9.1

LANDSCAPE STRATEGY

9.1

LANDSCAPE STRATEGY

The landscape strategy for the Gomm Valley aims to recover the landscape to a productive semi-natural state, with significantly increased grassland including chalk grassland. This strategy enhances the ecological networks on and off site while significantly enhancing biodiversity.

9.1.1

SITE WIDE ECOLOGICAL NETWORKS

Ecological networks

Total Landscape
44.08 ha

Park and semi-natural green space
22.02 ha

Woodland and hedgerows
13.00 ha

Local Wildlife Site
4.46 ha

Tree Belt and semi natural green space
3.17 ha

Play
0.96 ha

Allotments
0.47 ha

Note: Woodland includes Little Gomm's Wood

9.1.1.1

THE MATRIX OF ECOLOGY

Little Haldens benefits from a large natural resource in the Gomm Valley and the Gomm Valley will benefit from the investment brought by Little Haldens. A new grassland landscape will replace the current arable landscape, connecting existing and proposed woodland. The strategic valley landscape strategy considers the woodland and grassland as a combined system that facilitates vertebrate and invertebrate migration across and beyond the valley.

Existing woodland 1.95 ha

Proposed woodland 5.70 ha

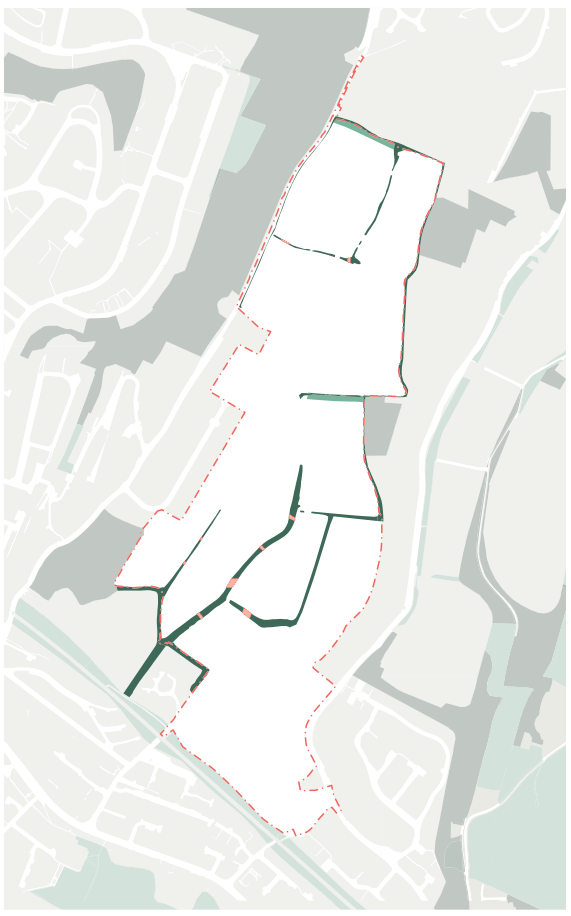
Removed woodland 0.14 ha

Net additional woodland 5.56 ha

Woodland

9.1.1.2 WOODLAND

All ancient woodland on site is retained and new woodland buffer is introduced. 5.70 ha of new woodland is proposed to uplift the total on site to 7.52 ha.



Existing hedgerow 4,143m

Proposed hedgerow 300m

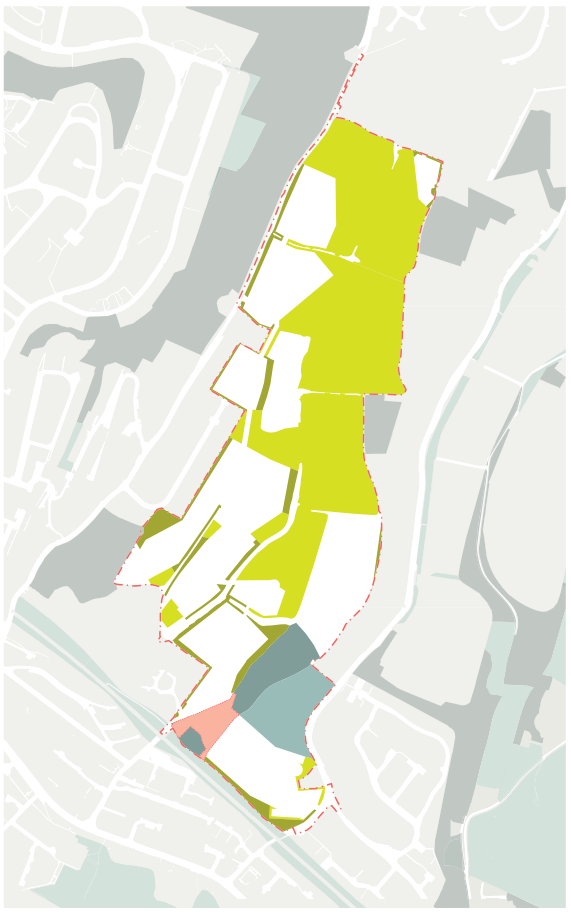
Removed hedgerow 154m

Net additional hedgerow 146m

Hedgerows

9.1.1.4 HEDGEROW

300m linear meters of hedgerow is to be planted. Over 4,134 m linear metres of existing hedgerow will be enhanced or replanted. Existing hedgerows on site are mature and feature ash as the predominant species. Ash is subject to 'Ash Dieback' disease and it is preferred that replacement tree species are planted.



