moving into the new homes in Phase 1 indicated that a new Needs Assessment for phases 2 and 3 residents should be carried out by LBH Housing Regeneration department. This is to ensure the proposals take into appropriate consideration the needs of households with physical and mental health disabilities, as well as those of growing household sizes.

Harrow intends to complete a new Equalities Impact Assessment in consultation with the Grange Farm Steering Group to ensure any relevant issues identified are addressed going forward.

Once the above assessments are undertaken and reviewed by partners, implications on Affordable Housing dwelling types and distribution across phases 2&3 can be factored into the proposals and associated financial modelling.

### 3.5 Access

A Highways Search provided as part of the Legal Report confirms that access is directly via the existing Highways network of roads and footways which extend into the site. Road and footway access is currently from Shaftesbury Avenue on the north edge and Dudley Road on the west edge. For the new development these access points are to be retained, with the routes on site itself reconfigured to suit the new layouts. An existing pedestrian route also passes between the existing cadet centre and Northolt Road as noted earlier.

Indicative access across third-party owned land to the south was indicated as an aspirational link to the Retail Park (Waitrose) and beyond as part of the 2019 outline planning permission.

Two similar indicative links were shown in a reciprocal direction from Northolt Road Retail Park land through to Grange Farm as part of that application which was permitted in November 2021 (reference P/2052/20, application covered in more detail in section 5).

It is understood from enquiries with LBH Regeneration and Legal teams that no formal access agreements exist between LBH and third-party owners of the above land or owners of the remainder of the Waitrose car park.

### 3.6 Rights of Light

Specialist consultants GIA were commissioned during the business plan development process to undertake a review of Daylight Sunlight and Rights of Light matters. Rights of light risks associated with surrounding third-party properties have been assessed and certain neighbouring addresses identified as causing areas of potential risk. GIA have since commented on the proposed design and the current proposals make allowance for high level GIA advice, which principally refers to heights of proposed buildings closest to the rear of properties on Northolt Road. Further assessment will be required to reduce/eliminate risk as the proposals are taken forward in detail.

### 3.7 Easements and Wayleaves

The Report on Title includes a search on Statutory bodies and Utilities providers. No major or unusual risks were identified or highlighted as major concerns.

Rights that are identified in the legal report will be looked at in detail when the proposals are progressed and the Construction planning team has made a detailed assessment of existing services to be removed or diverted. This should establish capacity requirements and logistics of new incoming services connections and any associated cost effect not yet allowed for.

### 3.8 Public Rights of Way

Existing Highways on site will be subject to a stopping up order. New main estate roads and paths will be adopted as public highway. This process has already been carried out for part of the estate under the Phase 1 works.

### 3.9 Utilities

A search of Utility providers was undertaken as part of Title report. Wates construction planning / operations team have assessed the implications of the existing utilities on site in terms of risk to delivery of the project at a high level only. Cost implications in the cost plan estimate are based on figures that were provided in a specialist report for the outline planning permission. A full detailed review on costs and a new utilities assessment is recommended to be undertaken as the proposals progress as part of the detail design progression.

### 3.10 Estimated Lease Completion Date / Mechanism for Freehold transfer

As per the HSDP Development Agreement for the core sites, Phase Conditions are to be satisfied prior to Land Drawdown for each of the Grange Farm phases. Project- specific conditions will have to be met. The tables on this page set out the Conditions, plus a forecast satisfaction date for each in Phase 2 and Phase 3.

Land will be drawn down for Phase 2 and Phase 3 separately, to suit the build and occupation programme. The value of each phase is to be agreed by the HSDP prior to drawdown using the methodology set out in the founding documents.

As per other core sites, it is anticipated that Freehold interest in the land will remain with the council and a long Leasehold (250 years) is to be granted to a development subsidiary of the HSDP (other than land exclusively demised for CWA works).

#### Grange Farm Phase 2 Drawdown Conditions (Estimated Lease Completion Date is Oct/Nov 2024 )

Condition	Description	Forecast Satisfaction
<b>Planning Condition</b>	HSDP to secure a Satisfactory Planning Permission clear of 8-week judicial review period.	Aug 2024
<b>Title Condition</b>	LBH to resolve all Title Matters.	Jul 2023
<b>Funding Condition</b>	HSDP procures, to the satisfaction of LBH, funding with an Approved Funder sufficient to cover the HSDP's obligations in the DA.	Aug 2024
<b>Business Plan Condition</b>	HSDP has agreed a Business Plan and associated Phase Business Plan.	Oct 2024

#### Grange Farm Phase 3 Drawdown Conditions (Estimated Lease Completion Date is July/August 2026)

Condition	Description	Forecast Satisfaction
<b>Planning Condition</b>	HSDP to secure a Satisfactory Planning Permission clear of 8-week judicial review period.	Aug 2024
<b>Title Condition</b>	LBH to resolve all Title Matters.	Jul 2023
<b>Funding Condition</b>	HSDP procures, to the satisfaction of LBH, funding with an Approved Funder sufficient to cover the HSDP's obligations in the DA.	Jun 2026
<b>Business Plan Condition</b>	HSDP has agreed a Business Plan and associated Phase Business Plan.	Jul 2026



## 4 Planning: Background and Emerging Context

### 4.1 Background to Outline Planning Permission:

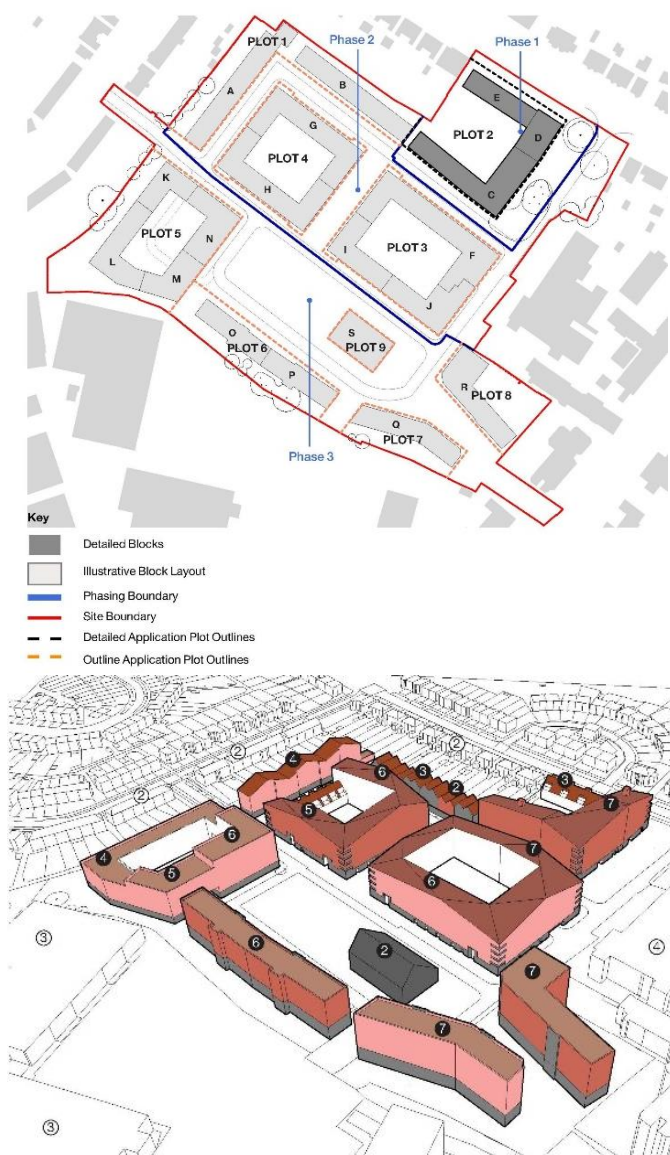
The land has the benefit of Planning Permission granted in 2019 for the comprehensive phased redevelopment of the estate, to provide 274 affordable homes and 300 private sale homes. (Hybrid planning application, LBH reference P/3524/16).

The permission comprises two elements: Phase 1 was secured as a detail permission and is now under construction to provide 89 of the above affordable homes. It is being delivered by Higgins, with occupation estimated by early 2023.

Phase 2 and 3 was approved in outline to deliver 181 social rent homes, 4 shared ownership homes and 300 Private Sale Units, a Community Centre – 1350m<sup>2</sup> and a Community Facility – 282m<sup>2</sup>.

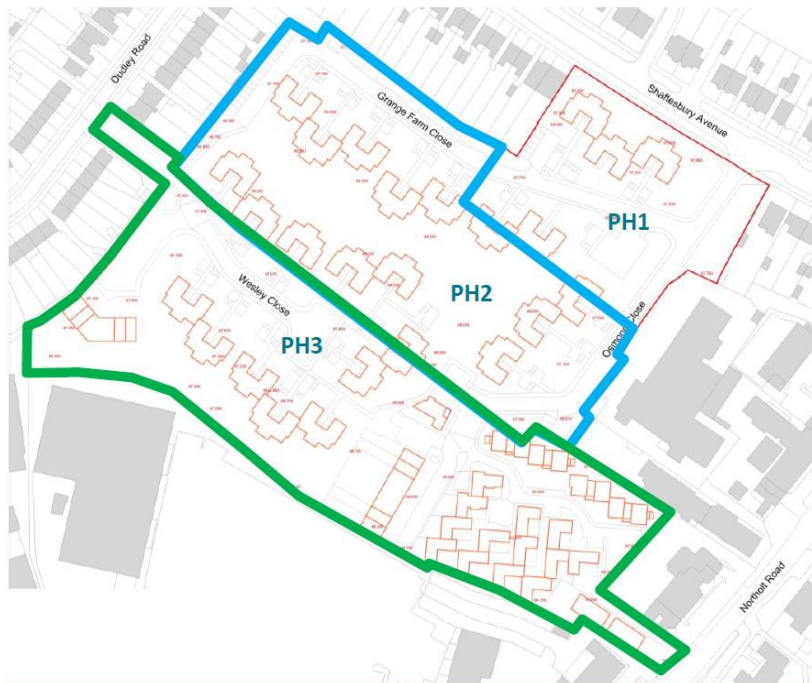
*(It is understood that the community facility mentioned above related to the Air Cadets centre, which for reasons noted earlier in this report is no longer to be provided as part of this redevelopment).*

Outline permission for phases 2 and 3 consists of 8no. plots of land with 16 buildings up to 7 storeys in height as shown on the illustrative masterplan images below:



## 4.2 Phasing Plan Overlay:

The plan below shows the existing site overlaid with the zones that the outline planning permission designated as phases 1, 2 and 3:



## 4.3 Existing Use

Grange Farm is a purpose-built housing Estate with 282 properties mainly made up of “Resiform” flats which are a particular type of building involving the use of fibreglass panels for external walls. It is understood that materials such as asbestos used in their original construction could lead to complex demolition processes.

## 4.4 Site Specific Planning Policy Allocation

As noted above, a hybrid planning application was submitted on behalf of LBH in 2016 and planning consent was given in 2019. This was for a comprehensive phased regeneration of the estate. All of the existing properties are to be demolished and replaced with new houses and apartments of mixed sizes plus a community-use building and associated facilities.

## 4.5 Environmental Impact Assessment

A screening process was undertaken for the outline masterplan under the above regulations. The Council issued a scoping response which concluded that the development was considered not to be a development that triggered the thresholds. It therefore did not require an Environmental Impact Assessment.

## 4.6 Community Infrastructure Levy (CIL)

CIL will be charged on new floorspace subject to appropriate rates, indexing and allowable discounts.

The CIL figures declared in this report and used in the FVA, uses a demolition area estimated at 13,565sqm GIA which represents the amount of floorspace currently remaining across Phases 2 & 3 calculated from the existing site plan using a GIA:GEA ratio extrapolated at 92%.

The calculations were also checked by Planning consultants and verified against the LPA online calculator.



## 4.7 Planning Conditions

Going forwards these are to be determined through the planning process for both Phases 2 and 3. Planning consultant Lichfields has advised that condition 6 of the original main hybrid application requires the outline element (phases 2 and 3) to be developed in accordance with agreed Parameter plans. This in turn informs the recommended application strategy which, as described later in the Planning section, is to not progress a Reserved Matters application due to the restrictive nature of those plans.

## 4.8 Emerging Context: Northolt Road Retail Park planning permission:

An application (reference P/2052/20) on the adjacent third party owned land to the south was submitted in 2019, and full detailed planning permission was granted on 19th November 2021.

The approved proposals are for 191 New dwellings (39 affordable) in a number of buildings of 4-6 storeys in height. Significant built form was approved, and two buildings in particular are designed in close proximity to the approved blocks on Grange Farm's masterplan (plots 5, 6 and 7).

