



Heritage

- 3.47 A Heritage Desk Based Assessment has been prepared by Orion Heritage (October 2015). This assessment considers the potential effects on the historic environment of the proposed development of land at Hook Lane, Pagham and concludes that archaeology is not a development/design constraint.
- 3.48 The report notes that on the basis of the available evidence, the site has low potential for remains of all archaeological periods. The assessment considers that the presence of archaeological remains of local significance, (prehistoric and Roman in particular), cannot be ruled out and as such it is anticipated that an archaeological evaluation will be required as a future planning application is progressed.
- 3.49 The assessment also concludes that the proposed development is considered to have no impacts on designated heritage assets in the vicinity of the study site due to a lack of intervisibility with identified assets.



The site has low potential for remains of all archaeological periods

Noise

- 3.50 A Noise Assessment has been prepared by Brookbanks Consulting Ltd (December 2016) which updates a previous assessment undertaken by RPS. Following detailed measurements undertaken within the proposed development site the assessment concludes the following:
- 3.51 Traffic noise from Hook Lane, Pagham Road and Sefter Road is the most significant noise source. The assessment illustrates that the site lies mostly within acceptable limits i.e within 55Db for daytime noise levels and 30Db for internal night time noise levels. The assessment concludes therefore that the local noise environment would not preclude the development of the site.
- 3.52 Internal noise levels inside the proposed dwellings can be provided within acceptable limits through the provision of passive ventilation systems and standard double glazing for those residential properties fronting Hook Lane, Pagham Road and Sefter Road. The internal layout of properties is also to consider the location of lounge and bedroom areas to avoid sight lines towards Hook Lane, Pagham Road and Sefter Road. Finally the site layout is to consider the orientation of residential buildings to reduce sight lines onto Hook Lane, Pagham Road and Sefter Road.

- 3.53 The Assessment demonstrates that the Proposed Development will not be significantly affected by the noise levels in the immediate vicinity. It is also anticipated from this that noise impacts arising out of the proposed development are negligible. The maximum internal noise level with the inclusion of window glazing is 22.7 dB during the daytime and 17.6 Db at night which achieves the required standards as set by BS 8233.

Site Boundary

2016 Noise Levels

2035 Noise Levels



NOISE PLAN

CONTEXT EVALUATION

Environmental Considerations

3.54 The Site has very few physical constraints to development of the type proposed. Those that do exert an influence are as follows:

Physical and Environmental

- **Drainage** - Whilst the site does not fall within Floodzone 1, both photographic evidence and anecdotal evidence provided during consultation indicate that due to the Site's low lying topography it often experiences periods of excessive waterlogging. As a result the development is to include a Sustainable Drainage Network designed to regulate surface water runoff from the site to an acceptable rate and in doing so to ensure that areas which are currently subject to waterlogging are actively drained.
- **Noise** - Internal noise levels inside the proposed dwellings can be provided within acceptable limits through the provision of passive ventilation systems and standard double glazing for those residential properties fronting Hook Lane, Pagham Road and Seftor Road. The internal layout of properties is also to consider the location of lounge and bedroom areas to avoid sight lines towards Hook Lane, Pagham Road and Seftor Road. Finally the site layout is to consider the orientation of residential buildings to reduce sight lines onto Hook Lane, Pagham Road and Seftor Road.
- **Ecology** - The proposals should include habitat creation to the north of the site for reptiles and West European Hedgehog. This should feature log piles, hibernaculum and patches of brush. In addition residential garden fences should include small holes at their base in order to keep connectivity and enable free movement for these species. A 20m buffer from adjacent road carriageways along the northern and western boundaries should be provided to maintain dark corridors for bats.

- The enhancement of the existing ditch and incorporation of additional SuDS features will increase the potential for water voles. The network of hedgerows within the application site provides connectivity between habitats both within the application site and within the wider landscape with a range of conservation values from moderate to high. Much of the hedgerow is to be retained and buffered as part of the proposals with only small sections removed for pedestrian and vehicular access. Hedgerow improvement will include additional planting and buffering ensuring that the small amount of hedgerow loss is compensated for. In addition mature trees will be protected from damage and from soil compaction during works by erecting and maintaining fenced Root Protection Areas (RPAs).
- **Heritage** - It is anticipated that an archaeological evaluation will be required as a future planning application is progressed.

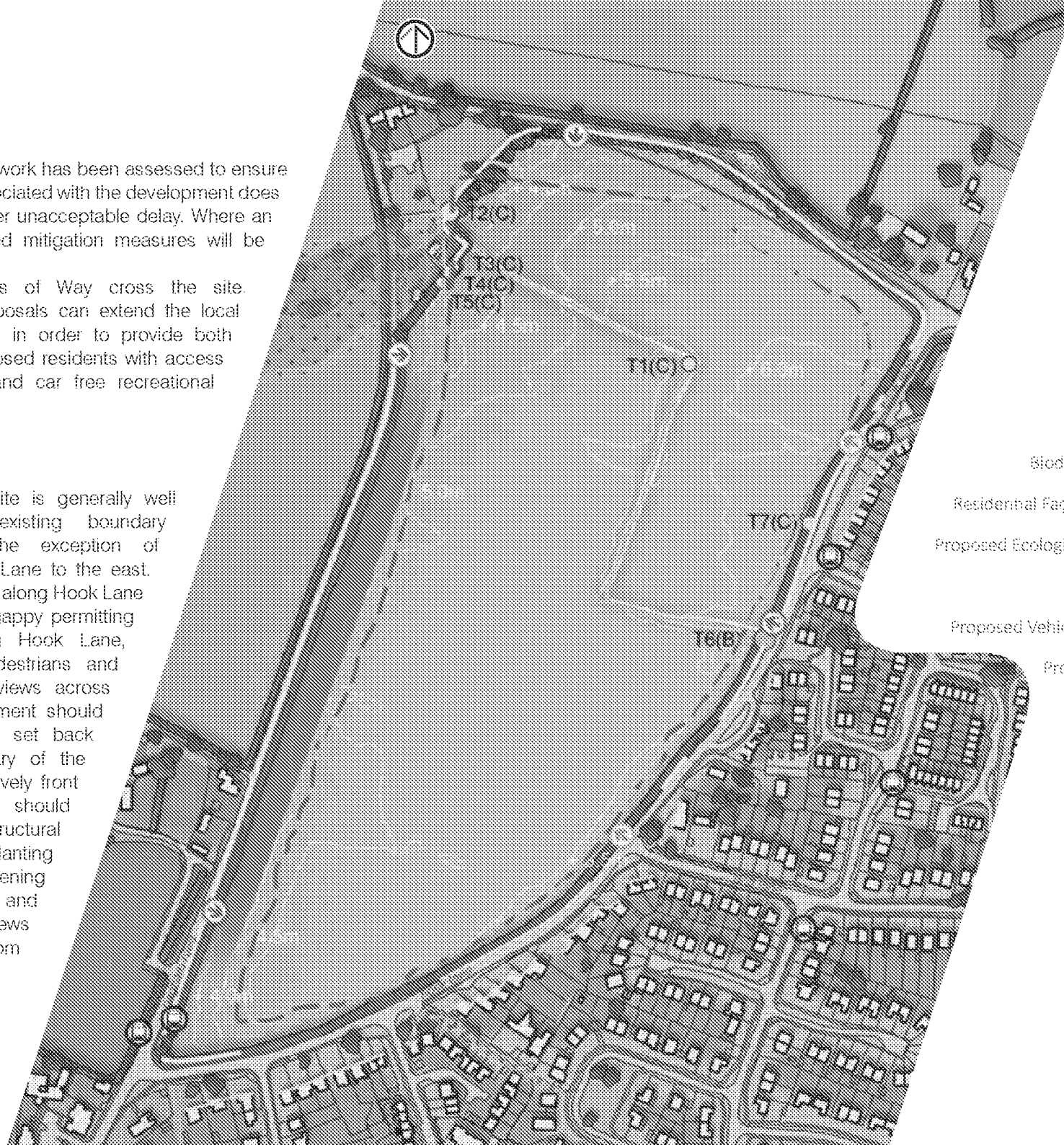
Access

- Vehicular access may be obtained from both Pagham Road and Hook Lane. In both cases small sections of hedgerow will need to be removed to facilitate access.
- Pagham Road – provides a key arterial link between Pagham and Chichester and the wider road network to the north. An access into the development from Pagham Road must prevent this route from being obstructed.
- Hook Lane – Whilst the speed limit along Hook Lane is 30mph survey results indicate that this is often exceeded. Development should explore opportunities for traffic calming along Hook Lane to control speeds.