Existing LWS 2.79 ha

Proposed new LWS 2.34 ha

Removed LWS 0.84 ha

Net additional LWS 1.50 ha

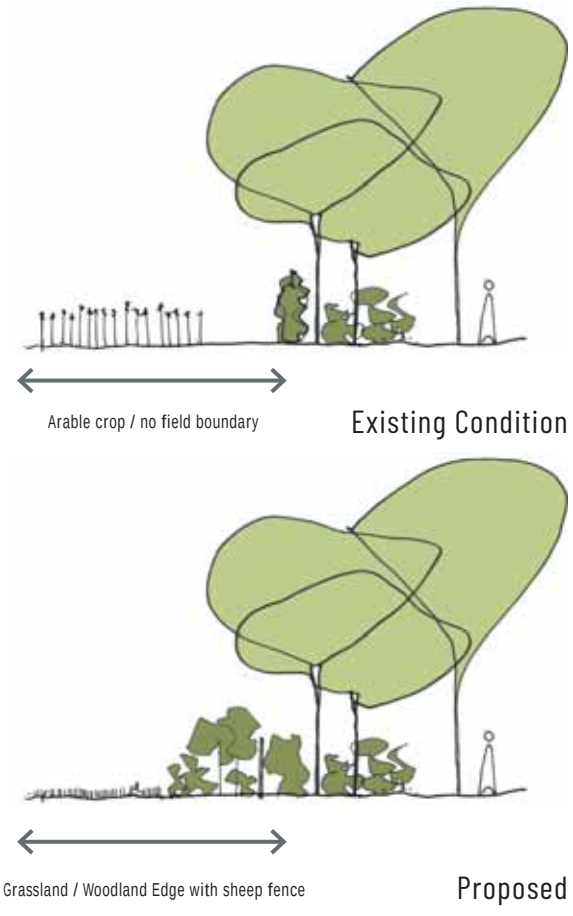
Proposed park and semi-natural green space (including grassland) 22.02 ha

Proposed structural planting and semi natural grassland 3.17 ha

Grassland

9.1.1.3 GRASSLAND

All arable crop farming is proposed to be removed and replaced with grassland. The target is to create 20 ha of new grassland of which 30% is to be chalk grassland.



9.1.1.5 SSSI, LWS & ANCIENT WOODLAND

Existing woodland, the SSSI and the proposed LWS will be surrounded by new woodland edge planting into order to provide more valuable habitats and protection from wind. In order to manage access a 1.2m high sheep proof fence will be introduced.

9.1.2.3
VALLEY ROUTES & CHARACTER

This page describes proposals to introduce more access to the valley. Key aspects of the valley that should be protected and enhanced are shown opposite

The Valley Route

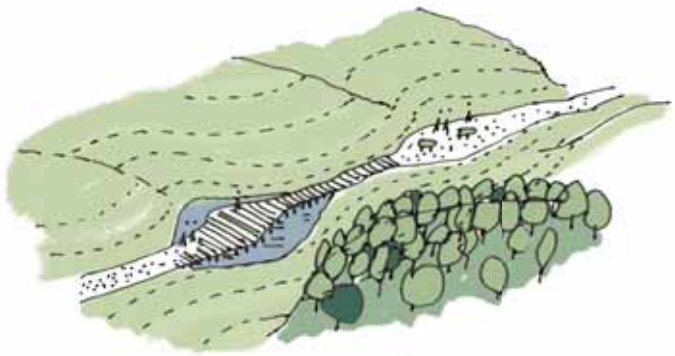
The valley path underlines the base of the floor, connecting a series of activity points along its length. Primarily permeable and low-maintenance surfaces provide water infiltration, with boardwalks at key positions.

Hierarchy of Paths

The main shortcut routes extend across the site, connecting the villages from East-West. A series of informal meandering paths and desire-lines cut through the grass and create a secondary network of nature walks and strolling promenades. Nature routes lead through the hedgerows.

Mitigating Ecological Disturbance

Fences may be used in the establishment period in order to accelerate the development of chalk grassland. In the SSSI, Local Wildlife Site (LWS) and Ancient woodlands, routes for humans will be managed using 1.2m high sheep proof fencing.