The approved Retail Park design has separation distances of 11m–13.5m between neighbouring buildings standing 4-6 storeys in height for the majority of the length of the boundary to Grange Farm (see black arrows on image below) In order to reach adequate levels of daylight and sunlight in the affected Grange Farm blocks, very limited options for internal space planning are available. In addition, the close proximity to facing blocks could have a negative sense of enclosure and poorer quality of outlook.

The landscaping plans approved for this application show an aspiration for pedestrian links into the Grange Farm estate (via ramps/steps to deal with the approx. 1 storey level change). They also require development to include re-landscaping part of a separate ownership, currently part of the existing Waitrose car park. This latter route was also indicated as a future link through to Grange Farm and its community facilities to improve connectivity for residents of each site and the local community. We will look to explore connectivity where mutually beneficial and agreement can be made with adjoining landowners.

The new proposals for Grange Farm should therefore address the above points.



### **Northolt Road Retail Park permitted landscape plan.**

(Black arrows indicate points where separation distances are 11m to 13.5m between 4-6 storey buildings permitted on Grange Farm)

## 4.9 Opportunities for optimisation of the outline permission

The feasibility proposals summarised in the Proposed Development section of this report set out to make the most of opportunities identified along the way. In addition, dialogue to date with our LBH Housing Regeneration and Planning partners and local Stakeholders is factored in.

The brief is to improve wherever possible on the outline permission whilst taking on board relevant issues identified. Key opportunities for improvement identified:

### Placemaking:

- More useable open spaces, and more generous public realm
- Opportunity to add public green space, with more visually open external amenity spaces
- Consider adjacent existing and emerging context, e.g., residential gardens to west and Retail Park permission with associated pedestrian links.
- Increased levels of biodiversity and soft landscaping
- Reorganisation of parking on site to offer better streetscape and more pedestrian-friendly environment, to reduce the dominance of parked cars on the public realm.

### More Homes and a Better level of Affordable Homes:

- c530 homes overall with a higher proportion of affordable Habitable rooms
- Over 100 additional affordable Habitable Rooms.
- More Family Houses
- Fewer affordable 1 beds and 2 beds: the need tends to be for larger family homes

### More efficient and Sustainable buildings:

- Improved efficiencies of building plans (eliminate deck access and reduce corridors)
- Improve sustainable energy provision on site (e.g. air source heat pumps in energy centre, PV panels on roofs etc)
- Energy performance and building fabric enhanced over permitted scheme
- Additional massing to same core: explore height within permitted parameters

## 4.10 Planning Application strategy

Wates have engaged Lichfields planning consultancy (Nathaniel Lichfield LLP) to advise during the evolution of this business plan. It is agreed as a principle that the layout and form of buildings as drawn in the outline permission will have to be amended in order to achieve a viable development and to deal with contextual issues described above.

To achieve this, a new full application to cover both Phase 2 and Phase 3 is the recommendation.

A 'Reserved Matters Application' approach was one of the strategies considered but Lichfields advised that very limited amendments to the permitted design would be possible, due to the highly prescriptive nature of associated Parameter Plans and conditions. CBRE, planning consultants already engaged on the HSDP core sites, were also consulted, and came to the same view.

LBH Interim Chief Planning Officer confirmed support for this approach.

Target Planning Dates are shown in summary table below:

Activity:	Target Date- TBC
Project commencement and pre-Planning period	Nov 22 – Sept 23
Submit phases 2 & 3 new full application	Sept 23
Resolution to Grant at committee	Apr 24
Complete S106 and issue decision	Jul 24

Further reasoning for the strategy to work on Phases 2 & 3 combined as a full detailed planning application is as follows:

- An overall picture on design quality and a holistic review by both Harrow Planning Department and the GLA of the whole estate masterplan can be captured.
- Consultant fees would not necessarily be significantly lower if submitting phase 2 in detail and phase 3 in outline, due to the level of information required for the outline part (in fact ultimately, they would be considerably higher for reasons noted below)
- A Hybrid application would require additional work up front such as Design Code and Parameter plans.
- A further reserved matters submission for phase 3 would require new/updated surveys on ecology, parking, aviation, plus the full set of consultant drawings, reports and surveys etc.
- Risk would be introduced on phase 3 due to possible amendments to sustainability or other GLA or stakeholder policies in the meantime.
- Planning risk and programme would be increased by the nature of having to submit an additional reserved matters application, in turn having its own consultation process.
- Consultant costs would have to factor in two separate applications.

#### 4.11 Planning Risks and Mitigation strategies

Planning Consultants and the HSDP have together established the following key risks and mitigations:

Potential Risk	Mitigation Strategy
<b>Height, scale, and massing – in particular in relation to Aviation Safeguarding. MOD is a statutory consultee (see further detail in following ‘Constraints’ section</b>	Early dialogue strategy. Height for proposals set no higher than original permission however advice is that regulations have since been relaxed.
<b>GLA: potential to reconsider level of affordable across the entire Estate</b>	Early dialogue to justify, combined with statement on additional quantum of accommodation proposed
<b>Protracted consultation period – either with MOD, GLA or LPA</b>	Strategy for early consultation with MOD begun. Planning consultant to set out clear and early plan for GLA and LPA consultation and dialogue
<b>Biodiversity enhancements under new policies</b>	Careful design of masterplan and maximise opportunities for planting and landscaping
<b>Transport, highways, and public realm – conflicting aspirations of GLA and local groups on levels of car parking</b>	Layout allows for parking levels achieved on outline permission, with options to improve placemaking and streetscapes through consultation to reduce parking levels where possible

## 5 Physical and Environmental Constraints

### 5.1 Aviation Safeguarding constraints

The site is located 4.25km northeast of RAF Northolt and is situated within aerodrome height, technical and bird-strike statutory safeguarding zones which must be accounted for in the design of the scheme. A detailed assessment was carried out by specialist consultants on the proposals permitted in outline in 2019.

The HSDP has been made aware by LBH of the sensitivity of restrictions across the site and as such, the proposed design has been tested to fall under or be no higher than heights permitted.

The outline planning consent sets a maximum height for development to Phases 2 and 3. We will engage with the Civil Aviation Authority (CAA) Ministry of Defence (MOD) and NATS (air traffic control services) early in the pre-application process with a view to mitigating the risk of any objections on aviation grounds.

Reports on the above issues were sourced by Wates from two separate Aviation Safeguarding specialist consultants, Lichfields and Pager Power. The latter also reported on the original outline permission and informed those negotiations with MOD.

Both consultants indicate that significant extra built form, i.e. alternative massing or extra height, may be possible across the whole of the site due to MOD guidance having changed in the interim.

The associated guidance document, Regulatory Article (RA) 3512, sets out a less onerous restriction on take-off and landing from runways.

It should be noted that the proposals as assessed for this Business Plan have been designed to comply with the aviation height restrictions as originally permitted. Both aviation consultants have confirmed that this is the case for the currently proposed massing, having reviewed the heights. As the scheme progresses, if additional massing and/or height are deemed beneficial, this may be explored subject to consultation.

### 5.2 Boundaries and neighbours

The site is bounded by gardens of residential dwellings on the north and west, Northolt Road retail park to the southern boundary and civic / commercial / community buildings to the east.

Logistics of construction and enabling works will need to have particular regard to the sensitivities and ongoing operation of existing dwellings on site, newly built Phase 1 as well as surrounding neighbours.

Wates Operations/programme planning team produced a Logistics plan at early bid stage and this will be worked up to factor in further detail as the project progresses.

### 5.3 Land contamination risk

A detailed Phase 1 and 2 Geo-Environmental Assessment was submitted at the time of the masterplan application. The report concluded that the development site has a very low geo-environmental risk to future occupiers, and also to future construction workers on the site.

New specialist environmental and technical reports at Stage 2 pre-planning stage will be commissioned to ensure information is up to date, relevant and appropriately integrated into the design and reported on as part of the planning pack, and to inform pre-construction design development and cost planning.

### 5.4 Flood Risk:

The site is in Flood Zone 1 but due to its size, a specialist Flood Risk Assessment (FRA) was undertaken for the original application.

The report found the majority of the site is considered as being at a 'Very Low' susceptibility to surface water flooding but some areas located along the eastern boundary were considered as having a higher susceptibility to surface water flooding.

Recommendations of the FRA included SUDS and surface water flooding mitigation measures including biodiverse planting.

A new updated FRA will be commissioned for Phases 2 and 3 to ensure up to date strategies are in place.

### 5.5 Party Wall matters:

Party Wall Surveyor, Consil (engaged by HSDP for core sites) has provided initial advice and a fee estimate. At this stage an allowance will be made to provide awards and surveyors work for 15 neighbouring properties.

Access agreements for construction may also be required across certain properties adjacent to boundaries and surveyor's fees are budgeted. Any financial consideration due to neighbours (if applicable) is yet to be determined.

### 5.6 Asbestos:

It is understood that significant levels of asbestos were found during demolition of the existing phase 1 buildings. The Contractor will be responsible for undertaking a Refurbishment and Demolition Survey ('R&D Survey'). This will establish accurately the locations and type of asbestos within the phases 2 and 3 site. An Asbestos Management Plan will be prepared by the Contractor and removal will be undertaken by a specialist contractor. Allowances have been made within the Demolition Programme and Cost Plan for 'notifiable' asbestos to be encountered.

### 5.7 Existing Trees:

An up to date arboriculture survey and report will be commissioned to accompany the planning application. The vast majority of existing trees were marked for removal in the outline planning permission of March 2019. The new brief will be for more good quality existing trees to be retained and integrated into the new proposals than the permitted scheme wherever possible.

## 6 Proposed Development

### 6.1 Summary

The proposed development consists of a comprehensive Regeneration of Phases 2 and 3 of the Grange Farm Estate to include a mixture of affordable and private sale housing across a number of buildings designed to be 'tenure-blind'. The scheme will feature high quality public realm and a range of landscaped amenity spaces, parking provision, plus an energy centre. Environmental improvements will include biodiverse planting and ecology enhancements. In addition to the above, a dedicated new Community Facilities building will provide further community benefit.

### 6.2 Key deliverables

Key Deliverables:	Grange Farm Phases 2 & 3
<b>Number of homes</b>	532
<b>Private homes</b>	352 (61% by Hab Room) (of which 6no. Townhouses)
<b>Affordable Rent</b>	180 (39% by Hab Room) (of which 26no. Townhouses)
<b>Shared ownership</b>	Number and allocation to be agreed with LBH (does not directly affect FVA or minimum level of Social rent homes)
<b>End uses</b>	Residential, community use, management offices
<b>Community Benefit</b>	Estate Regeneration. New Community Facility. Public amenity
<b>Delivery strategy</b>	Build in two phases to suit residents decant
<b>Building heights</b>	3-7/8 Storeys
<b>Development Structure</b>	Private sale residential as 50/50 partnership. Affordable residential and Community Facilities building to be fully funded by the council under a Community Works Agreement (CWA).

### 6.3 Target Metrics and Accommodation Schedule – combined Phases 2&3

“Base scheme” 532 units:		
<b>GIA - total Residential including energy centre</b>	c 48,400sqm	
<b>NIA – Apartments and Townhouses total</b>	c 37,575sqm	
<b>Residential Net to Gross Ratio</b>	75-76% Flats	78%+ including townhouses
<b>GIA Community use</b>	1,350sqm	
<b>Proportion Affordable: Private (by Habitable Room)</b>	39% Affordable	61% Private



## 6.4 Area Schedule, SOA Summary and Unit Mix combined Phases 2&3

Development Total				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	146	27%	292	18%
2 bed 3p	113	21%	339	21%
2 bed 4p	132	25%	396	24%
3 bed 4p	109	20%	436	27%
3 bed 5p house	26	5%	130	8%
4 bed 6p house	6	1%	36	2%
Totals	532		1629	

	Total	Affordable	Private
GIA- Resi sqm	48,397	18,063	30,334
NIA - Resi sqm	37,573	14,325	23,248
Community sqm	1,350		

Affordable Housing				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	20	11%	40	6%
2 bed 3p	26	14%	78	12%
2 bed 4p	49	27%	147	23%
3 bed 4p	59	33%	236	37%
3 bed 5p house	20	11%	100	16%
4 bed 6p house	6	3%	36	6%
Totals	180		637	
% of dev total	34%		39%	

Private Sale				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	126	36%	252	25%
2 bed 3p	87	25%	261	26%
2 bed 4p	83	24%	249	25%
3 bed 4p	50	14%	200	20%
3 bed 5p house	6	2%	30	3%
4 bed 6p house	0	0%	0	0%
Totals	352		992	
% of dev total	66%		61%	

## 6.5 Target Metrics and Accommodation Schedule – Phase 2 only

“Base scheme” 256 units:		
<b>GIA - total Residential including energy centre</b>	c 23,039 sqm	
<b>NIA – Apartments and Townhouses total</b>	c 18,080sqm	
<b>Residential Net to Gross Ratio</b>	75-76% Flats	78%+ including townhouses
<b>GIA Community use</b>	n/a	
<b>Proportion Affordable: Private within Phase (by Habitable Room)</b>	39% Affordable	61% Private