- The local road network has been assessed to ensure that the traffic associated with the development does not result in greater unacceptable delay. Where an impact is identified mitigation measures will be provided.
- No Public Rights of Way cross the site. Development proposals can extend the local network of routes in order to provide both existing and proposed residents with access to open space and car free recreational routes.

Social

- Visibility of the site is generally well contained by existing boundary planting, with the exception of views from Hook Lane to the east. Boundary planting along Hook Lane is low and often gappy permitting residents fronting Hook Lane, and passing pedestrians and motorists, open views across the site. Development should ensure that it is set back from the boundary of the Site, it should actively front Hook Lane and should include new structural tree and hedge planting to increase screening in order to soften and partially screen views of development from the east.



- Site Boundary
- Public Rights of Way
- Flood Zone 3
- Flood Zone 2
- Biodiversity Opportunity Area
- Residential Façades with Views into Site
- Proposed Ecological Corridor (20m Offset)
- Existing Site Access
- Proposed Vehicular & Pedestrian Access
- Proposed Pedestrian Access
- Existing Bus Stops
- Category B Tree
- Category C Tree
- Category C Hedgerow
- 2016 Noise Levels
- 2035 Noise Levels

DESIGN

Design Objectives

- 4.1 The following objectives are a direct result of the evaluation of baseline data, the site's context, constraints and opportunities and as a result of consultation responses.

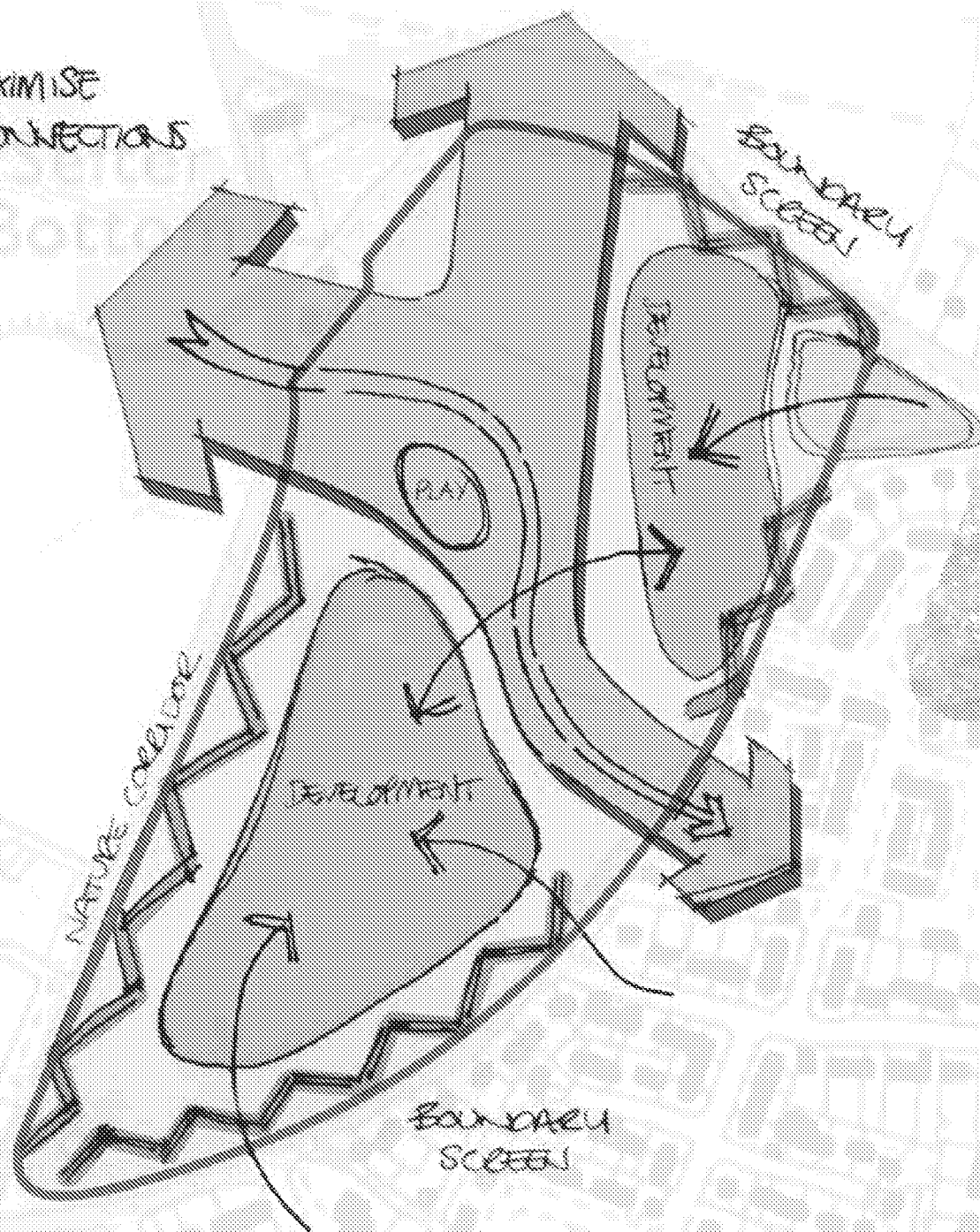
By Design:

- Ensure development provides a soft, green transition from the urban edge to wider countryside.
- Ensure the development provides a selection of high quality housing in a mix of tenures, sizes and styles to meet market demand, 30% will comprise affordable housing.
- To promote the highest quality sustainable design, creating a 'place' which is both safe and attractive and which establishes a desirable setting, enhancing quality of life, health and social well-being, and provides adaptable homes for the elderly.
- To make the most efficient and effective use of land which is well related to its surroundings and which does not compromise the amenity of existing residents or the integrity of nearby sites of ecological importance such as Pagham Harbour.
- To respond to the architectural distinctiveness associated with the local vernacular of Pagham and its environs.
- To actively drain waterlogged parts of the site and to attenuate surface water runoff from the site to an acceptable level.

Through Access:

- The development will provide safe access arrangement which conforms to the relevant highway design standards.
- The development will provide improvements to the local highway infrastructure in terms of additional footway provision and improvements to local bus stops.
- Hook Lane currently experiences speeds well in excess of the 30mph speed limit. New tabled road junctions are to be considered in order to help define access into the proposed development, integrate development into the adjacent road network and importantly to slow traffic along Hook Lane.
- Promote access to and use of existing bus services. Proposed footways linking the development to existing bus stops on Hook Lane are to be promoted. A new bus lay by and stop is to be created on the east side of Pagham Road in order to improve accessibility to this service.
- New on site Public Rights of Way are to be created in order to provide both existing and proposed new residents with easy access to accessible green space.
- Adopt shared surface design strategies to enable all road users to access the development safely, whilst creating an attractive, pedestrian friendly environment.
- Ensure access for all is considered at every level of design.
- Ensure that car parking is provided in line with Arun District Council's SPD relating to parking standards (October 2000).

MAXIMISE
GREEN CONNECTIONS



Creating a 'place' which is both safe and attractive and which establishes a desirable setting and enhances quality of life

DESIGN

Design Evolution

- 4.2 Having gained a good understanding of the existing site and place, through the various environmental and technical studies, it is possible to formulate an appropriate masterplan response.
- 4.3 The Masterplan process seeks to achieve an optimum solution that minimises potential adverse effects on the environment whilst delivering a responsive layout, which maximises environmental, social and community benefits. The development proposals have evolved over time through a series of iterations. This process seeks to minimise any adverse environmental impacts whilst maximising economic, social and sustainability benefits. The following plans illustrate the schemes evolution and development:



Original Concept Plan

An initial concept plan distributed development blocks around the site in response to existing site conditions, access points and ecological corridors.

A driving factor to this initial proposal, was the incorporation of extensive ecological networks, integrating the sites wider rural context with the existing urban edge of Pagham. The existing water way is reworked to have a natural meander, with wide riparian banks running parallel.

Similarly, the tree count is extensively expanded, with large swathes of trees introduced around the site's boundaries offering both shelter and screening. Street trees were introduced to line roadways and positioned so as to guide residents through the neighbourhood.



Secondary Concept Plan

Following further technical work completed by WSP regarding site drainage the site's on site Sustainable Drainage Network was expanded in order to increase the site's attenuation capacity and maximise its scope to actively drain areas that experience water logging. The central stream, running through the site, meanders its way west and links with adjacent swales and attenuation ponds. During dry periods, these areas will function as parkland and amenity space, for the residents to use and enjoy whilst enabling the inclusion of some permanent water bodies for habitat and visual amenity.