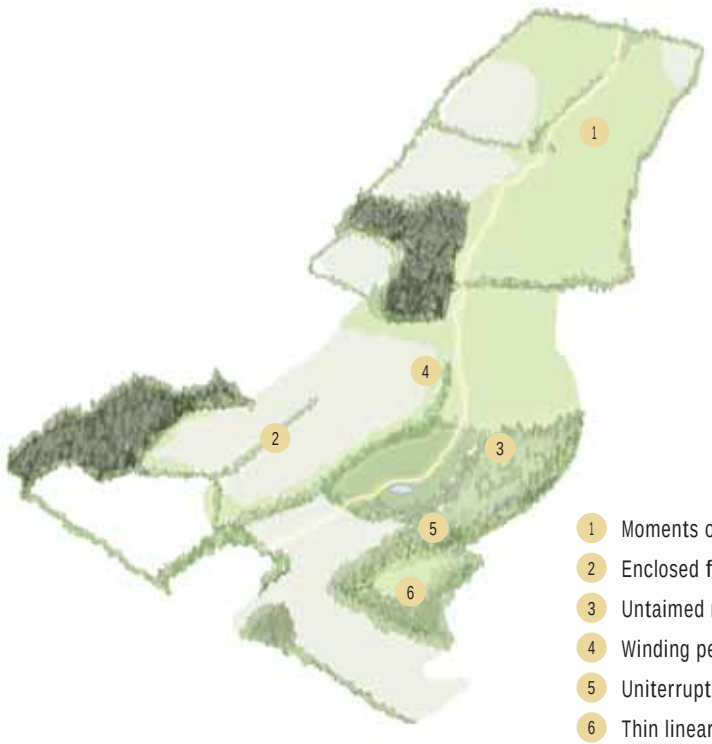


The Valley Route

Hierarchy of Paths

Raised boardwalk above grassland

Existing path, Gomm Valley



1. Moments of airy openness
2. Enclosed fields
3. Untaimed natural diversity
4. Winding perspectives
5. Uniterrupted continuties
6. Thin linear corridors of intensity

1 MOMENTS OF AIRY OPENNESS

2 ENCLOSED FIELDS

3 UNTAMED NATURAL DIVERSITY

4 WINDING PERSPECTIVES

5 UNINTERRUPTED CONTINUITIES

6 THIN LINEAR CORRIDORS OF INTENSITY

9.1.2

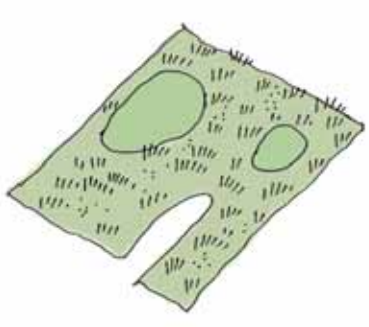
SPATIAL DESIGN PROPOSALS

This page describes the proposals that protect and enhance the valley form.

9.1.2.1 ARTICULATION OF THE LAND

Grassland

Within the wider field condition, specific grassland areas are defined for biodiversity and reclamation, programming, access and enclosure.



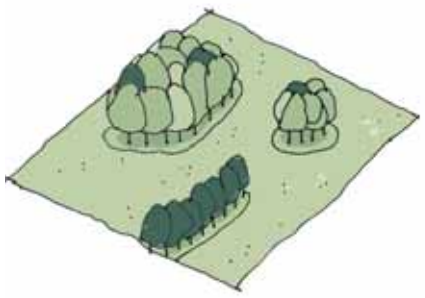
Field condition

Grassland patchwork

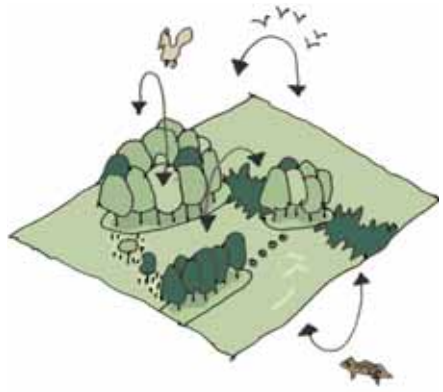
Articulated Copses

The ancient woodland and linear woodland elements (enlarged hedgerows) will be protected by ensuring that they remain isolated elements with the valley landscape.

Exaggeration and enhancement of the existing site condition - defined by contrasts of density and openness. Articulated dense woodland copses are placed within an open field condition, as “islands”.



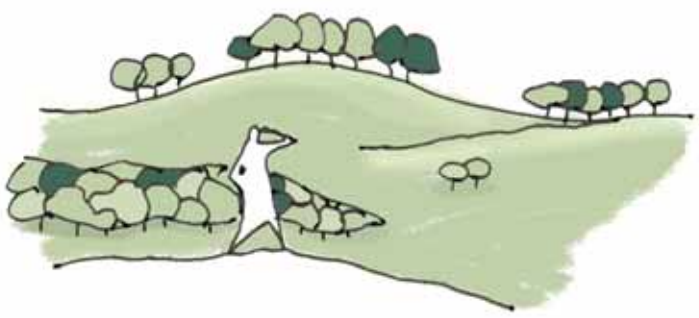
Articulated Copses



Ecological continuity

Outlook

The wonder of the site is characterised by a strong articulation between open fields and dense woodland “islands”. The rolling topography is visually measured by the interplay between forest and field, and the ridge defined by the interplay of rhythms between the two. In the Gomm Valley this is rienforced in the proposed design.



Outlook

Little Gomm’s Wood, Gomm Valley

Soft landscape, Gomm Valley

Linear Hedgerows, Gomm Valley

9.1.2.2
THE VALLEY ELEMENTS

A number of key landscape features are proposed in the valley, these are listed below.

1. Swimming pond

Rainwater harvesting, filtration and reed beds surround a natural pond, set back in dense protective greenery for privacy. A path separates the attenuation pond from the swimming pond. Reeds and marginal grass planting is used to clean and filter collected rainwater from the urban areas.

2. The growing heart

Greenhouses, cafe space and outdoor workshops create a green centre close to Gomm Square, the centre for productivity and engagement around community agriculture.

3. Community growing slopes

Tiered growing slopes form productive small- and medium-scale agricultural areas linked to a central kitchen close to Little Haldens Square.