## 6.6 Area Schedule, SOA Summary and Unit Mix Phase 2 only

PHASE 2 Totals				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	74	29%	148	19%
2 bed 3p	60	23%	180	23%
2 bed 4p	48	19%	144	18%
3 bed 4p	52	20%	208	26%
3 bed 5p house	16	6%	80	10%
4 bed 6p house	6	2%	36	5%
Phase Totals	256		796	

	Total	Affordable	Private
GIA- Resi sqm	23,029	8,236	14,793
NIA - Resi sqm	18,081	6,717	11,364
Community sqm	0		

Phase 2 Affordable Housing				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	10	12.0%	20	7%
2 bed 3p	12	14.5%	36	12%
2 bed 4p	17	20.5%	51	17%
3 bed 4p	26	31.3%	104	34%
3 bed 5p house	12	14.5%	60	20%
4 bed 6p house	6	7.2%	36	12%
Phase Totals	83		307	
% of PHASE total	32%		39%	

Phase 2 Private Sale				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	64	37%	128	26%
2 bed 3p	48	28%	144	29%
2 bed 4p	31	18%	93	19%
3 bed 4p	26	15%	104	21%
3 bed 5p house	4	2%	20	4%
4 bed 6p house	0	0%	0	0%
Phase Totals	173		489	
% of PHASE total	68%		61%	

## 6.7 Target Metrics and Accommodation Schedule – Phase 3 only

“Base scheme” 276 units:		
<b>GIA - total Residential including energy centre</b>	c 25,370 sqm	
<b>NIA – Apartments and Townhouses total</b>	c 19,490sqm	
<b>Residential Net to Gross Ratio</b>	75-76% Flats	78%+ including townhouses
<b>GIA Community use</b>	n/a	
<b>Proportion Affordable : Private within Phase (by Habitable Room)</b>	40% Affordable	60% Private

## 6.8 Area Schedule, SOA Summary and Unit Mix Phase 3 only

PHASE 3 Totals				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	72	26%	144	17%
2 bed 3p	53	19%	159	19%
2 bed 4p	84	30%	252	30%
3 bed 4p	57	21%	228	27%
3 bed 5p house	10	4%	50	6%
4 bed 6p house	0	0%	0	0%
Phase Totals	276		833	

	Total	Affordable	Private
GIA- Resi sqm	25,368	9,827	15,541
NIA - Resi sqm	19,492	7,608	11,884
Community sqm	1350		

Phase 3 Affordable Housing				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	10	10.3%	20	6%
2 bed 3p	14	14.4%	42	13%
2 bed 4p	32	33.0%	96	29%
3 bed 4p	33	34.0%	132	40%
3 bed 5p house	8	8.2%	40	12%
4 bed 6p house	0	0.0%	0	0%
Phase Totals	97		330	
% of PHASE total	35%		40%	

Phase 3 Private Sale				
Type	Total of Type	%mix by unit	Total Hab Rooms	%mix by Hab Rooms
1 bed 2p	62	35%	124	25%
2 bed 3p	39	22%	117	23%
2 bed 4p	52	29%	156	31%
3 bed 4p	24	13%	96	19%
3 bed 5p house	2	1%	10	2%
4 bed 6p house	0	0%	0	0%
Phase Totals	179		503	
% of PHASE total	65%		60%	

## 6.9 Parking Spaces

New parking areas are to be provided on-site either under 'podium' gardens at ground level between blocks or around the streets and landscaping at ground level.

A new CPZ will be implemented across the estate such that publicly accessible parking spaces will require residents permits.

In line with agreed ratios for the scheme permitted in outline, it is proposed to provide parking spaces for residents of the affordable housing at a ratio of 0.47 space per dwelling.

This would equate to a minimum of 85 spaces spread proportionally across phases 2 & 3.

In addition, an allocation of 54 designated parking spaces for sale to owners of private apartments is currently allowed for in the viability modelling.

Further residents permit parking spaces may be provided subject to landscape and architectural design and planning policy requirements.

## 6.10 Proposed Massing

Accommodation is to be distributed across the site as both rows of terraced Townhouse and apartment building typologies.

Storey heights will range from 3 to 8 subject to planning and MOD review.

## 6.11 Tenure Distribution

A visually 'tenure blind' appearance is the driver for design in terms of tenure distribution.

Both Townhouse and apartment building typologies are to have affordable and private sale homes. The current distribution separates tenures in apartment buildings either by entire building or by vertical core for management and legal / ownership reasons.

## 6.12 Planning Requirements

The Planning strategy is to submit a new full 'drop in' application for the whole of Phases 2 & 3, to achieve a satisfactory full detailed planning permission to enable both phases to be delivered to the required quality and programme. This is described in further detail in the dedicated Planning section of this report.

This strategy has been endorsed by independent planning consultants and was supported by Harrow's Interim Chief Planning Officer during the early working stages of this business plan.

### 6.13 Proposed Design: feasibility sketch options:

Feasibility studies were undertaken during the early working stages of this business plan.

The overall masterplan has been worked on to address the previously mentioned opportunities for optimisation whilst being guided by the Project Objectives and Project Vision.

More family houses are proposed along the west and northwest boundaries of the site. This will result in a better aspect when seen from rear gardens of neighbouring houses along Shaftesbury Avenue and Dudley Road (the previous permission had flatted blocks up to 4 storeys along part of those boundaries).

An indicative Masterplan and 3d view images are shown below for illustrative purposes:





## 6.14 Potential for further improvement and options for consideration

The following points identify further opportunities for consideration as the design progresses with a view to improving on and optimising the site's full potential. *It should be noted that none of the suggestions below have been included in any financial modelling presented in this report.*

- Additional height: subject to urban design and aviation constraints. Specialist consultants have been engaged to begin early consultation with MOD in advance of pre-Planning stage. This will be within the criteria currently set by the LBH.
- Additional Shared Ownership Homes: this could help to create a more balanced community through a greater mix of tenures. Note this would not be in place of any Affordable Rent Homes that are allocated for re-provision of existing housing. Advice will also be sought from agents as to their view on tenure mixes to create the most successful outcomes for all.
- Improved sustainability performance over and above Building Regulations requirements: The HSDP and the council may wish to have the proposed townhouses built to Low or Zero carbon standards. This could be a way for Harrow to fulfil its intention to move towards zero carbon homes, and to future-proof its residential assets against fuel poverty and against the need for early retro-fit of technologies or refurbishment of building fabric. Appendix 4 includes a 'menu' of further Sustainability measures that could be introduced subject to more detailed design to understand cost and management implications.

## 6.15 Sustainability Requirements

Wates has prepared a Sustainability Strategy document for HSDP. This addresses wider sustainability and Environmental and Social Governance (ESG) issues in the round, in addition to carbon and energy use, taking as a cue the '7 Themes' in Harrow's Climate and Ecological Emergency Interim Strategy Action plan. The Design Team will be required to drive achievement of the goals of the Sustainability and ESG Strategy. A Sustainability Strategy document specific to Grange Farm is included in Appendix 4

Further sustainability targets and potential enhancements for discussion and consideration as also presented in Appendix 4. This includes a menu of Grange Farm specific options to consider. A clear early aspiration would be to target all townhouses as 'Zero Carbon ready'. Wates has experience of delivering a number of award-winning homes to these standards with other Local Authority Partners. Options for Sustainability Uplift are to be assessed in terms of design and cost implications as the design and project evolves in early stages of pre-planning.

## 6.16 Affordable Housing Units

Approximate quantum and mixes to be as per accommodation schedule, detailed specification to be established in due course. Both of the above will be worked through in consultation with LBH, who will need to be satisfied that the new affordable accommodation they will purchase meets their requirements. All dwellings to meet or exceed London Plan and National Space standards floorspace areas. Mobility needs of existing and future residents will be allowed for including a minimum 10% of dwellings to be wheelchair user compliant, meeting Building Regulations Part M4(3).

## 6.17 Detailed specifications and drawings

Not applicable to this Initial Phase Business Plan. To be provided in due course

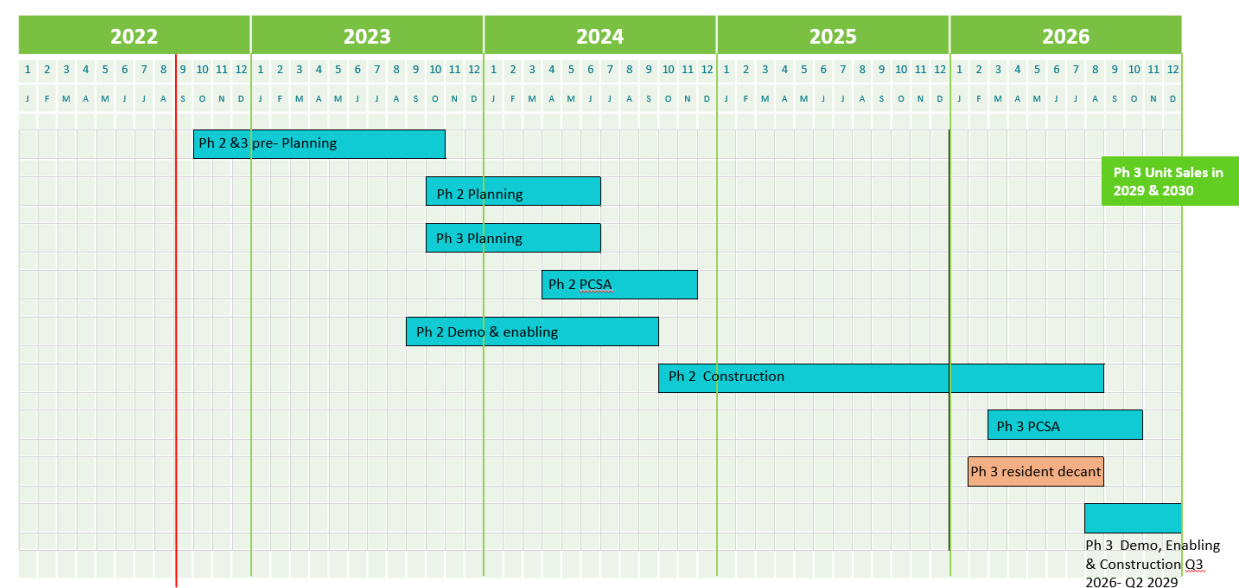
## 7 Programme

### 7.1 Target Development Programme

A summary of the programme and key milestone dates is set out in the following table.

Milestone:	Target Date
Consultant team procurement	Aug-Oct 22
Project commencement	Nov 22
Pre-planning period and stakeholder consultation	Nov 22 – Sept 23
Submit Planning application (phases 2&3 combined)	Sep 23
Planning determination period including decision and S106	Oct 23 – Jul 24
Phase 2 demolition and enabling works start	Sep 23
Approval to commence PCSA for Phase 2	Mar 2024
Phase 2 Unconditional / Land draw down and main works start	Oct-Nov 24
Approval to commence PCSA for Phase 3	Feb 2026
Approval to enter into Phase 3 Build contract	Oct 2026
Phase 3 Unconditional / Land draw down date	Nov 2026

The linear programme below sets out the same key workstreams year on year:



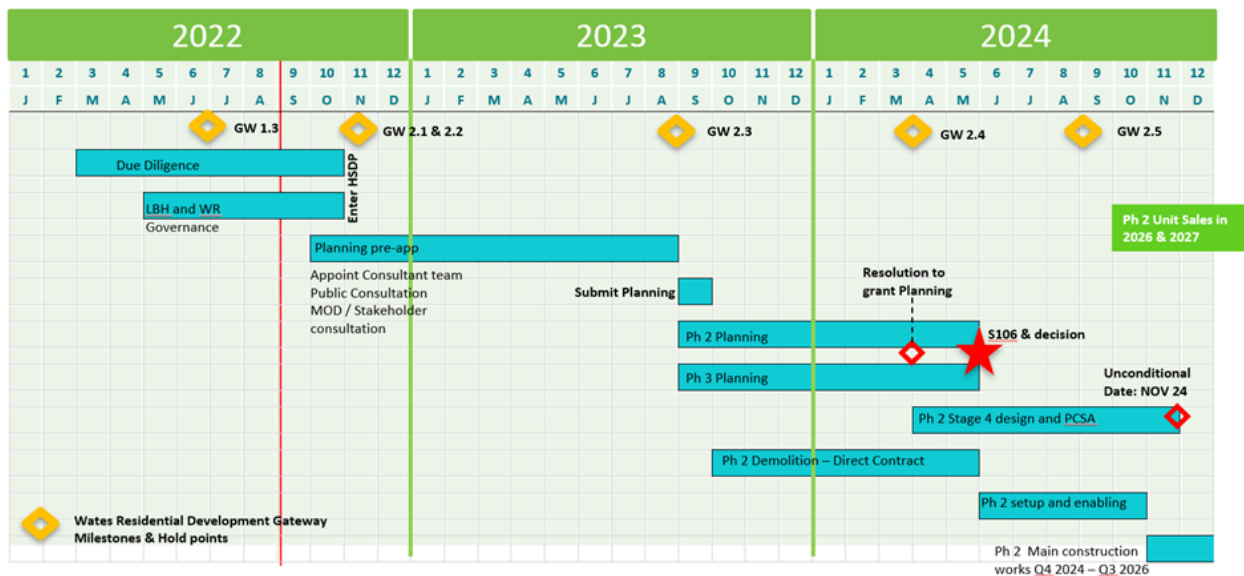
## 7.2 Key Governance Milestones

As summarised in table below:

Milestone:	Target Date
Wates governance and Board approvals	July 22
LBH governance and Cabinet approvals	Oct-Nov 22
HSDP Board approval to bring into partnership and Commence Phase	Oct 22
Approval to submit Planning application (phases 2&3 combined)	Sep 23
Approval to commence PCSA for Phase 2 (on receipt of resolution to grant planning permission)	Mar 24
Phase 2 Unconditional / Land draw down date	Nov 24
Approval to enter into Phase 2 Build contract	Nov 24
Approval to commence PCSA for Phase 3	Oct 25
Phase 3 Unconditional / Land draw down date	May 26
Approval to enter into Phase 3 Build contract	May 26

## 7.3 Programme to Phase 2 Start on Site

The linear programme below sets out the key workstreams to begin Phase 2 main construction work. Wates Internal governance gateways are shown indicatively for information only.