Third Concept Plan

Breaking down the blocks, into individual streets, spaces and indicative properties, this plan developed the rationale with regards to the interaction of private properties, care home, D1 Use and the public realm, ensuring development actively fronts open space and avoids blank gables and dead ends. This iteration also sought to diversify open spaces and habitat provision, ensuring that the site's landscape is an integral part of the development.

Bringing the Design up to the Present Day

Further development following public consultation saw the increase in width of green space along Hook Lane, along with an increase in tree planting for screening. The proposed D1 Use was moved south next to the proposed care home and the northern most vehicular access onto Hook Lane was moved further north so that development traffic would be routed past fewer existing residential properties fronting Hook Lane.

In addition the Care Home and its communal gardens have been reorientated for the privacy of residents fronting Hook Lane.

ILLUSTRATIVE AERIAL OPTION A

- (A) Hook Lane Vehicular Access
- (B) Hook Lane Pedestrian Access
- (C) Pagham Road Vehicular Access
- (D) Elderly Care Home/
Specialist Accommodation
Health Centre/Day Nursery
(D1 Use)
- (E) High Quality Housing
- (F) Primary School
- (H) 'Hook Meadow'

- (I) Min. 20m Green Buffer with reinforced planting
and linear Swale/Attenuation Basin
- (J) Formal Equipped Play Space
- (K) 'Downs View'
- (L) Re-routed Existing Watercourse
- (M) 'Sefton Meadow'
- (N) Min. 20m Green Buffer from carriageway with reinforced planting

FIGURE 2: ILLUSTRATIVE MASTERPLAN OPTION A

ILLUSTRATIVE AERIAL OPTION B

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- A** Hook Lane Vehicular Access
 - B** Hook Lane Pedestrian Access
 - C** Pagham Road Vehicular Access
 - D** Care Home/Specialist Accommodation for the Elderly
 - E** Health Centre/Day Nursery (D1 Use)
 - F** High Quality Housing
 - G** 'Hook Meadow'
 - H** Min. 20m Green Buffer with reinforced planting and linear Swale/Attenuation Basin
 - I** Formal Equipped Play Space
 - J** 'Downs View'
 - K** Re-routed Existing Watercourse
 - L** 'Sefton Meadow'
 - M** Min. 20m Green Buffer from carriageway with reinforced planting

FIGURE 3: ILLUSTRATIVE MASTERPLAN OPTION B

Design Parameters

- 4.4 The development proposals are illustrated by the Development Framework Plan (Figure 1) which identifies the amount of built development, and the distribution of land uses.
- 4.5 In accordance with DCLG publication "Guidance on Local Information Requirements and Validation" (2010) Two Illustrative Masterplans (Figures 1 & 2), have also been prepared, the purpose of which is to demonstrate the general design principles that could be adopted for the new residential development, and how the development could be laid out within the parameters illustrated on the Development Framework.
- 4.6 The Illustrative Masterplan Options indicate the principles of urban structure and urban grain, i.e. the framework and the layout of streets and routes, the location, arrangement and design of the development blocks, plot arrangement, and green infrastructure. These plans provide an approximate location of buildings across the site, and how the built form could relate to the streets/ public realm.
- 4.7 Illustrative Masterplan A depicts how a two form entry primary school may be delivered within the proposals whilst illustrative Masterplan Option B depicts how the site could be developed without a school site being included.

Quantum of Development

- 4.8 The Development Framework illustrates the quantum of development that may be delivered on site (17.2ha total site area).
- 4.9 Should the primary school or proposed D1 Use be constructed residential development will equate to circa 216 units. If demand for these facilities results in their provision elsewhere within Pagham the quantum of development would increase up to 300 units in total.
- 4.10 In summary the amount of development proposed on the Site is up to 300 dwellings, with a mix of dwelling types from 2-5 bedroom houses, with up to 30% being affordable. This mix is further complemented by a care home / specialist housing for the elderly, catering for up to 80 beds, on 0.55ha.



FIGURE 1: DEVELOPMENT FRAMEWORK

Mix of Uses

- 4.11 Alongside new housing, the proposed development safeguards land for the provision of a new two form entry primary school on 2.4ha, and a new D1 Use to provide a children's day nursery and / or health centre (subject to demand) on 0.4ha. The maximum plot and building sizes for development of these uses is indicated below:

Land Use	Site Area	Number / Footprint	Height
Residential units	depending upon delivery of the school and D1 Use - between 7.2 and 10ha	Between 216 – 300	Houses up to 2 storeys in height (9.5m to ridge)
two form entry primary school	2.4Ha site	footprint not to exceed 2400 sq.m	up to 2 storeys in height (10m to ridge)
D1 use (health centre and / or children's day nursery)	0.4ha site	footprint not to exceed 1600 sq.m	up to 2 storeys in height (10m to ridge)
care home / specialist housing for the elderly (80 beds)	0.55ha site	footprint not to exceed 3200 sq.m	up to 2 storeys in height (9.5m to ridge)
Green infrastructure (including road infrastructure with single sided development - excluding Semi Private Drives)	6.65ha	n/a	n/a

- 4.12 At this stage, the final mix of market and affordable homes has not been fixed. The final mix will be subject of further discussion with the Local Authority and will therefore be subject of a reserved matters application. The form and layout of the development will reflect the principles established in this Design and Access Statement.

- 4.13 As a working assumption to assist the preparation of the Illustrative Masterplans and Development Framework Plan, the following mix of dwelling types has been adopted:

Dwelling Type	Average Floor Area	Average Number
2 bed	80 sq.m	86 to 120 (40%)
3 bed	96 sq.m	66 to 90 (30%)
4 bed	125 sq.m	54 to 75 (25%)
5 bed	167 sq.m	11 to 16 (6%)
Total	n/a	216 to 300 (100%)

- 4.14 The development will comprise a variety of dwelling types from detached and semi-detached housing to small groups of terrace accommodation. The main objective is for the development to offer a range of accommodation with a choice of houses to provide for single occupancy and family accommodation. This will foster a wide demographic and a mixed community.
- 4.15 Housing will be designed to maintain good permeability ensuring that all residents have easy access to Hook Lane, the internal Spine Road, the public right of way network and to accessible public open space. The land will be used efficiently in accordance with Government guidance.