4. Allotment living

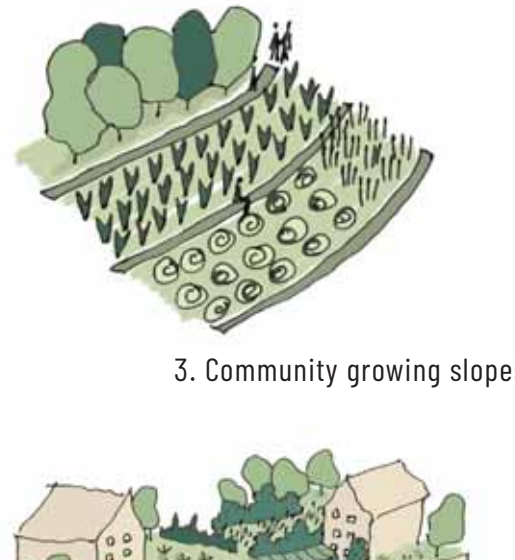
Back gardens open out into community allotments, creating private, shared and socially connected growing space outside the kitchen windows of residents.

5. Orchard lLiving

Diverse orchards and berry plantations around the Orchard Village create an engaging, productive, edible landscape around the houses. The curation of dense orchards screen buildings from key contextual viewpoints while allowing views into and across the valley floor.

6. Wild learning

Outdoor classrooms, outposts and natural play areas within the wild parkland harmonise and emphasise the interplay between nature and community.



1. Swimming pond

Naturbad Riehen, Switzerland

King's Cross Pond, London

Rosendals Trädgård, Sweden

2. The growing heart

Slottsträdgården, Sweden

3. Community growing slopes

Slottsträdgården, Sweden

The Terraced Gardens, Switzerland

4. Allotment living

Agrocité, Paris

Slottsträdgården, Sweden

Orchard path

5. Orchard living

Villa Puglie, Italy

Fountains Abbey Woodland Play, UK

6. Wild learning

Forest school

1. Swimming Pond
2. The Growing Heart
3. Community Growing Slopes
4. Allotment Living
5. Orchard Living
6. Wild Learning

9.1.3

PLAY

Play is included throughout the illustrative masterplan in accordance with Wycombe District Council (WDC) Policy.