## 7.4 Phase 2 Phasing – Key Dates

As summarised in table below:

Milestone:	Target Date
Planning Application submission date (phases 2&3 combined)	Sept 23
Phase 2 Unconditional Contract Close (Enter into Build Contract)	Nov 24
Phase 2 Construction commencement	Q4 2024
Phase 2 Construction PC	Q3 2026

## 8 [EXEMPT]

## 9 Risk Management

- The risk profile for the HSDP partners comprises two aspects:
  - Commercial/financial risks to the performance of the scheme
  - The structure of risk sharing between the partners
- Further detail of the Commercial/financial Risks are set out below and can be broadly categorised as follows:
  - Non-construction risk
  - Construction risk
  - Revenue risk and opportunity
- A detailed risk and opportunities register along with mitigation and management strategies has been put in place. This is a live document and will be regularly updated.
- The sharing of risk (and opportunity) between the partners varies on whether the project is in the pre-construction phase (essentially, all activity prior to entry into the construction contract for development of the site) or post-construction phase (all activity post entry in the construction contract for the site). Further details are set out in the table below:
- The pre-construction forecast expenditure is shown in more detail in the Financial section

### Partner Risk Sharing by Project Phase

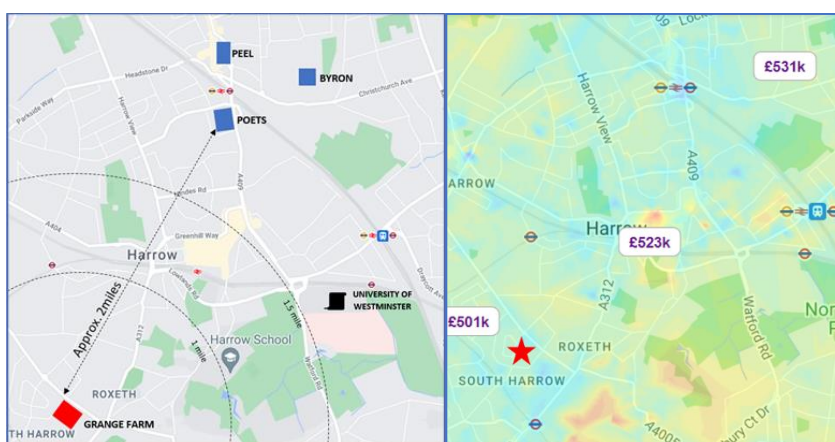
Partner Risk Sharing Structure	Wates	Harrow
<b>Pre-Construction</b>	Wates is required to fund 100% of pre-construction expenditure on private sales elements (currently circa 60% of costs) LBH funds 100% of the CWA elements, which comprise the affordable housing and the community building. In the event the project does not proceed, a share of costs is recoverable from Harrow – either 50% on termination of the scheme or 100% deferred to later phases (at Harrow's discretion)	Changes to the viability appraisal (financial model) principally impact land value. Overall partner margin will change depending on gross sales revenue, but margin is currently fixed at 15% of this. Harrow shares the risk if the project does not proceed.
<b>Post Construction</b>	Under the construction contract, Wates Construction Ltd will carry responsibility for the cost of delivery of the specified project and cost changes will therefore be borne wholly by Wates. Changes to the revenue (or cost changes arising from changes to building design/specification) will sit with the HSDP and therefore be shared equally between the partners through the sharing of the development margin.	Land value is fixed and therefore Harrow's revenue from this becomes certain. Cost risk is transferred to Wates as contractor. Changes to the revenue (or cost changes arising from changes to building design/specification) will sit with the HSDP and therefore be shared equally between the partners through the sharing of the development margin.

## 10 Sales and Marketing Strategy

### 10.1 Sales & Marketing Overview

Grange Farm is located in South Harrow approximately 2 miles from the other core HSDP sites. Whilst average transaction values in this area are lower than other parts of Harrow (*source: Primelocation*), this is largely driven by a lack of new homes in this part of Harrow, rather than a desire to live elsewhere.

Well connected to public transport links (South Harrow underground is approximately 10 minutes' walk) and served by a number of local amenities – including a large Waitrose next door and, with access to nearby open green space, it presents all the right components to suggest there is a potential opportunity to grow values over the development programme.





## 10.2 Sales and Marketing Strategy, Collateral & Budget

A full marketing strategy will be developed over the next 12 months which will also include an allocation of the estimated sales and marketing budget. This budget will be apportioned according to the areas needed to deliver a successful sales campaign. Our strategy will focus on:

- Building an independent brand/identity for the scheme. Delivery of all marketing collateral required – including brochures/websites/apartment finders/hoarding/advertising/models etc.
- Raising early awareness of the scheme in order to drive registrations
- Rolling out a phased release strategy which runs concurrently with any construction phasing
- Balancing off plan sales and post PC sales in order to limit void costs and de-risk the project
- Working with appointed residential agents in reviewing pricing and agreeing launch strategies in order to manage supply and demand
- Delivering an on-site marketing suite or off-site marketing hub to support off plan sales.
- Delivering show apartments in each phase of the schemes at earliest opportunity
- Managing a number of exclusive launches and early opportunities to local buyers
- Developing meanwhile uses on areas that are vacant in order to activate sites and deliver benefits for the community
- Developing an advertising strategy to support launches and sales
- Managing the customer journey through to handovers and post completion defect management.

The marketing budget (currently set at 3.25% of Private Sales revenue in each phase as for other HSDP core sites) in summary will cover the following headlines:

Heads of Expenditure	Who	What
<b>Sales &amp; Legals</b>	Sales Agents, Solicitors	Commission to sales agency, conveyancing fees to solicitors + disbursements
<b>Marketing Collateral</b>		
<b>Brand and Identity</b>	Creative Agency	Creation of the overarching and development brand/Logo/Tone of Voice/Messaging/Colours/Direction
<b>Brochure</b>	Creative Agency	Copy/images/floorplans & print production - this can be for more than 1 brochure too
<b>Website</b>	Creative Agency or Digital Agency	Micro-site can include an apartment finder & for hosting system
<b>Model</b>	Modelmaker	Scale model - can include tech apartment finder system
<b>Interactive Media</b>	Visualisation studio	Media table - large interactive touch screen with digital information that guides user around the development. Apartment finder solutions either app based, or web controlled
<b>CGI</b>	Visualisation studio	Covers internal/external design and detail/landscaping/communal amenity. CGIs can also be animated
<b>Photography</b>	Photographer	Lifestyle (area), finished product imagery to update website later
<b>Film</b>	Filmographer	Short intro film to development/area. Can be used across social media assets.
<b>Hoarding/Signage</b>	Creative Agency/Printers	This includes production and installation plus any updates required
<b>Advertising</b>	Buying Agency/Creative Agency/Direct Media	Placement of all advertising across all media - print/digital/outdoor/direct mail
<b>Marketing Suite</b>	Interior Designer	Selection of FF&E/Layout design for marketing suite. Includes construction and running costs
<b>Show Apartment</b>	Interior Designer	Responsible for furnishing/layout of the show apartments. Choosing, procuring, and installing FF&E - includes window dressing, artwork, accessories. Includes running costs, business rates
<b>PR/Sponsorship</b>	PR Agency alongside some In-house	Often makes sense to appoint a PR agent to proactively push the scheme for editorial features above pure advertising. Can also be used to leverage any local collaborations which further endorse the brand.
<b>Contingency</b>		

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## 11 Building and Estate Management

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### 11.1 Building and Estate Management

In general, the approach to long term asset management is centred around 5 principles:

Resident focused

Value for Money

Locally grounded procurement

Place making centred

Limit Council exposure

A specific Grange Farm Estate Management Strategy is to be agreed through consultation with LBH Regeneration and Housing team as the design progresses.

Estate management offices and back of house accommodation (e.g., Facilities Management storage / workshop space) have been allowed for in the Community Building to be built in phase 3.

Space for FM storage will also be provided in Phase 2, likely to be in part of the ground floor of one or more buildings providing affordable housing.

The strategy for the long-term management of the development will be discussed and reviewed with key stakeholders prior to submission to planning. This will ensure that the long-term operational management requirements of the developments can be integrated into their design. The construction contracts will include obligations for the provision of training to the Estate Management team during the build phase to ensure that a seamless handover can be achieved, and the developments can be successfully run and operated from day one.

The following will be key features of the Estate Management strategy:

Designing for low cost in use - public open spaces and new roads will be retained within the estate for management, removing any cost impact on the Council.

Service charges - Service charges are applied in a tenure blind way and the operational requirements of the developments (e.g., post, management spaces etc) will be considered in developing up the designs. The service charge strategy for each scheme will be developed in conjunction with the purchaser of the affordable housing product for that development

## 12 Stakeholder Engagement and Communications Plan

### 12.1 Pre- Planning and engagement with the wider community

The appointed Planning consultant will lead on the optimum strategy, to be agreed with LBH Planning and other Harrow partners.

The HSDP has to date approached political and public engagement consultants to set out an initial strategy for pre-planning engagement. The following table sets out an indicative strategy to be worked up in detail prior to implementation.

Item	Description
<b>Stakeholder audit and engagement plan</b>	Undertake a full appraisal of the key stakeholders including politicians, community groups, key neighbours and business occupiers, and set out an engagement strategy outlining the proposed approach to these key stakeholders – along with recommendations for digital engagement.
<b>Messaging and project narrative</b>	Work with the project team to produce a document including project narrative (focusing on the education narrative), key messaging and Q&A, to inform all communications and content. This will build on the information provided by the consultant reports.
<b>Consultation website</b>	Produce a dedicated project website to host information on the proposals and act as a contact hub. The website will include a mechanism to leave contact details and be kept informed. The embedded formatting will include the following functionality: <ul style="list-style-type: none"> <li>• Landing page</li> <li>• About the project</li> <li>• Proposal summary</li> <li>• Get in touch</li> </ul> The website will also include a link to a Typeform survey, via which visitors will be able to share feedback on the proposals.
<b>Stakeholder briefings</b>	Offer introductory briefings to community stakeholders and local politicians.
<b>Near neighbour &amp; Steering Group briefings</b>	Offer introductory briefings to near neighbours and begin to work with the Steering Group.

### 12.2 Community and Stakeholder Engagement - Ensuring fair representation

We will ensure that we engage with all stakeholders, including hard to reach groups i.e., people within society who are typically under-represented in the planning process, including groups who have protected characteristics under the Equalities Act. These groups may include ethnic minorities, people with disabilities, and young people.

We will make every aspect of consultation as easy to understand as possible. To achieve this, we will:

- Create image-based consultation material wherever possible and make material available in different languages upon request. Images and materials will reflect diversity of the borough
- Utilise a translator service for key engagement events if required

We will work collaboratively with Council Officers and Members, who already have relationships and knowledge of the local communities and Residents groups, to sense-check these to achieve the best level of participation and attendance.

**Young people:** We recommend holding a special young people's consultation event at a local primary school.

We would also want to work with local youth representative groups such as setting up a briefing event or presentation to Harrow Youth Parliament.

**Working families:** Working families often have difficulty accessing consultations because of time and childcare commitments. We will therefore ensure that consultation events are scheduled for evenings/ weekends as well as during the day. Our consultation events will be family-friendly, with activities for children, and secure and safe space for families.