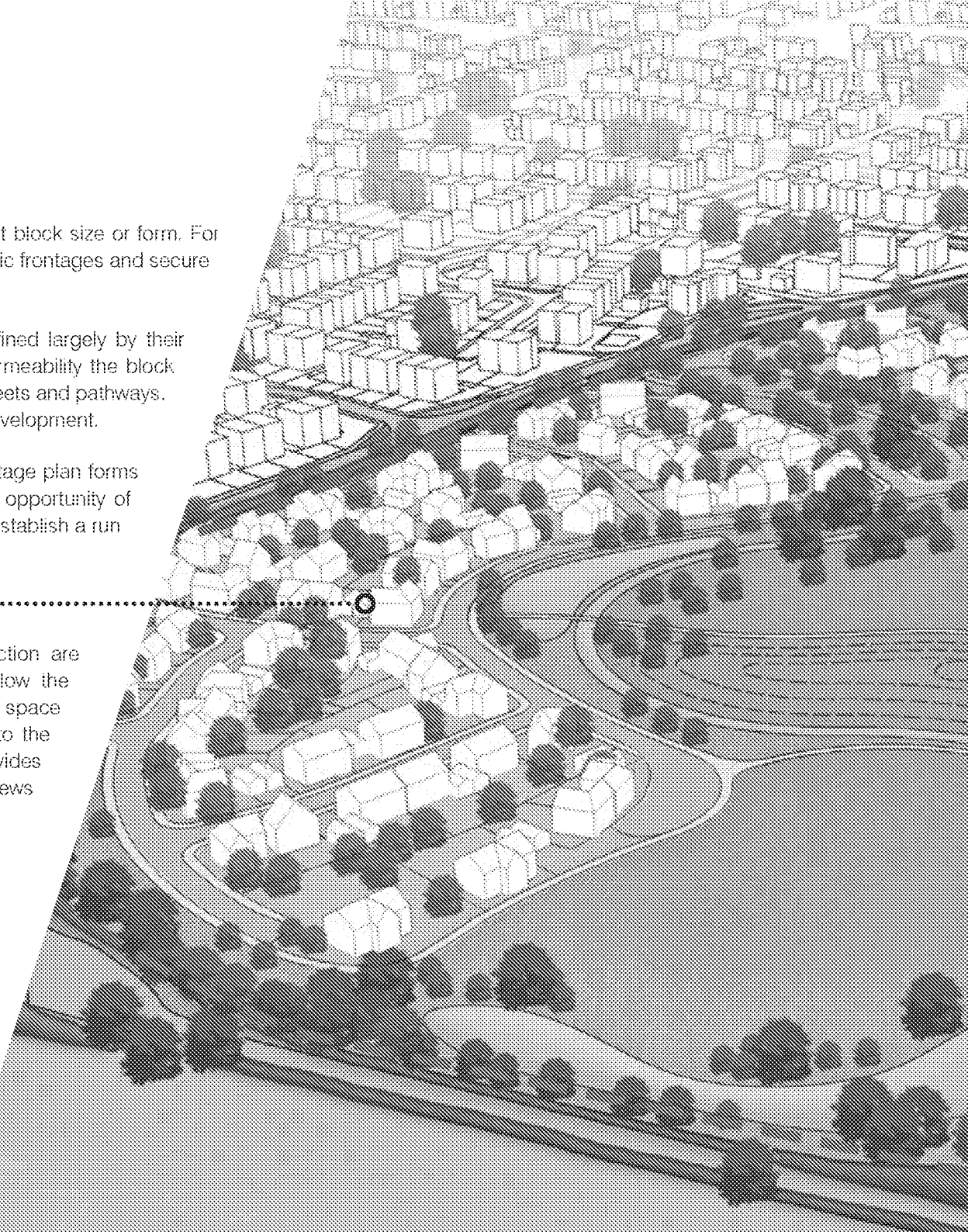


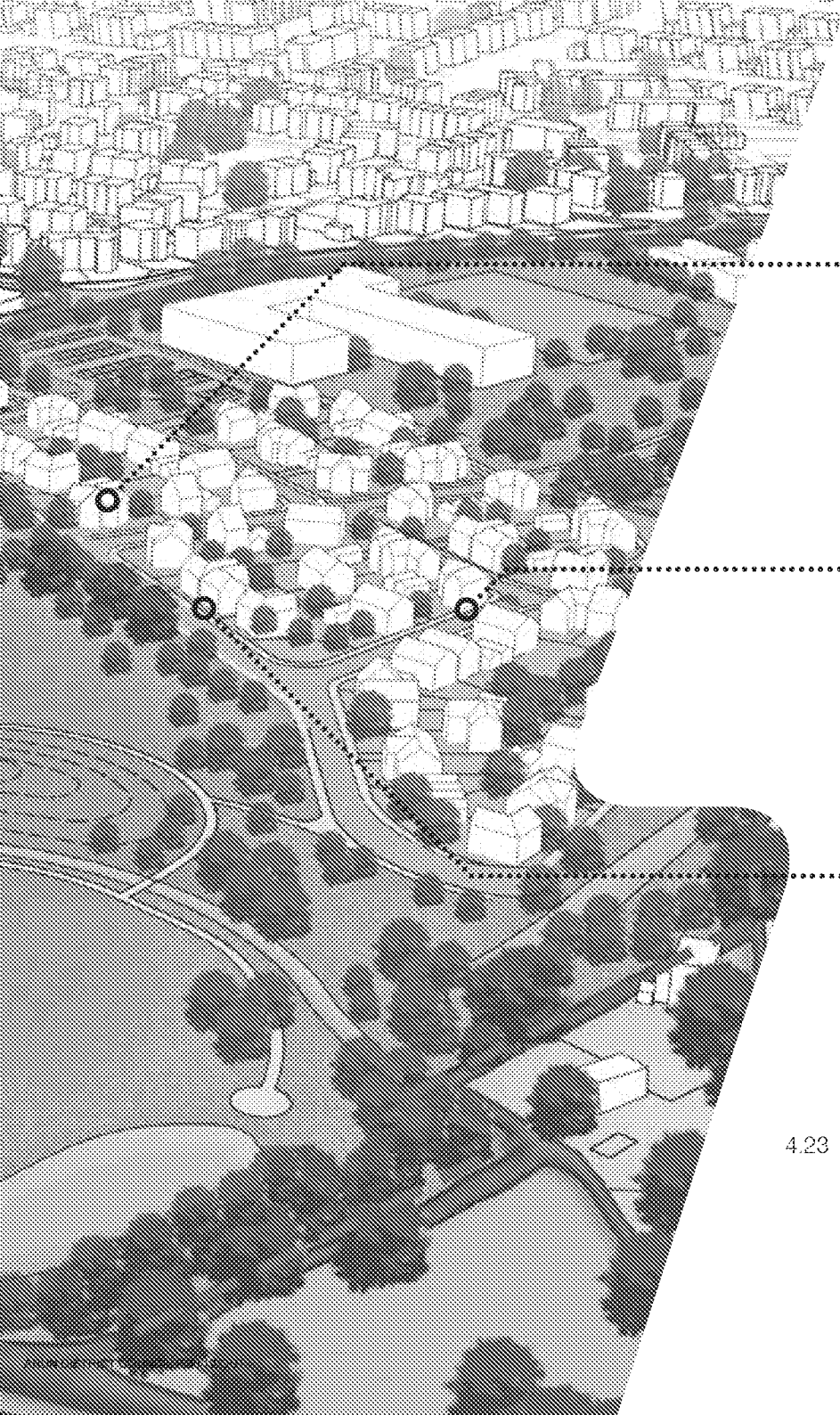
Structure & Layout

- 4.16 There are no definitive best practice dimensions for development block size or form. For the most part development blocks will be arranged to ensure public frontages and secure private rear gardens.
- 4.17 The arrangement of buildings within development blocks is defined largely by their plan form, height, and scale. To maintain good legibility and permeability the block arrangement will be subdivided by a choice of interconnecting streets and pathways. This will create a human scale and finer pedestrian grain to the development.
- 4.18 Best practice advocates that a mix of both wide and narrow frontage plan forms should be used. Wide frontage buildings will allow for a greater opportunity of variation along the street, whilst a narrow frontage approach will establish a run of linked dwellings and continuous frontages.

Corner Plot Arrangements

- 4.19 How streets interconnect or development blocks change direction are critical components of 'the place'. Best practice examples follow the principle of a continuous built frontage and/or focal building or space 'wrapping' around a corner. This provides a positive definition to the street and avoids 'weak' ill-defined edges. In addition, this provides opportunities for landmark buildings that terminate or help frame views along the street.





Landmark Features

- 4.20 Landmark features or points of focus allow users to orientate themselves, creating an easily navigable and distinctive environment. Appropriate features or points of focus include public squares, pocket parks, prominent buildings, street trees, public art, and smaller items such as street furniture. The use of landmarks such as a building projecting onto the street, or a gable end facing onto the street in an otherwise straight line of buildings will provide identity within the layout.

Views and Vistas

- 4.21 The detailed block and street layout will be arranged so that it comprises a series of attractive views and vistas. This will add a certain character and charm to the development, and respond to traditional place making principles. Furthermore views and vistas help to reinforce and create a legible environment which is easy to navigate. The detailed design will also include subtle variations in the building line, in terms of scale, height, and setback of buildings from the footway. This will be supplemented by a quality materials and landscape treatment which will produce an attractive street.

Street Frontage

- 4.22 To define the boundaries between private and public spaces, all dwellings will have some form of private frontage. These will vary in depth to avoid a uniform approach development and provide visual interest along each street. Opportunities for deeper front gardens should be explored where practicable in order to maximise green space fronting public highways and to increase the space available for tree planting along streets. It is important that frontages are not excessive and that buildings still relate and interact with the public realm.
- 4.23 Frontages will be defined by the use of consistent boundary treatments, which reflect the local vernacular and will be kept clear by the provision of bin storage to the side or rear of plots.

Design & Safety

- 4.24 A desirable place to live, work and play, which is safe and secure, is fundamental. This will be achieved by the way the development is laid out and by the street, block and plot design. Buildings will be located to actively face streets and public areas in order to promote 24 hour surveillance, and to encourage safer places. Public areas such as the streets and play area will be designed so that they are safe, easily accessible and attractive to use.
- 4.25 All users will be considered as part of an inclusive design approach. It is important that there is good surveillance of public spaces by a number of properties and buildings, and that barriers, blank walls and 'dead ends' are avoided. Locating windows and doors on corners, or gable ends is a key principle, and occurs within the local context. Across the whole development careful attention will be paid to designing out crime through the layout, and promoting privacy and security.
- 4.26 This will be achieved by:
- High quality active streets;
 - The position of buildings to the front of the plot, avoiding blank gables and spaces between the back and / or sides of properties;
 - The use of street lighting where it is needed to illuminate key routes and spaces, and;
 - Well located windows and doors that survey public spaces.