Play type location diagram

KEY

- LAP
- LEAP
- NEAP
- MUGA

LAP, Wildplay Playground, Sydney

LEAP - Into the Wild, The Netherlands

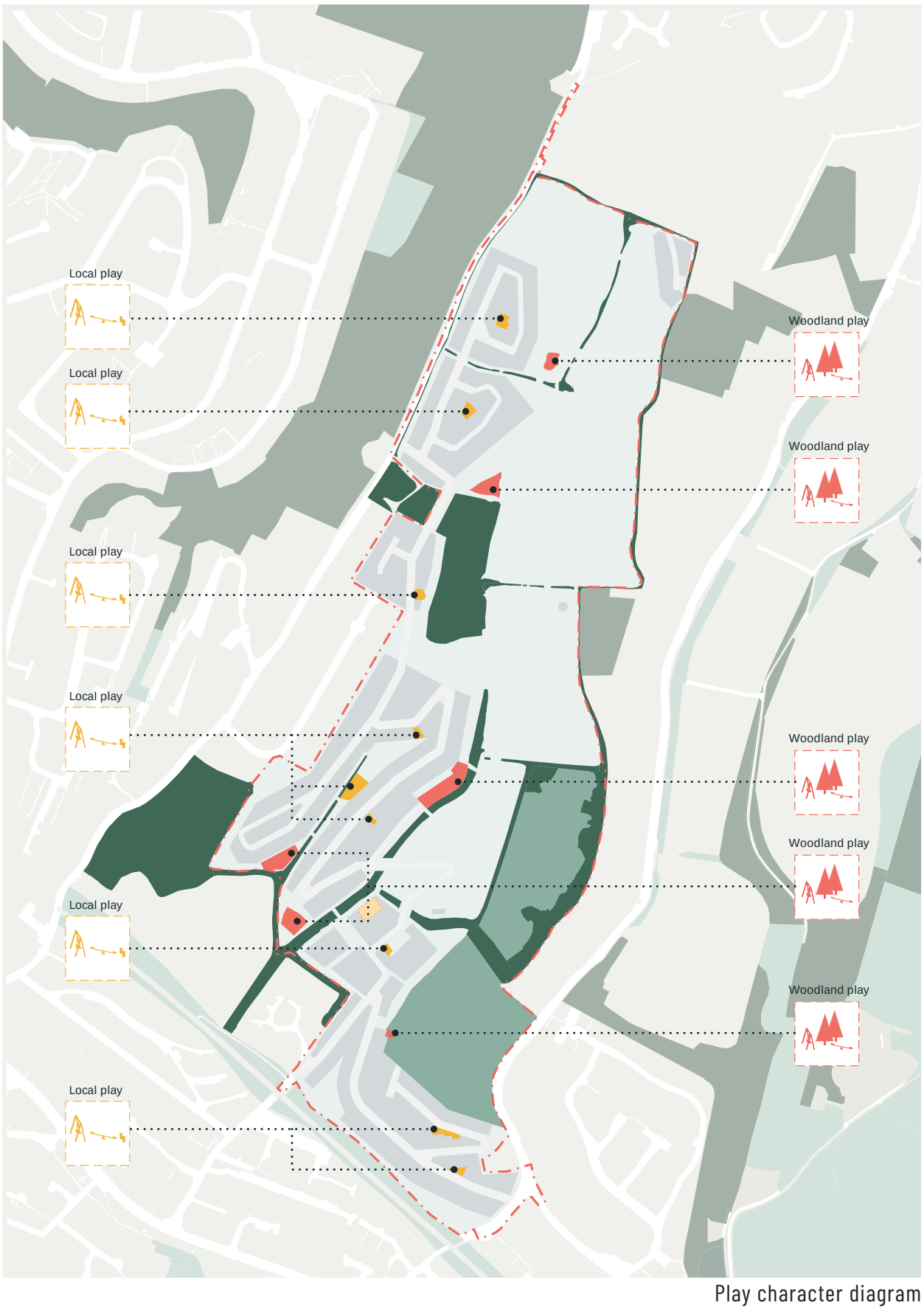
NEAP - Alconbury Weald, UK

MUGA - UK

9.1.3.1

PLAY HIERARCHY

WDC policy recognises three types of play space, the smallest being the LAP (Local Area for Play - for under 5 year olds) and the largest being the NEAP (Neighbourhood Area for Play - for over 11 year olds). There is also a category for Multi Use Games Areas (MUGAs) for teenagers. The diagram above shows the location of these types of space.



Play character diagram

KEY

Local play
Woodland play

Woodland play sketch

Fountains Abbey Woodland Play, UK

Terra Nova Local Play, Richmond

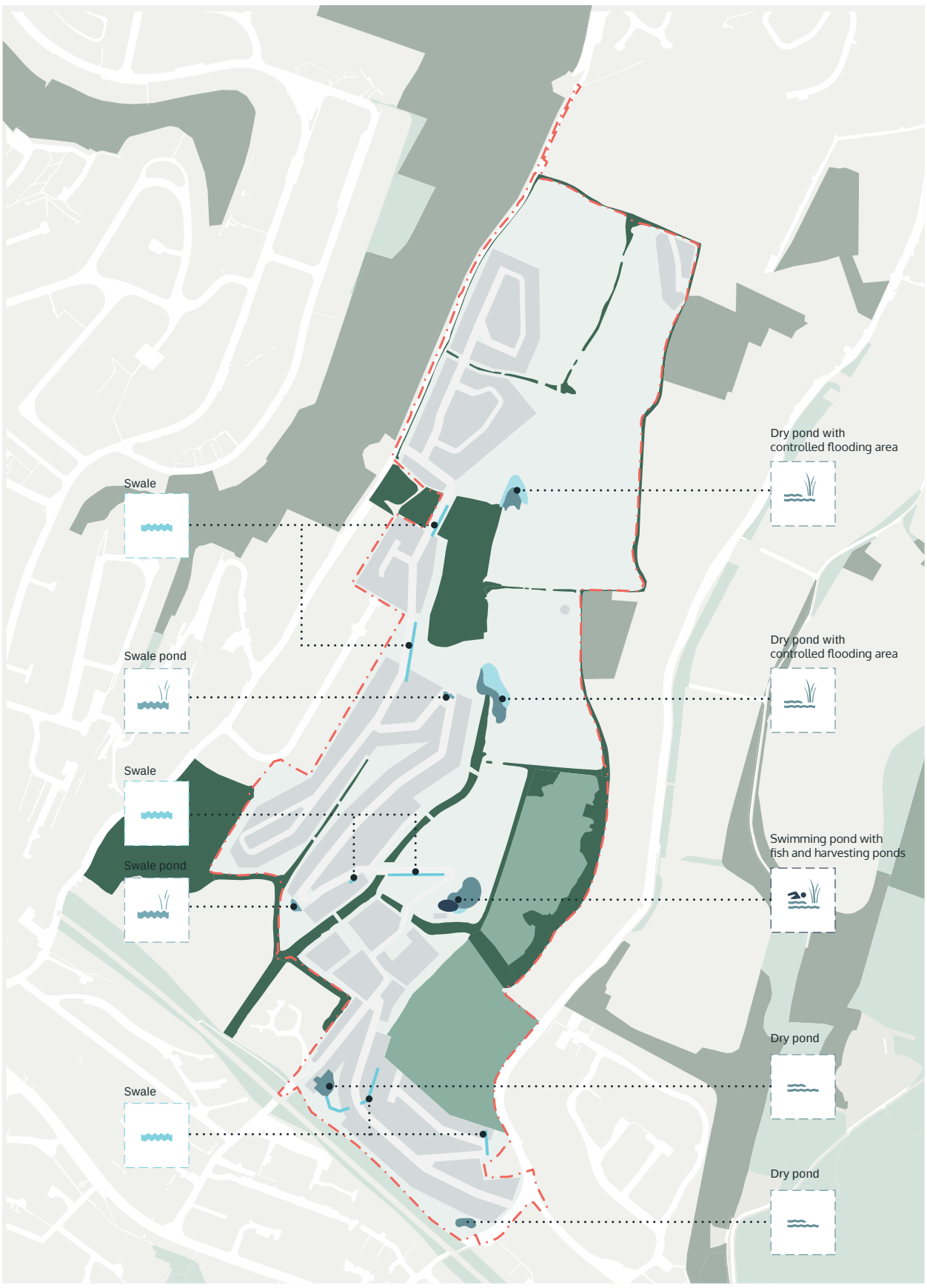
9.1.3.2 PLAY CHARACTER

Play character is loosely divided into two types, 'local play' and 'woodland play'. Local play is generally play for younger children and closer to homes and as such it sits within the more urban areas of the site and has a more 'urban', harder character, with more colour. Woodland Play is generally on the extremities of the urban areas and has a more informal character and will be made primarily with timber. It is envisaged the Woodland Play areas will be added to through community construction events managed by the on site 'Green Team'. However, sufficient play equipment will be present to satisfy policy as phases of development come forward.