**People with disabilities:** A key criterion for choosing consultation venues will be that they are accessible to those with physical disabilities. We will work with the local authority to identify any local forums and groups representing people with disabilities to ensure that we are considering their members' needs and that they can provide support in publicising events.

**Ethnic minorities and those with limited English language skills:** We will ensure that stakeholders from a wide range of backgrounds have convenient access to a consultation event. Promotional poster packs will be distributed to any local community centres and places of worship.

Inclusion of feedback from harder to reach groups

- Following each consultation event, we will create an interim consultation report which will be circulated within the project team and to lead Councillors. This will form the basis of a Design Team Meeting discussion
- At each stage in consultation and application we will issue 'you said, we did' information, via newsletters, notifications through the above listed channels and to the email addresses of registered interested parties, so the public understand the influence that they had
- The consultation statements submitted with each application will also include the details of how the designs responded to public and stakeholder feedback.

### 12.3 MOD and other Statutory bodies

Wates has already instructed a specialist aviation safeguarding consultant on the HSDPs behalf to prepare a pack for draft consultation with MOD. This is intended to give the project team an early understanding of the MOD's likely position on the proposed development.

Other Statutory bodies will be consulted at appropriate stages as part of the normal pre- and post- planning process.

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## 13 Social Value

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### 13.1 Strategy

Please refer to Appendix 3 for details of Social Value strategy for Grange Farm.

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## 14 Equalities & Inclusion

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### 14.1 Inclusive design approach

#### Accessibility

- The development will be designed to meet the requirements of the Building Regulations in particular Part K & Part M and where practical the standards as defined within BS 8300:2018.
- Create step-free routes with lift or level access to all areas.
- Changing Places facility provided.
- Parking for motorised and accessible cycles.
- Ensure interior spaces are sized appropriately for those with mobility impairments.
- Accessible visitor parking provided on-street.
- Consideration will be given to building users with cognitive impairments and mobility impairments and interior finishes will be selected to avoid visual confusion.
- Ensure interior finishes and signage assists clear wayfinding and provides a stress-free experience to those visiting.

#### Diversity

- Respect and celebrate the cultural, social, and ethnic diversity of residents within the borough
- The development will be equally accessible to all ages
- Consideration will be given to multi-generational housing

#### Inclusion

- Ensure that no visitor to the Community Facility building or staff member feels vulnerable
- Provide non-gender specific wash-room facilities within the Community Facility building and ensure that signage throughout the building supports this.

### 14.2 Equality Act Approach

The Public Sector Equality Duty does not apply to The Harrow Strategic Development Partnership as it is not a public sector body within the meaning of the Equality Act 2010 and therefore is not strictly bound by the provisions in the duty. However, the HSDP are covered by anti-discrimination law and must ensure policies and plans do not discriminate against staff, contractors or members of the public as outlined in the Equality Act 2010. Additionally, as the Council is a member and 50% owner of the partnership, the HSDP will commit to following and adhering to the principles of the legislation particularly with regard to considering the impact of its activities on groups with protected characteristics.

The partnership is committed to advancing equality of opportunity and seeking to foster good relations with all. Equalities Impact assessments will be carried out as appropriate.



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## 15 Consultant Team

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### 15.1 Consultant Team

Core Consultant Team procurement methods (in line with Schedule 4 of the Members Agreement) and shortlisting of organisations to be invited to Tender were established in July 2022.

Confirmation of those identified for tender was issued as part of the HSDP Board August 2022 meeting pack.

The procurement process for consultants requiring “Full Tender” was undertaken during August 2022, and firms shortlisted for Stage 2 fees advised in September 2022.

Recommendations for consultant appointments are anticipated to be made following fee returns and assessment of competency and interviews by end of October 2022.

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## 16 Health and Safety

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### 16.1 CDM Regulatory Framework

The CDM Regulations apply to all Construction Work carried out by or on behalf of the HSDP. Under the CDM regulations the Client is central to the management of health and safety on a construction site. A Client is defined in the CDM Regulations as “any person for whom a project is carried out”; it is expressly stated that there may be more than one Client on a project. For the purposes of the Development, the HSDP (given it is in itself a legal entity) is the Client for all projects it is involved in.

An CDM Client Adviser will be appointed for the duration of the project to support the HSDP in meeting all of its obligations as a Client under the CDM regulations.

The HSDP will be responsible for ensuring that both a competent Principal Contractor and Principal Designer are appointed for the project.

### 16.2 Safety Approach

It is proposed that the HSDP adopts the Wates primary objective of Zero Harm for all schemes. Successful achievement of this starts right from the beginning of the design process. Regular H&S design audits will be undertaken and opportunities for off-site manufacture maximised in the schemes.

### 16.3 Zero Harm – Wates Approach Explained

Wates Zero Harm Strategy aims to raise awareness of these policies and get everyone involved by creating a culture in which people promote and champion behaviours that keep everyone safe and to have a positive impact on the environment and the confidence to challenge when they are not.

### 16.4 Wates Path to Zero Harm Is:

LEAD - Each leader inspires their people to make ZERO HARM happen

SIMPLIFY - Ensure systems and processes help and do not hinder progress

RE-THINK - We re-assess, challenge and re-engineer to eliminate risk

INVOLVE - We engage everyone who works for us to embrace ZERO HARM

LEARN - We seek out, share, adapt and embed best practice

TRACK - We identify where and how we can improve to create new standards

## 17 Reporting

- The financial management and reporting are the responsibility of the Development Manager (DM).
- A process of monthly reconciliation and reporting has been developed and is currently reported in the monthly HSDP Board Meeting.
- While the frequency of the Board Meetings may change, the reporting will continue to be monthly and consist of a reconciliation of historic and forecast costs to the Financial Model, along with the following:
  - Key updates / issues
  - Recommendations / approvals sought
  - Safety Health and Environment
  - Finance & Accounting
  - Programme
  - Accommodation schedule
  - Risks & Opportunities
  - Social Value
  - PR / Comms
- This will be referred to as the “Monthly Performance Report” (MPR).
- It may also be necessary to provide interim updates to the report, as and when directed, and provide supplemental reports to third parties.

## 18 Appendices

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## **Appendix 3**

### **Social Value and Community Engagement summary**



## Grange Farm Social Value

Harrow's goal of delivering homes from which residents can build themselves and their families a secure future is shared by the HSDP. It is also recognised that Harrow and its stakeholders understand local residents best and have unique access to the needs, desires, and aspirations of your residents.

We acknowledge the diversity of the communities which Harrow house, and we align with your commitments toward supporting equality, diversity, and inclusion. We believe that together, we can truly enhance equality, inclusivity, and empowerment.

Wates has a long and successful track record of building not just homes but communities with lasting legacies and it will bring this experience to the HSDP.

The Grange Farm vision for Social Value has been developed in line with the Council's social value policy, which is to support Harrow residents to become more financially resilient and independent and fulfil their aspirations around social mobility.

### **Residents Steering Group and 'Needs Analysis'**

Key will be to involve the Grange Farm Residents Steering Group at an early stage to establish the priorities of the residents and local community so as to ensure a tailored offering is made.

Once the project is live, we intend to set up an early meeting between the Steering Group and our dedicated Social Value team. Given the time passed since the original submission, a 'Needs Analysis' report will be undertaken and the Steering Group will be a major consultee in that process.

Social value is an integral part of every development to be undertaken by the HSDP but the impact we can make depends on the size of the project. Given the size and nature of Grange Farm we believe in partnership and that we can make a sizable and lasting impact in the area. To help achieve this we will appoint 3 dedicated staff members: Social Value Manager (SVM), Social Value Advisor (SVA) and a Social Value Champion who will work closely with you to lead this key operational area, holding accountability for the delivery of our jointly agreed proposals.

Every penny invested must be spent effectively, delivering maximum benefits to people, communities and society as a whole, helping to create sustainable local economies. That is why we apply an end-to-end, targeted rather than 'scattergun' approach to employment and training, from ensuring we focus our efforts in providing local jobs, through to school engagements, pre-employment support and apprenticeship programmes. We forge the partnerships needed between private and public sectors to ensure that procurements upskill local workforces and support youth employment.

## Key Themes

For Grange Farm we will create a bespoke Social Value delivery model; providing a range of activities, services that all Grange Farm residents and the wider Harrow communities can access. Activities will be categorised within three overarching core themes.

- Inspiring Aspirations – through Education and Training
- Creating Social and Economic Prosperity – through Local Employment and Local spend
- Growing stronger and more sustainable communities – through community safety, community belonging, trust and pride. Safeguarding the environment through active stewardship.



## Overall Targets – Key Performance Indicators

During the original bid proposal stage, several programmes and initiatives, or Key Performance Indicators (KPIs), through the social value delivery were suggested.

We are also aware that Harrow have executed a consultation with residents on the Grange Farm Estate. Asking local residents what they felt were the priority needs are in the local area and what they feel needs to be addressed. The results demonstrated the top 3 areas as areas of concern.

- Community Cohesion
- Community Safety and the fear of Crime
- Drug and Alcohol Misuse (the impact that this is having on the younger generations)

The original suggested KPIs are set out below as headline topics. All will be subject to change following consultation with the residents group, LBH and other stakeholders as appropriate.

## Inspiring Aspirations

Social Value activities (KPIs)	All targets to be determined through consultation and engagement
Work Experience (placements minimum of 1 week)	
CIAG (Careers Information, Advice & Guidance & Work Placements)- unemployed 64hrs of av. 20 participants (including planning time)	
CIAG - local schools, colleges, My Yard & SEND school (staff hours)	
Paid Work Experience for Grange Farm residents paid (placements minimum 1 week)	
Aspiring Harrow – Key Stage 2 engagement (students)	

## Creating Social and Economic Prosperity

Social Value activities (KPIs)	All targets to be determined through consultation and engagement
Apprenticeships:(between HSDP & Supply Chain)	
New Jobs Created (this will include those from furthest from the workforce groups below)	
Long term unemployed	
NEETS	
Disabled / Special Education Needs & Disabilities	
Care Leavers	
Ex-offenders	
Homeless	
Local Spend – supporting local business and economic growth 20% of the build value spend locally with Harrow and surrounding boroughs	20% of build cost

## Growing stronger and more sustainable communities

Social Value activities (KPIs)	All targets to be determined through consultation and engagement
Supporting the Community & Voluntary organisations (CVO) with 1-2-1 sessions & workshops. Supporting them in their sustainability for the future, in turn they will remain fit for purpose to continue to support Harrow Residents	
Time allocated for volunteering	
Sponsorship of a health clinic	
Donations to Grange Farm Community Events	
Volunteering through My Yard to help feed the local community	

## Monitoring & Reporting

Wates Residential internal collection document is the Community Investment Plan (CIP). The CIP captures all the delivery data in one place. Every quarter the CIP data will be extracted into an economic, skills & community report. The CIP has the ability to segment data, reporting on Age, Gender, Ethnicity, furthest from the workforce groups etc. This is extended into quarterly reporting analysing trends, and a detailed Project Impact Report (PIR), midway through each project and on completion.

The Social Value Portal is an online solution that allows organisations to measure and manage the contribution that they and supply chain makes to society, according to the principles laid out within the Public Services (Social Value) Act 2012 & the PPN06/20 Social Value Model. Their solution allows organisations to report both financial and non-financial data and rewards organisations for doing “more good” in the community. The SVP calculates the impact using the unit cost database 2.0 version, as its proxy bank.

## Embedding Social Value through our procurement

We will work with our supply chain to deliver our social value commitments. Our supply chain is key in our delivery, and we work with our subcontractors before the tender stage. Our Social Value Manager will create a table of requirements and calculate the targets against each consultant / subcontract value. A monitoring tracker review will take place. The target outputs will be delivered by the HSDP, the supply chain and in partnership with key stakeholders. Consultants and subcontractors will meet with key stakeholders / training providers, so all parties understand the requirements. All consultants and subcontractors will be required to submit monitoring forms demonstrating compliance with the social value programme, providing progress updates, sharing successes, and highlighting any concerns with updates reported quarterly to the HSDP Board.

## Social Value Funding Approach

The Social Value offer is driven through the HSDP and the Supply Chain offering ensuring that the programme is delivered without the requirement for additional funding by the Council or any financial impact upon the Councils returns or land value.

## Alterations to the Social Value plan

Once a baseline is agreed, as a partnership we will review the SV Plan annually ensuring that the KPIs are still addressing the community need. At any given time, it is agreed that the KPI outputs may be altered but overall the offering will remain within the cost envelope and principles as agreed for the ‘baseline’ offering.

### Further Engagement with the Grange Farm community

The HSDP will work for the benefit of local communities, seeking to make a positive impact on people's life chances. This includes working in partnership with residents to lead innovation and address their needs. We believe that by working together we can get the job done better. We would welcome discussion with active local community residents to help us shape the social value offering, considering the priorities identified by residents. This will be reviewing the current KPIs, removing some and replacing within alternatives, whilst remaining within the delivery cost envelope. There have been a few suggested alternatives from local partners to date, and these can be explored and expanded on as engagement progresses.