Street Lighting

- 4.27 The National List of Local Requirements requires:
- 4.28 *"proposals involving the provision of publicly accessible or visible developments, in the vicinity of residential property, a listed building or a conservation area, or open countryside, where external lighting would be provided or made necessary by the development, should be required to be accompanied by details of external lighting and the proposed hours when the lighting would be switched on. These details shall include a layout plan with beam orientation and spillage and a schedule of the equipment in the design."*
- 4.29 Given that the scheme is for an outline application and as such the detailed layout is indicative with full details of lighting equipment not yet known we would anticipate that full details are to be provided via subsequent reserved matters applications.
- 4.30 Street Lighting will however be guided by the following principles:
- The development will include a range of measures which would control the use of artificial light without detriment to the lighting task;

- The need for lighting would be carefully assessed and all lighting would be designed in accordance with guidance issued by the Institute of Lighting Engineers (ILE) in order to prevent light pollution;
- Use will be made of light fittings that reduce light emitted upwards and towards wildlife corridors etc, with all lighting fitted with light sensors which triggers lighting to switch on or off as required, and;
- The Spine Road, Side Roads, Semi Private Drives and Parking provision for the D1 Use, care home and primary school will be lit to ensure adequate security and safety is maintained. Broader public open spaces will remain unlit to ensure light spill is kept to a minimum.
- Lighting will be selected and positioned so as to maintain a dark corridor along the site's western and northern boundaries for commuting / foraging bats.

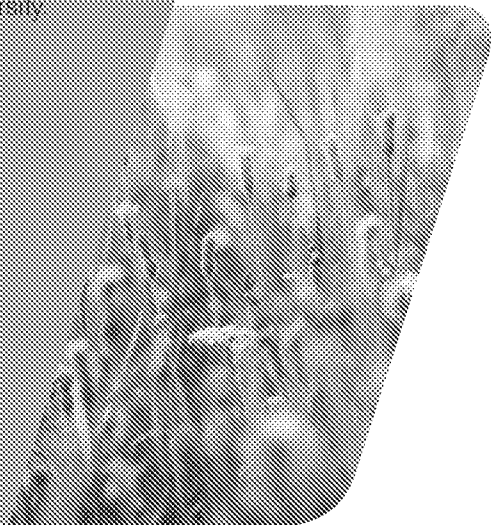




Green Infrastructure

- 4.31 Green Infrastructure (GI) refers to a robust framework of structural planting, open spaces (both hard and soft) and habitats. The site's GI seeks to develop an attractive environment for residents and visitors to the site whilst effectively integrating the development into its wider context. Green Infrastructure promotes recreation, movement and leisure, access to nature and the whole sale enhancement of site wide biodiversity.
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- 4.32 Key design objectives relating to the design of the site's GI include the following:

- The creation of attractive usable spaces that are accessible to all.
 - The use of structural planting and open space to provide an effective transition between urban and rural environments. This is to include 'Green Wedges' into and through the development in accordance with recommendations within both the Arun Green Infrastructure Study (2012) and The West Sussex Landscape Strategy (2005).
 - Beside the formation of new site access points, maintain and enhance existing boundary vegetation and supplement this with new habitats, including meadow and wetland in order to maximise site wide biodiversity.
 - Realign and reproduce the existing watercourse through the site so that this increases its functional capacity, its biodiversity potential and its visual amenity. This watercourse is to form part of a wider Sustainable Drainage System to regulate surface water runoff through and from the site.
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- Maintain a landscape buffer, including new tree and hedge planting for screening purposes, between the proposed development and existing residents fronting Hook Lane. New planting is to balance the visual integration of the existing urban area with new development whilst softening views into the site.
- The development will include street tree planting to define key routes and road intersections. Street trees will also be used as focal features at the end of vistas and around incidental green spaces.
- The care home / specialist housing for the elderly will include communal garden space.
- Parking areas associated with both the care home, school (Masterplan Option A only) and D1 Use will be sympathetically designed to include planting and tree planting.



- Site Boundary
- Developable Area
- Green Infrastructure
- Pedestrian Access
- Viewing Mound
- Formal Equipped Children's Play Space



Site Boundary

Developable Area

Green Infrastructure

GI Components

4.33 Our Green Infrastructure (GI) framework consists of the following key components:

- **Hook Meadow** - To the south of the site a small green provides an attractive outlook for the proposed care home, informal recreation space and ensures that development is set back from the junction of Hook Lane and Pagham Road.
- **Western Boundary** - Along the site's western boundary a green buffer (minimum 20m in width) is proposed. This will retain existing boundary hedge planting and reinforce this with new woodland planting. A linear Swale / attenuation basin is proposed to run parallel to the boundary. This feature will be predominantly dry, filling to accommodate heavy rainfall events.
- **Childrens Play Area** - A new equipped children's play area, to include both fixed equipment such as slides and swings alongside logs, boulders and earth mounding etc for natural play is proposed towards the centre of the site. New roads in the vicinity of the play area are to include raised tables and a dedicated crossing as necessary.
- **Downs View** - Towards the centre of the site the creation of new parkland centred around the a realigned watercourse is proposed for semi formal recreation i.e the grass is to be kept cut for ball games, running and walking etc. Incorporated within this new park a viewing mound seeks to open up views north to the South Downs Area of Outstanding Natural Beauty.
- **Sefter Meadow** - To the north of the site a wide open space is provided for informal ball games, picnics and dog walking. This area is to be cut less frequently allowing meadow species to establish and flower.

GI PLAN OPTION A

- Northern Boundary - Along the site's northern boundary a green buffer from the Seftor Road carriageway (minimum 20m in width) is proposed. This will retain existing boundary hedge planting and reinforce this with new woodland planting.
- Seftor Green - To the north east of the site a small green provides an attractive space close to Hook Lane. Development is set back from the road and the green area echoes the character on the opposite side of Hook Lane, creating balance and a green gateway to Hook Lane.
- Rife Green - A new linear green space effectively extends Downs View to, Eat Hook hereby connecting a recreation route and wildlife corridor through the development. At the centre of this space the realigned watercourse meanders from its existing culvert under Hook Lane into the development.
- Eastern Boundary - Development will be set back from Hook Lane. Existing hedgerow boundaries will be reinforced and new street tree planting implemented to further define the streetscape of Hook Lane and to help nestle the development into the wider landscape setting.

4.34 The above features are common to both Masterplan Options A and B albeit Masterplan Option A also includes additional green infrastructure associated with the proposed school playing fields. Playing fields are designed to front Hook Lane thereby increasing the perceptible setback of development where existing housing fronts the proposed school.

4.35 It is of note that on site provision of open space equates to circa 6.65ha which far exceeds the quantum required within Arun District Council's Open Space Standards SPD (2000) which requires circa 1.78Ha. In line with this guidance we propose a Neighbourhood Equipped Area for Play within the proposals. Whilst we are not proposing formal playing fields within the site there is sufficient space available should playing fields be deemed necessary.

Structural planting and open space to provide an effective transition between urban and rural environments