9.1.4

WATER

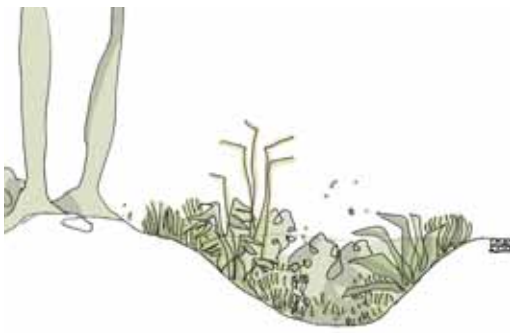
A drainage strategy for the site is included as part of the planning submission. This strategy is summarised here.



Gomm Valley water & drainage diagram

KEY

- Swimming pond
- Harvesting pond
- Fish pond
- Dry pond
- Swale pond
- Swale
- Controlled flooding area



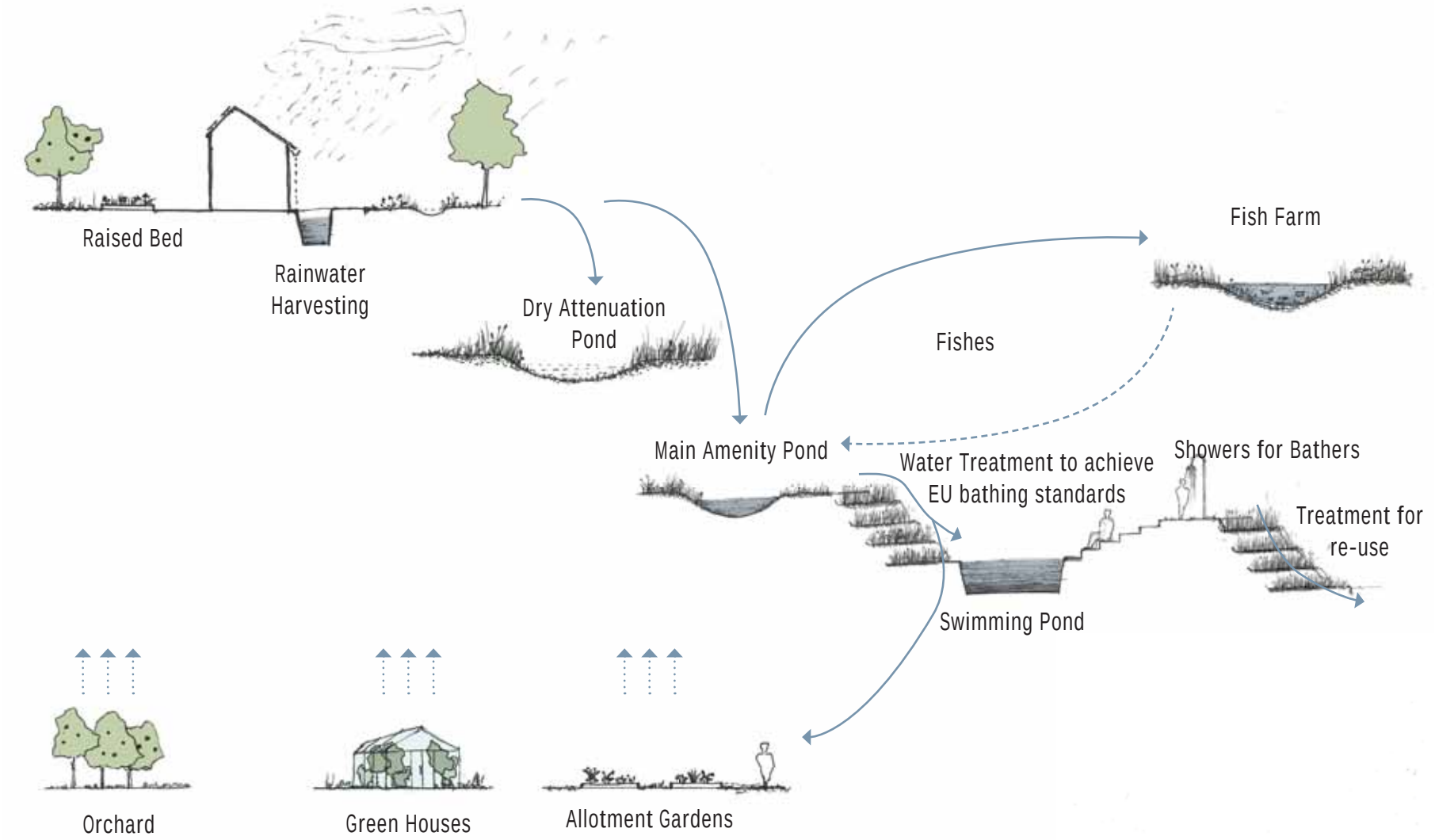
Illustrative planted swale section

Planted swale

9.1.4.1

SURFACE WATER DRAINAGE

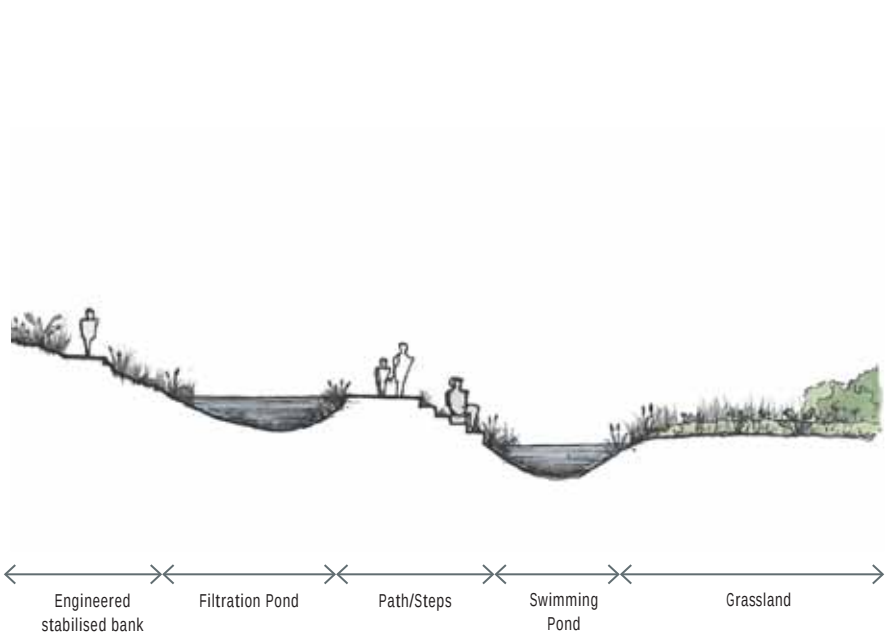
Prevailing standards require run-off water to be dealt with at, or close to source. Development site should (post development) yield greenfield run-off to offsite statutory undertaker's drainage system or rivers. This normally results in localised SUDS and infiltration close to buildings. In the Gomm Valley the chalk geology presents a risk of solution features (sink holes) or uncontrolled springs if water is allowed to directly infiltrate at the top of the valley. In light of this water is proposed to be collected locally and conveyed to attenuation ponds at the valley floor, from where it is discharged to the offsite drainage network.



Surface water system

9.1.4.2 SWALES & SURFACE WATER DESIGN

Run off from buildings and hard landscape will be collected and conveyed to the base of the valley by pipe or swales. Swales occur where space allows; generally between villages and on switchbacks (refer to diagram opposite). These swales will typically be between 800mm and 1m deep and have sides cut at a 1:2 slope, they will be 3-5 metres wide with a planted base.



Swimming Pond illustrative section - no visible retaining walls

Dry Pond

King's Cross Swimming Pond

9.1.4.3 PONDS IN THE PARK