1. My Yard would like to create a cycle rebuild/ maintenance / repair club in partnership with the MET police. This would provide a diversionary programme for young people. This could be extended into a ride club / school for young people involving local volunteers.
2. A prevention programme on county lines in schools and youth provision within and around Grange Farm
3. Street Doctors extension into My Yard
4. Summer Holiday Enrichment Programme for young people

Being respectful to everyone and encouraging diversity is valued, so our programmes and activities are designed to be accessible to all, and co-design is a great approach to ensure we are being inclusive.

We look to build long lasting partnerships with local communities including supporting voluntary and community organisations to help generate social value and amplify our social value impact and we would be keen to explore this approach for Grange Farm. All the while being mindful of managing everyone's expectations and remaining within the remit of the budget set. (Cost envelope)

Lastly, we would like to propose creating a mailing list with all existing residents on the Grange Farm estate. The purpose of this would be to share regular updates on the development via our Newsletters and additionally to share all the social value opportunities that will become available to Grange Farm residents directly to their mailbox, for example Jobs, apprenticeship, pre-employment programmes etc.

## **Appendix 4**

### **Sustainability Strategy**



# HSDP ESG / Sustainability Tracker- GRANGE FARM PHASES 2&3



12/9/2022- V01

#	Theme		Qualitative Theme	Quantitative/Measurable Target	Comments	Status	Included	Target Option	Not targeted
1	Carbon Neutral Development	Pre-Construction	Whole Life Carbon Assessment	RICS methodology	as per RICS methodology				
			Future Homes Standard 2025 (FHS)	Target to design to FHS standards in advance of mandatory dates					
		Construction	GLA Energy Performance Targets	Target FHS performance standards					
			Part L Building Regulations	Exceed minimum targets as above					
			Thermal Performance Standards	U-Value - as FHS standards	Quantitative Target				
				Thermal Bridging - Bespoke Calculations - as FHS standards	Quantitative Target				
				Air Tightness	target 5.0 m3/h.m2 maximum or better	Quantitative Target			
			EPC rating	Target Rating of A on all new homes	Quantitative Target				
		Post-Construction	Energy/Electricity Consumption	Consider and Plan for 100% Renewable Heating and Energy Systems	Quantitative Target				
				100% LED / Low Energy Lighting	Quantitative Target				
				Low energy appliances - rating of A					
			Measuring Energy Usage	Smart meters in all homes	future proof connectivity and data analysis				
			Measuring Energy Usage	Centralised Energy Centres	allow regular measurement and monitoring of energy use in individual dwellings, with a view to providing information on optimal usage to benefit users and understanding operational energy				
			Offset remaining omissions	Recognised schemes	Note incoming Future Homes legislation: offsetting allowances will be phased out				
2	Zero Emission Transport / Sustainable Transport	Minimise Car Use		Target Car-free development wherever possible					
				Car-sharing schemes					
				Establish Green Travel Plan with digital connectivity					
				Integration of / improvement to local bus service					
				Walking and cycling routes integrated throughout site and to wider community					
				Flexibility of infrastructure					
		Electric Vehicle Charging Points		Futureproofing for cable routes to all spaces	Meet or exceed London Plan requirements				
		Encourage Cycling		Meet or exceed London Plan cycling standards					
				Consider cargo bikes and other facilities e.g. wash down / maintenance area within cycle stores in place of potentially un-used storage space	demonstrate benefits of alternatives to standard cycle storage solution				
3	Net-Zero Waste Development	Pre-Construction	Circular Economy Statement	Minimise quantities of materials used	London Plan Requirement				
				Use materials efficiently					
				Eliminate waste					
		Construction	Construction Waste	Divert 98% waste away from landfill					
				Divert 100% by 2025					
		Post-Construction	Occupant Recycling	Enhanced recycling facilities					
				Provide food waste / compost bins					

4	Sustainable Development for Us and Nature	Humans	Scheme Design	Optimise development potential on previously used brownfield land		
				Universal Accessibility		
				High indoor air quality	Qualitative response	
				High indoor daylight levels	Qualitative response	
				Glare control - avoid at source		
				High acoustic comfort	Exceed minimum B Regs	
		Nature	Landscaped Amenity	Hard and soft landscapes		
				Publicly accessible landscaped areas		
			Biodiversity	Enhance retained landscapes		
				Achieve Biodiveristy Net Gain (BNG) in new landscapes		
				BNG minimum target of 10% across site		
				Net gain in tree planting for each site		
				Biodiverse and 'Green' Roofs - aim to maximise	Use for BNG and Urban Greening Factor (UGF) wherever possible	
			Wild Wealdstone' commitment	Plant trees and install wildlife	Borough-wide in addition to on site	
				Consult with Local Wildlife Groups		
			Local Food Production	Provide allotments on site	target some provision on all sites	
			Urban Greening Factor	Target UGF of 0.4 (for each and every site)		
5	Good Governance	Local Decision Making		Measure energy costs	Assess 'actual' performamnce against agreed targets - decisions must benefit community	
				Measure management and maintenacnce costs		
				Measure service charge		
				Measure overall running / living costs		
		Post Occupancy Audits		Energy Use	Review and identify areas for improvement	
				Transport Use		
				Occupant Health and Wellbeing		
6	Eco-Conscious Communities	Inform Local Residents		Provide sustainability best practice guidance	Home User guides	
				Provide energy conservation best practice guidance		
		Next Generation - Educate and Empower		Work with schools / young people	Social Value Programme	
				Education / Training		
7	Social Value Commitments	Industry		Internships / Work Experience	Social Value metrics	
				Employment / Training	Social Value metrics	
				Support Local Businesses and Communities	Social Value metrics	
				Public art exhibitions	Social Value metrics	
		Fuel Poverty		Minimise demand at source	Specification and Energy Strategy	
				Affordable energy solutions	Energy Strategy	
8	Sustainable Water Usage	Consumption of Potable (drinking) Water		Target of max 105 L pp / day	London Plan is 105 L pp / day	
				Low flow sanitaryware		
				Leak detection	Consultant design input on all targets required	
				Rainwater / Greywater recycling		
				SUDS		
		Measuring Water Use		Water meters in all dwellings	Post-occupancy recording where possible	
				Water Management Strategy		
9	Flood Risk	Vulnerability to Flooding		Flood Risk Assessments		
				Avoid / Mitigate risks in Design Phase		
				Introduce SUDS to improve Surface Water risk		
10	Pollution	Wates Zero Harm Environmental Commitment		Target to Eliminate environmental damage		
				Improve local air quality - AQ positive approach		
				Minimise combustion sources with harmful omissions	Demonstrate reasoning in Energy strategy	
				Minimise noise / light pollution in construction phase and in operation	Ecologist and MEP / lighting consultant to advise	
		Design / Construction Phase Monitoring		ESG/Sustainability Consultancy Reports	Consultants to provide ESG statements	
				In-house ESG Reporting	Harrow and Wates	

11	ESG Management / Implementation	ESG focussed investors	How do Wates and our Partnerships score on ESG assessments	e.g. Sustainability Reporting Standard for Social Housing (SRS), TCFD reporting and SECR mandatory in 2022	
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#	Theme	Business Performance Indicator	Quantitative Value Added (£'s)	Comments	Achieved
12	Sustainability& ESG Cost Savings and Value Added	Landfill Tax Avoided	Recycled Waste * Landfill Tax Rate		
		Cost of Energy	Fuel and electricity costs		
		Cost of Water	Water use on site and in operation		
		Cost of Waste Management	Cost of handling / recycling waste		
			Contractor fees		
		Waste Income	Revenue generated from recycling (per kg / tonne)		
		Paper and Printing	Cost of materials i.e. ink / paper / machines		
		Travel	Cost of public transport tickets		
		Outturn Sales Values	Sustainable developments values - monitor trends for sales premium		

## GRANGE FARM APPENDIX

### SUSTAINABILITY OPTIONS PAPER:

This paper has been prepared by consultants with a view to highlighting potential measures to include in the project.

It should be noted that all options are yet to be tested financially or in terms of overall holistic project design, performance and management.

Aspirational targets such as 'LETI, WELL, Wirescore' will be considered for adoption as appropriate as the project evolves. The idea of multiple Energy Centres is not currently regarded as a favourable solution by Wates team, but the intention is to review the optimum solution for the life of the project before commitment to final designs.

1 Introduction

1.1 Overview

This options paper outlines key sustainability options that could be considered for the Grange Farm Estate redevelopment. The overall aim should be to ensure the residential masterplan is future-proofed as far as possible by designing in now what is required to facilitate tomorrow.

1.2 Summary of Standard Practice versus Options for Beyond Best Practice

The following table sets out a range of sustainability issues/topics and summarises how the industry is responding and how Grange Farm could respond through beyond best practice / aspirational measures:

1. Mandatory requirements i.e. regulations and planning policies in London
2. How residential developments are typically responding in terms of standard practice and minimum performance
3. How Grange Farm could go beyond standard practice to deliver an exemplary scheme

Note that whereas BREEAM can be applied as an environmental sustainability assessment method to non-domestic development and domestic refurbishments, it can't be applied to new build residential. Whilst the 'Home Quality Mark' exists as an assessment method for new build, the uptake is relatively low and generally not adopted by the construction industry. We have therefore excluded reference to HQM.

We have provided more detail regarding some of the highlighted approaches and measures in Sections 2 – X of this document.

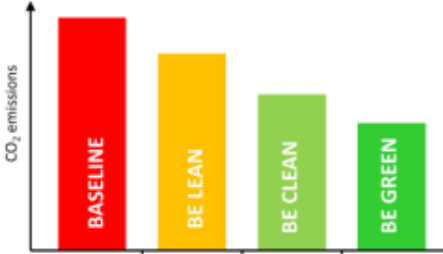
Sustainability Issue	1. Mandatory Requirement	2. Standard Practice / Minimum Performance	3. Grange Farm - Aspirational Targets & Responses
Energy & Carbon	<ul style="list-style-type: none"><li>– Building Regulations Part L compliance</li><li>– CO2 reduction targets against Part L through use of the Energy Hierarchy. Current targets for residential:<ul style="list-style-type: none"><li>a. 10% reduction through 'lean' measures alone;</li><li>b. Min. 35% total reduction (benchmark target = 50%) through lean, clean and green measures combined</li><li>c. 'Net' zero carbon measured against Part L</li></ul></li><li>– Offset payment of £95/tonne/year where NZC not achieved onsite</li><li>– Achieve pass against CIBSE TM59 Overheating assessment (without the use of mechanical cooling)</li><li>– UK buildings to be Net Zero Carbon by 2050</li><li>– Note: Future Homes Standard requires that new homes are not heated via fossil fuels from 2025</li></ul>	<ul style="list-style-type: none"><li>– Compliance</li></ul>	<ul style="list-style-type: none"><li>– Commitment for site to be fossil fuel free (heating &amp; cooling in first instance)</li><li>– Commit to Net Zero Carbon ahead of UK 2050 target</li><li>– Adopt LETI approach to Net Zero Carbon i.e. whole life carbon (refer to section 2.2):<ul style="list-style-type: none"><li>a. Design to meet performance specification targets as far as practicable</li><li>b. Reduce operational energy towards the LETI 'Energy Use Intensity' target</li></ul></li><li>– Adopt RIBA 2030 Climate Challenge target metrics for operational energy (refer to section 2.3)</li><li>– Carbon offsetting through verified scheme</li><li>– Implement demand side response measures to respond to and efficiently manage site-wide energy use, potentially via a microgrid (refer to section 3.3)</li></ul>
Embodied / Whole Life Carbon	<ul style="list-style-type: none"><li>– London Plan benchmarks:<ul style="list-style-type: none"><li>a. Modules A1-A5 (upfront embodied carbon) = &lt;850kgCO2e/m2 GIA</li><li>b. Modules A-C minus B6/7 (whole life carbon) = &lt;1200kgCO2e/m2 GIA</li></ul></li><li>– Note that the proposed Building Regulations Part Z will address embodied carbon but hasn't yet been approved</li></ul>	<ul style="list-style-type: none"><li>– Compliance</li><li>– 'Light touch' circular economy strategy to identify and consider opportunities for reducing material use and end of life carbon.</li></ul>	<ul style="list-style-type: none"><li>– Adopt LETI approach to Net Zero Carbon i.e. whole life carbon:<ul style="list-style-type: none"><li>a. Focus on reducing embodied carbon for the largest uses</li><li>b. Reduce embodied carbon towards the LETI target</li></ul></li><li>– Adopt RIBA 2030 Climate Challenge target metrics for embodied carbon</li><li>– Detailed circular economy strategy to identify and embed opportunities for reducing new material use and end of life carbon</li></ul>
Health & Wellbeing	<ul style="list-style-type: none"><li>– Building Regulations Part O (relates to overheating)</li><li>– Major schemes may require a Health Impact Assessment</li><li>– Policy and regulatory requirements relating to noise, air quality and other environmental indicators that impact human health</li></ul>	<ul style="list-style-type: none"><li>– Compliance</li><li>– Adhoc wellness measures, or</li><li>– H&amp;W certification:<ul style="list-style-type: none"><li>a. WELL – Target Gold rating, or</li><li>b. Fitwel – Target 1 Star rating</li></ul></li></ul>	<ul style="list-style-type: none"><li>– H&amp;W certification:<ul style="list-style-type: none"><li>a. WELL – Target Platinum rating, or</li><li>b. Fitwel – Target 2 or 3 Star rating</li></ul></li><li>– Or develop a bespoke, comprehensive H&amp;S strategy and implementation plan specific to Grange Farm</li></ul>
Water Use	<ul style="list-style-type: none"><li>– Policy - maximum 105 litres/person/day</li><li>– Building Regulations Part G compliance (note that Part G is less onerous to achieve)</li></ul>	<ul style="list-style-type: none"><li>– Policy compliance</li><li>– Typically achieved through efficient bathroom fittings only</li><li>– Where rainwater harvesting is adopted this tends to be used for irrigation only</li></ul>	<ul style="list-style-type: none"><li>– Improve upon policy target e.g. adopt RIBA 2030 Climate Challenge target metrics for potable water use</li><li>– Use of rainwater/greywater recycling in addition to efficient bathroom fittings</li><li>– Use recycled water for both irrigation and WCs</li></ul>