Site Boundary
Developable Area
Green Infrastructure

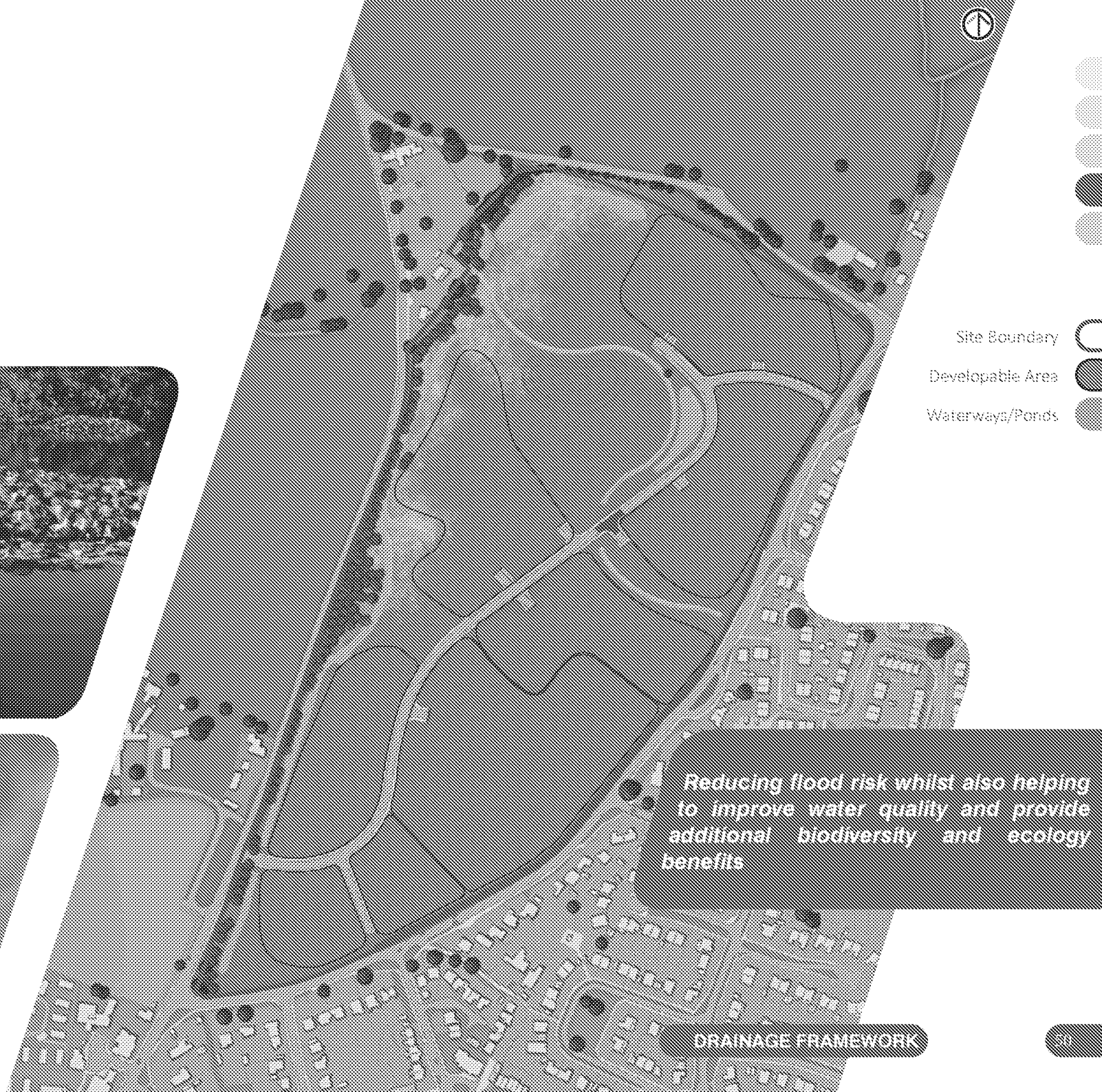
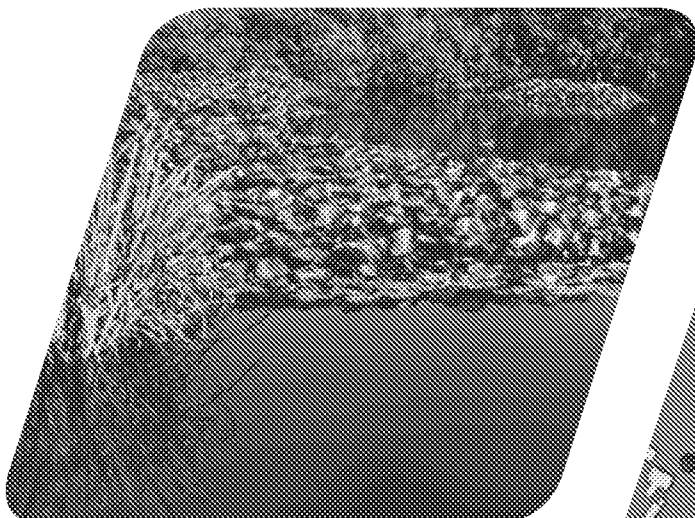
Softworks

- 4.37 Planting throughout the public open spaces and around the Site's periphery will comprise predominantly of native species agreed through discussion with the Local Authority's Landscape Officer and/or Parks Department. Species will include, but not be limited to – oak, ash, hornbeam, field rose, field maple, wild cherry and hawthorn, guelder rose, blackthorn, hazel and holly.
- 4.38 Meadow and wetland species similarly are to be agreed with the Local Planning Authority but should as a minimum seek to meet local BAP guidelines. Specimen street trees will include a mix of native and ornamental species to promote biodiversity and offer seasonal interest and robustness.

Sustainable Drainage

- 4.36 An integral part of our proposals is to create a Sustainable Drainage System (SuDS) comprising of permeable paving (where appropriate), swales and attenuation basins (shallow ditches and ponds). These features will collect and regulate stormwater run-off thereby reducing peak flows leaving the site. In addition these features will reduce flood risk whilst also helping to improve water quality and provide additional biodiversity and ecology benefits.







Site Boundary

Developable Area

Waterways/Ponds

Re-routed Existing Watercourse

Indicative Drainage Fall

DRAINAGE PLAN OPTION A



BASIN B

BASIN A

Site Boundary

Developable Area

Waterways/Ponds

Re-routed Existing Watercourse

Indicative Drainage Fall

DRAINAGE PLAN OPTION B

Appearance

4.39 Whilst the proposed development does not seek to directly emulate the character of adjacent post war housing it will seek to take design cues from local materials and architectural styles evident within the wider area and from some of Pagham's original pre-war buildings to ensure that it reflects the local vernacular of the wider area.

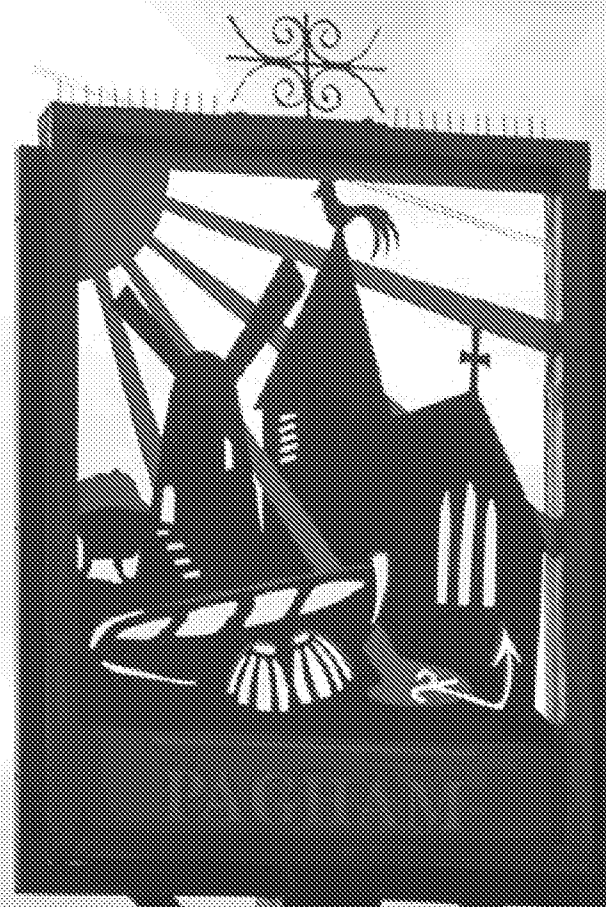
4.40 Traditional local vernacular can be defined as:

- Detached / semi detached properties
- The use of half hipped roofs
- Frequent gabled dormers
- Brick and render fascia
- Regular point timber garden fencing
- Grid patterned framed windows (often white)
- The predominant roofing colour is brindle

4.41 Post war development within the wider settlement area varies in appearance. However, certain characteristics are to be echoed within the proposed development.

- Modern characteristics can be defined as:
- Non linear layout with meandering streets
- Areas of accessible greenspace
- Appropriately scaled private gardens
- Homes with private driveways and the frequent use of garages.





ACCESS

Site Access

- 5.1 Masterplan Option A proposes three priority junctions that connect with existing highway infrastructure, two along Hook Lane and one from Pagham Road, whilst Masterplan Option B proposes two access points, one off Hook Lane and one off Pagham Road.
- 5.2 Access off the existing highway network will be provided from Pagham Road and from Hook Lane. Access points will comprise new priority junctions. The proposed junction onto Pagham Road will include a ghost right turn lane to prevent traffic turning right into the development obstructing traffic along the main carriageway.
- 5.3 In addition to a ghost right turn the development proposes a new pedestrian footway and an improved bus lay-by arrangement on Pagham Lane. The proposed accesses off Hook Lane will also include new footways either side of the access roads which will in turn link into the existing footway network.

Streets & Spaces

- 4.42 Significant consideration has been taken to ensure that streets and spaces are legible, appropriate to the scale of the development and that they reflect the character of the wider landscape.
- 4.43 Streets within the development will be built to an adoptable standard.
- 4.44 The hierarchy of streets and the size and arrangement of development blocks and open spaces is a connected design discipline addressing the need to meet the following:
- Maximise connectivity to the existing road network without detriment to its function;
 - Design a street pattern which reflects local morphology and place making character, with a single spine road providing access to a hierarchy of descending routes;
 - Utilise the local street pattern or 'Urban Grain' to create well-connected functional layout which ensures all desire lines are fully appreciated and considered within the scheme;
 - Promote a street pattern which is easy to navigate whilst providing priority to pedestrian movements;
 - Provide a choice of integrated routes for all. This should include a clear, easy-to-use network of streets and footpaths connecting to existing networks, and proposed local facilities/public open spaces etc;
 - Promote ready accessibility for the needs of those with impaired mobility and elderly residents, and;
 - Encourage the control of vehicle speeds and guide movement through good urban design. Explore local examples such as restricted forward visibility, narrow street widths, frequent connections, changes in direction, changes in surface treatment and tight junction radii.