Water arriving at the valley floor will be contained in five attenuation ponds, three in the parkland at the base of the valley (one of these will be in Little Haldens Park), one will be at the entrance to the urban village and one at the east of the site near Hammersley Lane. These ponds are shown on the diagram on the opposing page. These attenuation ponds will be dry during most rainfall events, they will only fill during more uncommon events (such as 1:100 year flood or more extreme). A companion water body to the dry pond in Little Haldens Park will be the swimming pond. This will be a publicly accessible, with changing facilities and a sauna.

9.1.5

LOCAL & URBAN ECOLOGY

Biodiversity is not the exclusive preserve of the 'natural' landscape. The urban realm takes the opportunity to introduce a myriad of habitats in order to produce significant net gain in biodiversity and give the visual impression of 'abundant green'.

Ecology Education

Open Mosaic Habitat

9.1.5.1 OPEN MOSAIC HABITATS

Open Mosaic Habitats (OMH) are found mainly in urban areas and are of high biodiversity value. OMH can host rare plants, mosses, lichens common and rare invertebrates, especially bees, wasps and beetles. Between 12% and 15% of all nationally-rare and nationally-scarce insects are recorded from OMH sites including 30 UK Biodiversity Action Plan (BAP) invertebrate species. Another key feature of OMH are the unusual groups of plants that may also be present; combinations which are often unique to OMH and currently little studied. OMH, this type of habitat was identified as a UK BAP Priority Habitat in 2007.

The title of the habitat system refers to the many different surfaces and substrates that occur in urban areas, these substrates support an unusual amount of habitat types when compared to expansive natural landscape and therefore can be of equal or more ecological value.