Biodiversity & Urban Greening	<ul style="list-style-type: none"> <li>– Policy - achieve Biodiversity Net Gain</li> <li>– Legislation - 2021 Environment Act introduced a new mandatory requirement for developments that result in loss or degradation of habitat to provide at least a 10% biodiversity net gain. Note: not likely to be legally enforced until late 2023</li> <li>– Policy – Residential development to achieve an Urban Greening Factor (UGF) of 0.4</li> </ul>	<ul style="list-style-type: none"> <li>– Compliance</li> </ul>	<ul style="list-style-type: none"> <li>– Improve upon policy UGF through maximising greening opportunities e.g. vertical planting / living walls</li> <li>– Adopt soft landscaping measures that offer wider sustainability benefits</li> <li>– Consider use of raingardens, swales and potentially attenuation ponds that offer sustainable drainage benefits, as well as habitat creation and urban greening</li> <li>– Consider green roof systems that complement PV</li> </ul>
Transport	<ul style="list-style-type: none"> <li>– Policy relating to minimum cycle parking provision and vehicle parking</li> <li>– Electric vehicle charging to 20% of car parking spaces with provision for another 20% in the future</li> </ul>	<ul style="list-style-type: none"> <li>– Compliance</li> </ul>	<ul style="list-style-type: none"> <li>– Commitment to be a car-free development (with the exception of disabled parking)</li> <li>– Electric charging for other forms of mobility such as e-scooters and e-bikes (within bike stores, garages, and public realm)</li> <li>– ActiveScore certification</li> </ul>
Internet of Things (IoT) e.g. digital infrastructure, smart buildings, etc	<ul style="list-style-type: none"> <li>– None</li> </ul>	<ul style="list-style-type: none"> <li>– Limited with regards to residential schemes – standard provision re. data connectivity</li> <li>– None / Limited provision re. home controls</li> </ul>	<ul style="list-style-type: none"> <li>– Adopt principles or seek formal certification under WiredScore Home to ensure robust and resilient digital infrastructure</li> <li>– Provide home automation and controls, particularly with regards to improving energy efficiency of homes</li> <li>– Potential to adopt principles of SmartScore</li> </ul>
Innovation	<ul style="list-style-type: none"> <li>– None</li> </ul>	<ul style="list-style-type: none"> <li>– Limited/None</li> </ul>	<ul style="list-style-type: none"> <li>– Consider use of technologies to help reduce the site-wide energy use and CO2 emissions, particularly in relation to infrastructure such as street lighting, electronic signage, electric charging points (mobile phones, e-mobility...)</li> </ul>



# 2 Energy and Carbon

## 2.1 Energy Hierarchy



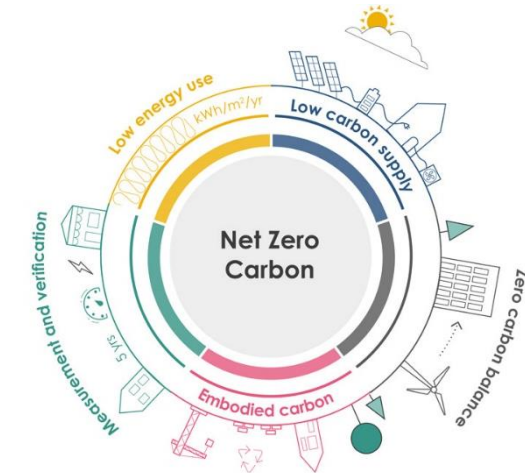
The London Plan Energy Hierarchy follows the ‘Be Lean’, ‘Be Clean’, ‘Be Green’ approach.

A ‘Be Lean’ approach requires prioritising the inclusion of passive and low energy design solutions wherever possible to reduce energy demand, whilst ensuring the design standards for each building element are achieved.

‘Be Clean’ relates to supplying energy efficiently via connection to an offsite local/district heat network (DHN) where available. It should be noted that this step is often skipped due to the unavailability of a nearby network. They can also currently prohibit a site’s fossil fuel-free aspiration due to utilising gas-CHP. However most DHN operators are working on a strategy for decarbonising their networks to enable these to deliver fossil fuel-free heat in the future.

‘Be Green’ is the final step and requires the use of renewable energy technologies to generate clean energy onsite. Most typically this tends to include heat pumps (air and ground source) and PV. Note: Lean measures must be maximised before considering renewable energy.

## 2.2 LETI Net Zero Carbon



The LETI (London Energy Transformation Initiative) definition of Net Zero Carbon (NZC) builds upon the UKGBC NZC Framework and states that all new buildings must operate at net zero carbon by 2030 if we are to meet UK climate change targets. This means designing all new buildings to be NZC from 2025 at the latest, but we should be designing this way now, particularly for strategic scale sites like Grange Farm.

The LETI NZC definition relates to whole life carbon whereby the emissions of a building are considered holistically over its lifespan.

WLC emissions are the sum total of all asset related Greenhouse Gas (GHG) emissions and removals, both operational and embodied, over the life cycle of an asset including its disposal. In reference to Figure 1 Life cycle stages defined by BS EN 15978:2011, taken from LETI Whole Life Carbon Guidance, the WLC of a development includes the following modules:

- A1-A5 upfront embodied carbon;
- B1-B7 embodied carbon in use;
- C1-C4 carbon emissions from products at their end of life;
- D potential benefit from future energy recovery, reuse, and recycling. This module is reported separately as it is outside the project system boundaries.

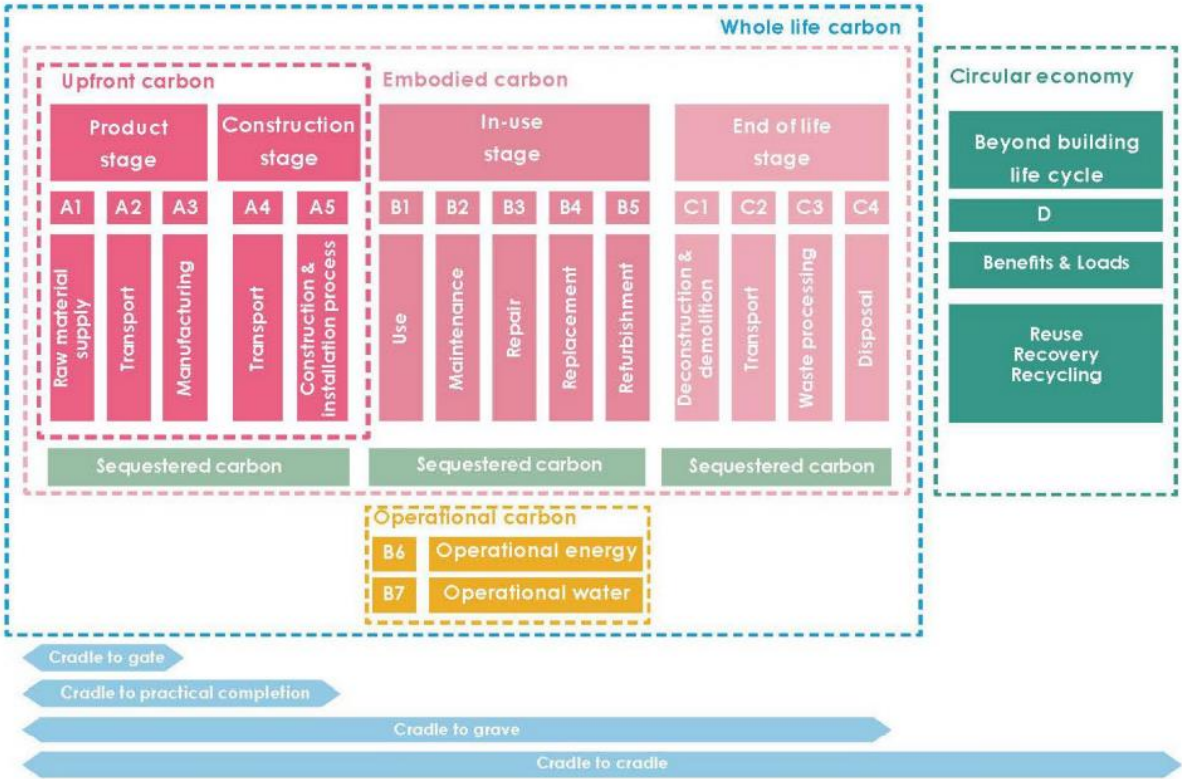


Figure 1 Life cycle stages defined by BS EN 15978:2011, taken from LETI Whole Life Carbon Guidance

To assist developers and designers in delivering NZC buildings LETI have developed a ‘Climate Emergency Design Guide’. The document provides guidance on performance specifications, measures, and targets that can help support in reducing operational energy demand and embodied carbon as far as practicable. A summary of the guidance for medium to large scale housing is provided on the following page.

To reduce the WLC of Grange Farm, the following key strategies can be followed:

1. Define the energy and embodied carbon targets, as well as WLC measurement and verification process at project conception and track throughout. Formal disclosure should be made at post-completion and then annually.
2. Use WLC analysis during design to optimise embodied carbon, reduce operational energy and integrate Circular Economy principles. For example, testing energy reductions, increased envelope specification or calculating carbon payback periods for MEP equipment or renewables.
3. Address upfront embodied carbon emissions (A1-A5) by using minimal material.
4. Consider the carbon cost/ benefit between upfront carbon, operational carbon and life cycle carbon due to replacement cycles.
5. At each replacement cycle, prioritise low carbon materials and Circular Economy principles to reduce WLC emissions.
6. Operational energy loads must be minimised and meet local energy targets; for example LETI EUI targets. A future decarbonised grid depends on reducing overall energy requirements. A further effect of grid decarbonisation is to make embodied carbon an even larger proportion of WLC.
7. Utilise Circular Economy principles at the beginning and end of the building and component life cycle. This includes retrofit, re-use of materials, recycled materials and design for future adaptability.
8. Document end of life scenarios and quantify the potential future carbon benefits.

# Medium and large scale housing

## Operational energy

Implement the following indicative design measures:

### Fabric U-values (W/m².K)

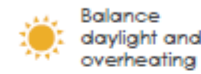
Walls	0.13 - 0.15
Floor	0.08 - 0.10
Roof	0.10 - 0.12
Exposed ceilings/floors	0.13 - 0.18
Windows	1.0 (triple glazing)
Doors	1.00

### Efficiency measures

Air tightness	<1 (m³/h.m²@50Pa)
Thermal bridging	0.04 (y-value)
G-value of glass	0.6 - 0.5
MVHR	90% (efficiency) ≤2m (duct length from unit to external wall)

### Window areas guide (% of wall area)

North	10-20%
East	10-15%
South	20-25%
West	10-15%



Balance daylight and overheating

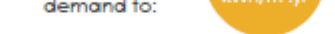
Include external shading

Include operable windows and cross ventilation

Reduce energy consumption to:



Reduce space heating demand to:



Maximise renewables so that 70% of the roof is covered

Form factor of <0.8 - 1.5



## Heating and hot water

Implement the following measures:



### Fuel

Ensure heating and hot water generation is fossil fuel free



### Heat

The average carbon content of heat supplied (gCO₂/kWh.yr) should be reported in-use



### Heating

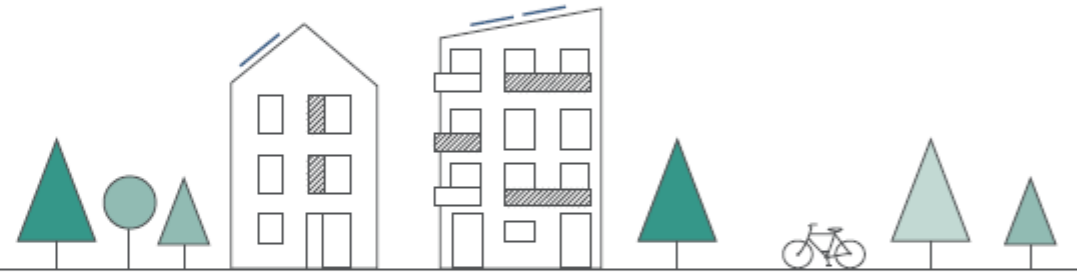
Maximum 10 W/m² peak heat loss (including ventilation)



### Hot water

Maximum dead leg of 1 litre for hot water pipework

'Green' Euro Water Label should be used for hot water outlets (e.g.: certified 6 L/min shower head – not using flow restrictors).