Primary Vehicular Route - Both options

Secondary Vehicular Route - Both options

Vehicular Access - Both options

Potential Vehicular Access - Option B only

Pedestrian Access - Option dependent; see next page

Utilising the local 'Urban Grain' to create well-connected and functional layout



Access Objectives

- 5.1 Key access objectives include the following:
- The creation of attractive usable spaces that are accessible to all.
 - The use of structural planting and open space to provide an effective transition between urban and rural environments. This is to include 'Green Wedges' into and through the development in accordance with recommendations within both the Arun Green Infrastructure Study and The West Sussex Landscape Strategy.
- 5.2 New priority junctions into the development from Pagham Road and Hook Lane are internally connected by a single primary route or 'Spine Road' which meanders through the proposed development, allowing an efficient and even dispersal of traffic throughout the site.
- 5.3 The Spine Road is to be softened by garden fronted properties and will feature street trees at regular intervals. The road will comprise a 5.5m wide carriageway with 2m wide footways either side. Verges may or may not be included depending upon one's location within the development albeit the development promotes a green approach to streets befitting the site's transitional character between urban and rural areas. Moreover opportunities for localised rain gardens and / or swales should be considered alongside the Spine Road to convey and attenuate surface water runoff. In addition key junctions are to be tabled and block paved to denote an intersection or important pedestrian crossing.

5.4 Side Roads connect to, and feed from the Spine Road. The fundamental role of Side Roads is to provide internal circulation into residential areas, connecting them to the site access points and to the wider network of greenspaces. Development along Side Roads is to actively face the street whilst maintaining a setback for garden spaces and driveways. Buildings may vary in size and style, albeit housing will typically comprise semi-detached and linked accommodation. Side Roads will comprise the same overall dimensions as the Spine Road albeit with fewer regular street trees and verges and in place a reliance on front garden planting for softening and amenity.

5.5 Semi private drives lead from Side Roads and in some instances directly from the Spine Road, providing access to specific groups of properties. These roads are typically no through routes for access only and as such are semi private in nature. Their form and geometry is to be organic in nature with a carriageway nominally sized at 4.5m in width. These spaces will be designed as shared surfaces, i.e. they will comprise of a block paved surface which combines the carriageway and footway into a single surface. Variations in road width will include localised widening to provide space for visitor parking. These routes typically have single frontage development which faces across these roads towards open space. As such they provide logical, easy and unrestricted access between proposed residential areas and the site's wider GI.



Traffic Calming

- 5.6 The potential exists for traffic calming to be provided along Hook Lane should it be considered necessary to be provided. Traffic calming of Hook Lane would provide a safer route for pedestrians to cross when accessing local facilities such as the local schools and shops. The traffic calming measures could be in the form of table top ramps or priority working/ chicanes.

Public Transport

- 5.7 New footway provision is proposed on the western side of Pagham Road from the proposed site access southwards to link with the existing footway. This will link to a new crossing in order to provide a safe crossing point for pedestrians when accessing the local bus stops and facilities on the western side of Pagham Road.
- 5.8 In addition to the above, the proposal includes for the existing bus stop on Pagham Road (north of its junction with Hook Lane) to have a formal bus lay-by designed to accord with DMRB standards. This bus stop will include raised kerbs, bus timetable information and if room is available a bus shelter and / or seating.
- 5.9 The bus stops on the western side of Pagham Road, Hook Lane and Lodsworth Road close to Hook Lane will also be provided with raised kerbs and new bus flags.

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- 4.46 In addition to the above, the proposal includes for the existing bus stop on Pagham Road (north of its junction with Hook Lane) to have a formal bus lay-by designed to accord with DMRB standards. This bus stop will include raised kerbs, bus timetable information and if room is available a bus shelter and / or seating.
- 4.47 The bus stops on the western side of Pagham Road, Hook Lane and Lodsworth Road close to Hook Lane will also be provided with raised kerbs and new bus flags.

Pedestrian & Cycle Links

- 5.1 Published best practice identifies five main requirements for pedestrian routes, and wherever possible these should be adhered to when planning for pedestrians within the proposed development:
- Convenience – follow desire lines without any undue deviation from route
 - Connectivity – link multiple origin and destinations
 - Conviviality – be pleasant to use
 - Coherence – be made legible through paving and/or signage
 - Conspicuousness – promote security and safety allowing pedestrians to see and be seen by others.

Pedestrian Linkages

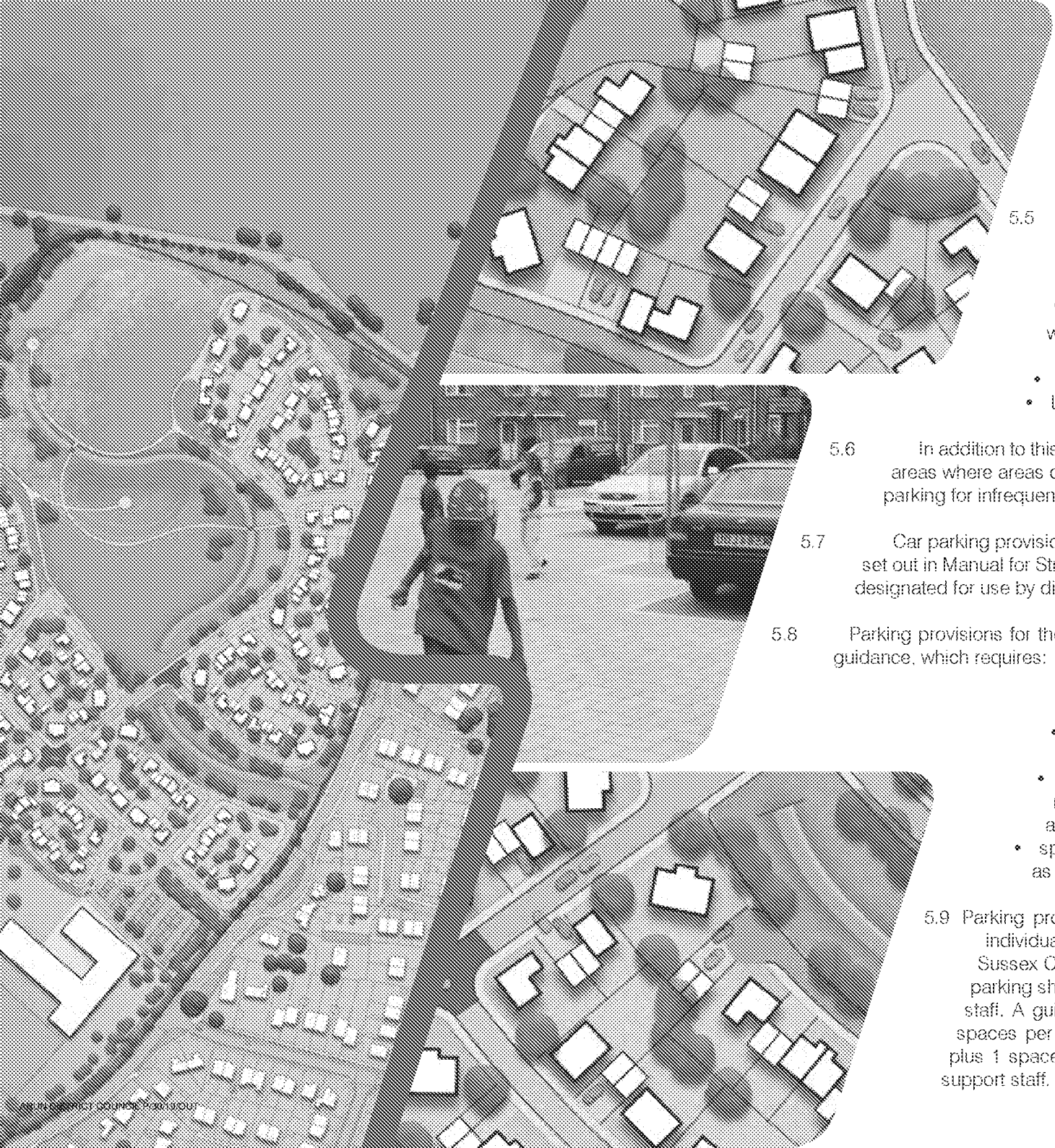
5.2 The 'Guidance for Cycle Audit and Cycle Review' (The Institution of Highways and Transportation, 1998) determines five main requirements for cycle routes. It is highly crucial that these requirements are recognised if the promotion of cycling to the site as a viable and attractive alternative to car use is to be successful:

- Coherence: continuous & to a consistent standard
- Directness: closely follow desire lines as much as possible
- Attractiveness: in aesthetic as well as objective terms
- Safety: designed to minimise risks for cyclists & others
- Comfort – well maintained smooth dry surfaces, flush kerbs and gentle gradients.

5.3 The development will encourage sustainable methods of transport. The majority of local facilities and trips are located within convenient walking distance. All trip ends are located within reasonable cycling distance, as such, walking and cycling trips are a realistic alternative to the use of a car. Existing local amenities are discussed in more detail in paragraph 3.5-3.8.

5.4 The masterplan allows for walking and cycling connections from the proposed development to the east via multiple points along Hook Lane.





Vehicle Parking

5.5 Parking provision follows both national and local guidance. The development seeks to accord with Arun District Council's Supplementary Planning Document relating to parking standards (October 2000). Parking provisions for 'an Estate Development with 16 or more units' referenced within the above document is identified as:

- Smaller house size = 2.2
- Larger house size = 3.2



5.6 In addition to this some on street visitor parking is to be provided in semi private areas where areas of shared spaces have been sized to accommodate additional parking for infrequent use.

5.7 Car parking provision for disabled people should be consistent with the standards set out in Manual for Streets, which state that 5% of residential car parking spaces are designated for use by disabled people.

5.8 Parking provisions for the proposed care home accords with supplementary planning guidance, which requires:

- one car space for every twenty residents or increment of up to twenty residents;
- one car space for visitors at the ratio of one space for eight residents or increments of up to eight residents;
- eight car spaces for staff based on a rate of one space per five residents with at least one space to be provided as a garage; and
- space for service vehicles such as a doctor / ambulance space as required.

5.9 Parking provisions D1 Use and primary school are to be assessed individually and agreed with the Local Planning Authority. West Sussex County Council generally consider that a guide for school parking should be the provision of 1 space per 2 daytime teaching staff. A guide for the D1 Use is 1 space per practitioner plus 4 spaces per consulting / examination room for visitors and staff, plus 1 space per 20 sq.m of office space for administrative and support staff. Parking levels to be established within a Travel Plan.

Cycle Parking

5.10 The use of cycles will be promoted through three meter wide footpaths which travel through a network of interconnected green spaces that align with the wider landscape.

5.11 The development seeks to exceed the requirements of Arun District Council's Supplementary Planning Document (SPD) relating to parking standards (October 2000) which requires one cycle space per eight car parking spaces, subject to a minimum of two cycle spaces.

5.12 Each residential plot will include space for secure cycle storage. These are to be planned either within over sized garages or within a lockable garden shed / storage unit.

5.13 The D1 use (health centre / children's day nursery), care home and primary school will have dedicated lockable, external cycle storage provision. The exact size and location of cycle storage for these uses will be agreed with the Local Planning Authority and will be determined in the subsequent planning stages.

Hardworks

5.14 The streets and roads within the scheme will all be designed and constructed to an adoptable standard using commonplace materials such as a tarmac road surface and concrete kerbing. At key junctions however the road surface may be tabled, i.e. raised to the same level as the adjacent footway and surfaced in high quality block paving. Semi Private Drives will also be block paved using a contrasting materials to the Spine Road and Side Roads in order to aid orientation and identity.

5.15 Footpaths through public open spaces will be formed in water bound gravel to a minimum dimension of 3m width to ensure safe shared use by both pedestrians and cyclists. Footpaths either side of roads will be a minimum of 2m in width.



SUSTAINABILITY

Sustainable Initiatives

- 6.1 A holistic approach to sustainability has been taken by the design team. In this context, all dwellings will meet the requirements of Part L of the current Building Regulations, with the overall aim to reduce the carbon footprint of the development, particularly when compared to other similar forms of development.
- 6.2 The aim is for the development to deliver a high quality, environmentally, socially and economically sustainable form of development. Integral to the scheme are the following initiatives:
- a low energy design;
 - the use of renewable technologies;
 - the enhancement of biodiversity;
 - sustainable drainage (SuDS);
 - the encouragement of non-car modes of travel transport;
 - The provision of a range of housing for families, home workers and the elderly;
 - On site employment opportunities within the care home, school and D1 use, and the provision of community facilities, namely equipped children's play space, school and D1 Use.

Design Considerations

- The delivery of a mix of dwelling types, tenures and sizes to meet the housing needs of the community. Affordable housing would be provided in groups in order to meet the management requirements of the affordable housing provider but will otherwise be indistinguishable from market housing.
- A flood risk assessment has been undertaken which in turn has influenced the masterplan. The Site falls outside the 1 in 1000 year flood extent. No residential buildings are proposed within an area prone to flooding.
- The Site will use a Sustainable Drainage System (SuDS) to reduce flooding and manage flood risk including the use of swales and attenuation basins. An existing watercourse crossing the site will be naturalised and enhanced for biodiversity and visual amenity. The drainage system for the site will incorporate features to prevent the pollution of local water courses.
- Initiatives to reduce the waste generated during the construction process will be established through the production of a Construction Environment Management Plan (CEMP). For example the use of locally sourced waste products (e.g. demolition waste for aggregates and hardcore) will be considered where possible. Materials will be sourced from companies with accredited environmental best practice such as ISO14001. In addition the Green Specification Guide will be used to specify materials where possible.
- At the detailed design stage refuse and recycling facilities will be designed in and incorporated into each individual dwelling in line with Local Authority collection practices.

- HLM are committed to developing a scheme that is energy efficient and reduces water demand. Building orientation for passive heating and improved thermal mass and insulation etc, will help reduce energy demand in every property. Furthermore bespoke micro or small scale energy technologies will be explored for onsite power generation. In addition to energy efficiency the development will incorporate measures such as low flow taps, showers and aerators, dual flush toilets and low volume baths to reduce water demand. Externally housing will be fitted with water butts to reduce the demand on garden irrigation.
- The development will comprise of a range of properties that offer social benefits through reducing the likelihood of fuel poverty and fuel supply security. It is likely that each property will be provided with smart meters to allow individuals to manage and understand their energy usage.
- Implementation of low energy lighting internally and externally will be provided. Control of lighting will include the application of daylight, time and presence reactive intelligent lighting controls. The choice of lighting at night-time for public areas will seek to ensure a safe environment but minimise any light pollution. Besides key footpath / cycle links open spaces will not typically be lit. In particularly green buffers to the west and north of the site will be maintained as 'Dark Corridors' for foraging bats.
- A development of this size is not going to have a dramatic heat island effect and significant issues with the urban environment are unlikely. Any urban warming associated with the development will be reduced through the Green Infrastructure which will provide shading and shelter in public areas. The masterplan has included the ability to allow air flow across the Site to increase cooling effects at the street level. In addition consideration has been given to passive solar design to enable heating and nighttime cooling to permit natural heat loss to occur appropriately. The masterplan has sought to maximise the opportunity for openings facing towards the south to both maximize passive solar gain and to enable micro generation renewable facilities to be incorporated into the roof designs.
- The principle of Secure By Design have influenced the masterplan but these matters will need to be considered further at the detailed design stage.
- The aim of the development is to provide genuine transport choices to be made to reduce reliance on the private car. The development has been designed to enable future residents to walk safely around the development and to access Pagham whether on foot or cycle, and the wider area by public transport. The inclusion of on plot cycle parking would be part of the detailed design of each building and commercial / community uses.
- The ecology surveys indicate that the site is not of significant ecological interest albeit it does lie within 1km of the Pagham Harbour SPA. The existing ecology, which is principally related to the hedgerows and trees, will be preserved and reinforced on site where possible. The site's bio-diversity will be significantly enhanced with extensive new open spaces and green corridors incorporating native and deciduous planting to reflect the landscape character of the wider area. Some of the green corridors are matched to the SuDS systems and will help to maintain the blue-green bridge which is an important factor in making the scheme resilient to the impacts of climate change. Opportunities will be taken at the detailed design stage to promote further biodiversity with incentives such as bird and bat boxes, but also the creation of reptile and hedgehog habitats within the GI which will provide increased foraging and refuge opportunities. A reptile translocation exercise will be undertaken to ensure that the populations within the site are protected from construction and to ensure a favourable conservation status is maintained.

prepared by:



URBAN
WILDERNESS

on behalf of:

Hallam Land Management Ltd