## Demand response

Implement the following measures to smooth energy demand and consumption:



### Peak reduction

Reduce heating and hot water peak energy demand



### Active demand response measures

Install heating set point control and thermal storage



### Electricity generation and storage

Consider battery storage



### Electric vehicle (EV) charging

Electric vehicle turn down



### Behaviour change

Incentives to reduce power consumption and peak grid constraints.

## Embodied carbon

Focus on reducing embodied carbon for the largest uses:

Products/materials (A1-A3)

Transport (A4)

Construction (A5)

Maintenance and replacements (B1-B5)

End of life disposal (C1-C4)



1%

25%

2%

8%

64%

Average split of embodied carbon per building element:

46% - Superstructure

21% - Substructure

16% - Internal finishes

13% - Façade

4% - MEP

Reduce embodied carbon by 40% or to:



Area in GIA

LONDON  
ENERGY  
TRANSFORMATION  
INITIATIVE

## Data disclosure

Meter and disclose energy consumption as follows:



### Metering

1. Submeter renewables for energy generation
2. Submeter electric vehicle charging
3. Submeter heating fuel (e.g. heat pump consumption)
4. Continuously monitor with a smart meter
5. Consider monitoring internal temperatures
6. For multiple properties include a data logger alongside the smart meter to make data sharing possible.



### Disclosure

1. Collect annual building energy consumption and generation
2. Aggregate average operational reporting e.g. by post code for anonymity or upstream meters from part or whole of apartment block
3. Collect water consumption meter readings
4. Upload five years of data to GLA and/or CarbonBuzz online platform
5. Consider uploading to Low Energy Building Database.

2.3 RIBA 2030 Climate Challenge

The 2030 Climate Challenge sets a series of targets for practices to adopt to reduce operational energy, embodied carbon and potable water. If all RIBA Chartered Practices meet the RIBA 2030 Climate Challenge targets, they will play their part in addressing this global crisis.

Targets that apply to domestic schemes (taken from Version 2 2021) are shown below:

RIBA 2030 Climate Challenge target metrics for domestic / residential				
RIBA Sustainable Outcome Metrics	Business as usual (new build, compliance approach)	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m <sup>2</sup> /y	120 kWh/m <sup>2</sup> /y	< 60 kWh/m <sup>2</sup> /y	< 35 kWh/m <sup>2</sup> /y	Targets based on GIA. Figures include regulated & unregulated energy consumption irrespective of source (grid/renewables).  BAU based on median all electric across housing typologies in CIBSE benchmarking tool.  1. Use a 'Fabric First' approach 2. Minimise energy demand. Use efficient services and low carbon heat 3. Maximise onsite renewables
Embodied Carbon kgCO <sub>2</sub> e/m <sup>2</sup>	1200 kgCO <sub>2</sub> e/m <sup>2</sup>	< 800 kgCO <sub>2</sub> e/m <sup>2</sup>	< 625 kgCO <sub>2</sub> e/m <sup>2</sup>	Use RICS Whole Life Carbon (modules A1-A5, B1-B5, C1-C4 incl sequestration). Analysis should include minimum of 95% of cost, include substructure, superstructure, finishes, fixed FF&E, building services and associated refrigerant leakage.  1. Whole Life Carbon Analysis 2. Use circular economy strategies 3. Minimise offsetting & use as last resort. Use accredited verifiable schemes (see checklist).  BAU aligned with LETI band E; 2025 target aligned with LETI band C and 2030 target aligned with LETI band B.
Potable Water Use Litres/person/day	125 l/p/day (Building Regulations England and Wales)	< 95 l/p/day	< 75 l/p/day	CIBSE Guide G.

For reference purposes current (2021) Good Practice for new build projects in-use now are as follows:

**Non-Domestic (new build office):**  
Operational Energy 90 kWh/m<sup>2</sup>/y (GIA) and/or DEC C(65) and/or NABERS Base build 5; Embodied Carbon LETI Band D 1180 kgCO<sub>2</sub>e/m<sup>2</sup>; Potable Water Use 16 l/p/day

**Non-Domestic (schools):**  
Operational Energy 75 kWh/m<sup>2</sup>/y (GIA); Embodied Carbon LETI Band D 870 kgCO<sub>2</sub>e/m<sup>2</sup>; Potable Water Use 3m<sup>3</sup>/pupil/yr

**Domestic/Residential:**  
Operational Energy 60 kWh/m<sup>2</sup>/y (GIA) no gas boilers; Embodied Carbon LETI Band D 1000 kgCO<sub>2</sub>e/m<sup>2</sup>; Potable Water Use 110 l/p/day

RIBA 2030 Climate Challenge target metrics for all buildings		
Best Practice Health Metrics		References
Overheating	25-28 °C maximum for 1% of occupied hours	CIBSE TM52, CIBSE TM59
Daylighting	> 2% av. daylight factor, 0.4 uniformity	CIBSE LG10
CO <sub>2</sub> levels	< 900 ppm	CIBSE TM40
Total VOCs	< 0.3 mg/m <sup>3</sup>	Approved Document F
Formaldehyde	< 0.1 mg/m <sup>3</sup>	BREEAM

2.4 Fossil Fuel-Free

In line with the Future Homes Standard 2025 and the trajectory towards NZC buildings, Grange Farm should aim to be fossil fuel free. Options could include Air Source Heat Pumps, Ground Source Heat Pumps, and PV. It is likely that a hybrid strategy will be most appropriate. Note that there is the potential to include supporting electric boilers to provide resilience, should there be concerns in this area.

Given the extent of roof space the site has the potential to generate a meaningful contribution of renewable energy from PV. Figure 2 Potential locations for PV on the development on the panels being mounted on A-frames to enable orientation to be optimised. Consideration needs to be given to overshadowing by neighbouring buildings and competition from other roof uses such as lift overruns, MEP plant, amenity space, etc. As a rule of thumb it could be assumed that c25% of the total roof area could be dedicated to PV. Note: the percentage area could be lower if roof space is shared with ASHPs.

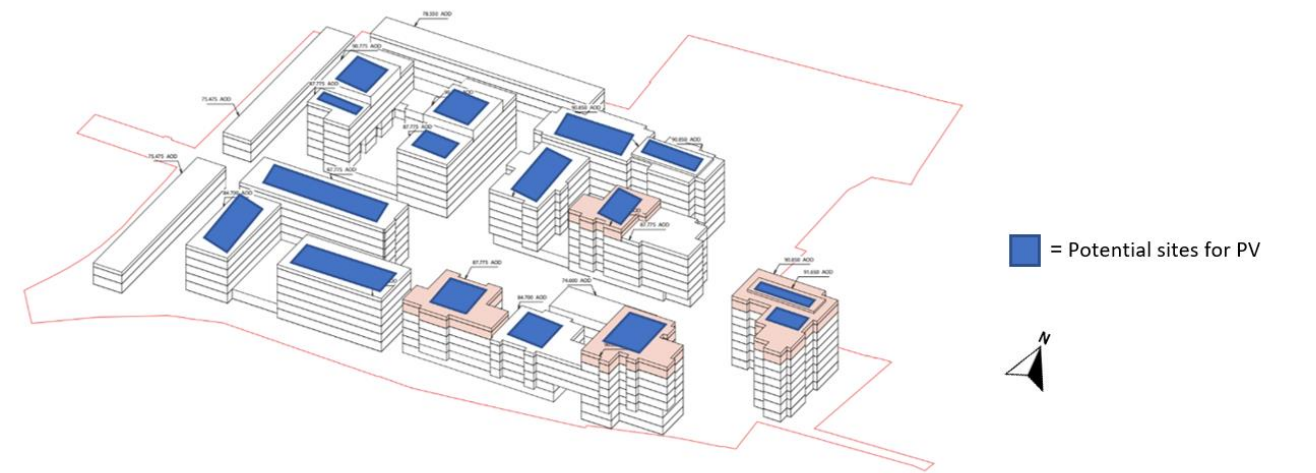


Figure 2 Potential locations for PV on the development



### 3 Supporting Infrastructure

#### 3.1 Energy Centre

We note the current proposal for a single energy centre. Consideration should be given for multiple local energy centres that serve phases/plots or even single buildings. This strategy can better suit all-electric heating strategies and can also help reduce heat losses from the hot water distribution pipework. It should also be considered that ASHPs should be close to the heating plant they serve.

#### 3.2 Digital Infrastructure

The development will need to provide infrastructure to ensure strong internet connection/download speed. Key principles of the WiredScore Home accreditation should be applied to the development, implementing the highest levels of digital infrastructure into the development from the earliest possible design stage.

WiredScore Home accreditation aims to ensure high speed, resilient connectivity for landlord facilities management and residents. A WiredScore Home building should provide ample space for telecommunications equipment and distribution. Residents may have a choice of quality broadband providers with ease of connection ensured. Free WiFi might be provided in communal areas, and support with connectivity for residents would be available from the landlord. Exactly what credits are targeted will depend on the feasibility of each criteria in relation to the building form, as well as the level of accreditation required

A second opportunity for improving digital infrastructure is through creating smart buildings. A smart building converges various building-wide systems—such as HVAC, lighting, alarms, and security—into a single IT managed network infrastructure. It often uses foundational technology such as Power over Ethernet (PoE) to accomplish this convergence. This would enable easy control of lighting and heating, thus reducing energy consumption. This provides sustainability benefits in relation to the environment and the cost of living.

#### 3.3 Microgrid

Energy efficiency could also be maximised on site through introduction of a microgrid. This is a small local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously. The microgrid powers localised electrical loads of a community through local electricity sources. An effective Microgrid might connect to:

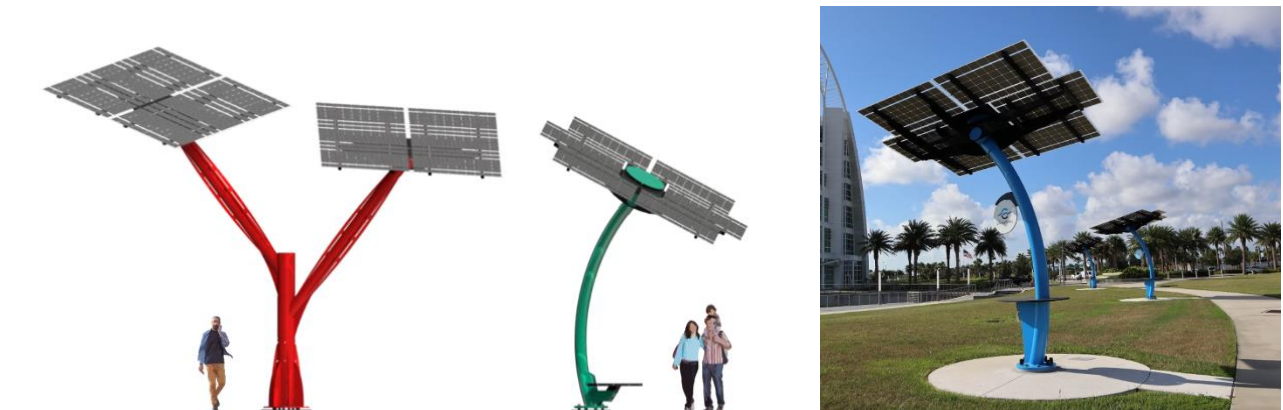
- Utility provider electricity supply
- Photovoltaics
- Battery storage
- Electric vehicle charging
- Generators

A microgrid gives the site full control and flexibility around peak energy demand and aids in the achievement of the additional energy hierarchy step of 'Be Seen'.

#### 3.4 Innovation

As an example:

Solar Trees - <https://spotlightsolar.com/products>



'Pavegen' power-generating walkways - <https://www.pavegen.com/>