Rain garden section

Rain garden

9.1.5.2 RAIN GARDENS

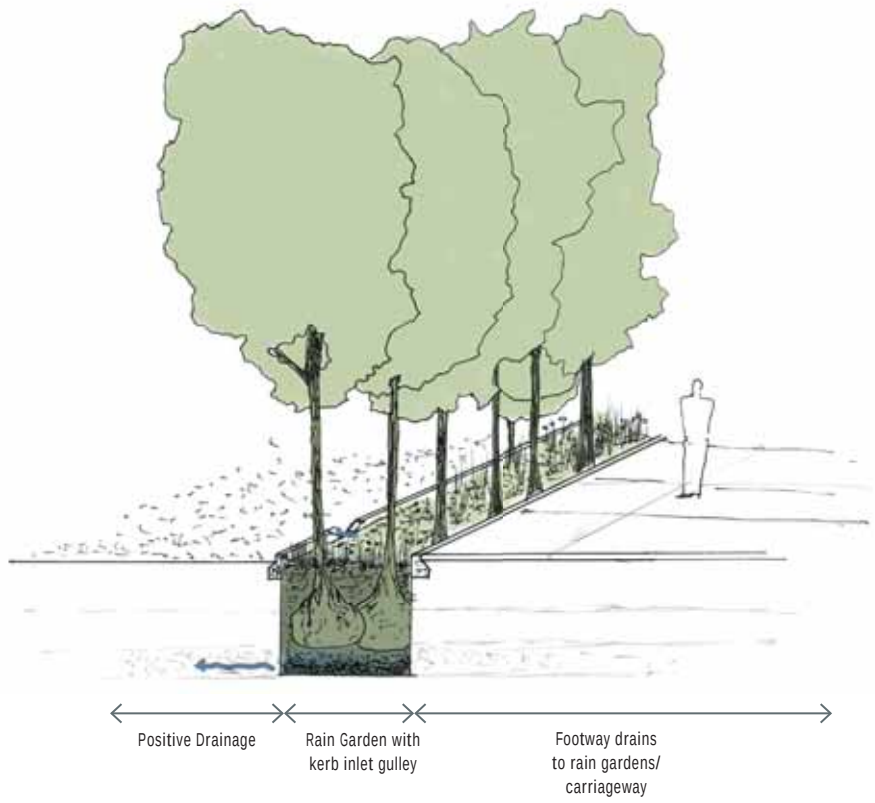
Rain gardens will be present at or adjacent to 'special' buildings . They will be a minimum 800mm wide and will collect run-off from roof and adjacent footways. The finishjed surface of the rain garden (the soil level) will be 100mm below the adjacent finishes in order to allow sufficient 'free-board' (water volume) to collect and hold run-off.

Shottenrasen under construction

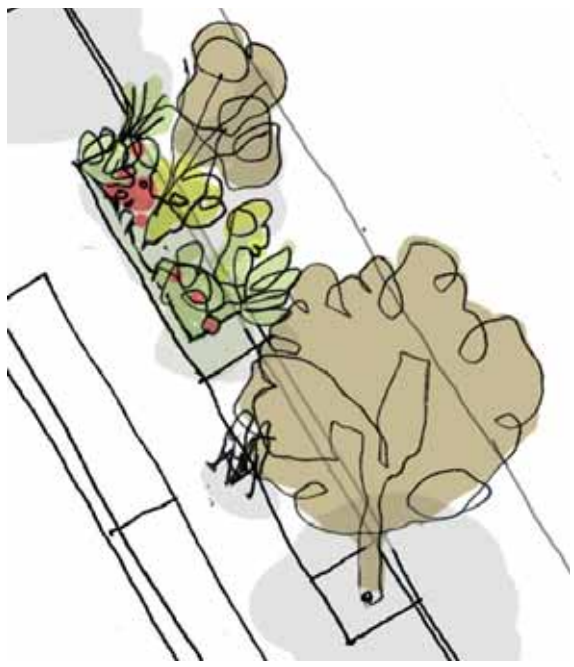
Shottenrasen with colonised surface

9.1.5.3 SURFACES DESIGN

Surfaces for parking areas will be permeable, this may be a permeably jointed, unitised paving system or a Shottenrasen, a stabilised gravel surface which is permeable.



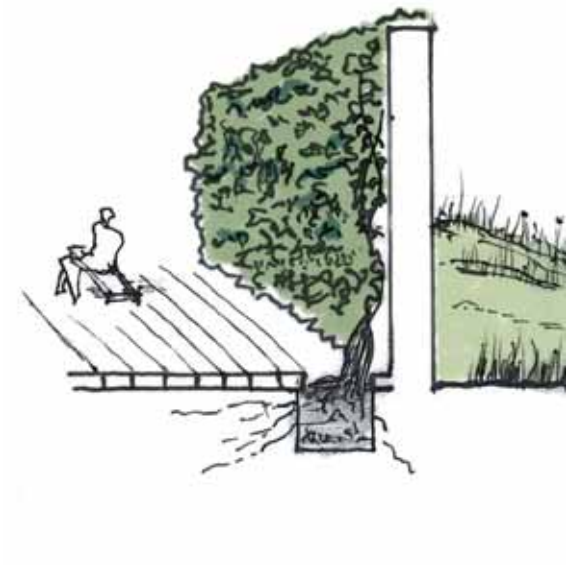
Below ground tree planting volume equivalent to entire parking space with kerb inlet gulley and positive drainage.



Mass street tree planting

9.1.5.4 STREET TREES

Street trees always occur on the upslope side of the street and are to be grouped into car-parking bay sized tree pits. Tree pits will be a minimum of 1.9metres wide, 5.5metres long and 1.5metres deep. The pits will have a kerb inlet gully to accept carriageway run-off and the topsoil level will be set 100mm below the adjacent footway in order to accept footway run-off. Tree pits will be positively drained and tree anchoring will be by mass tree planting grid.

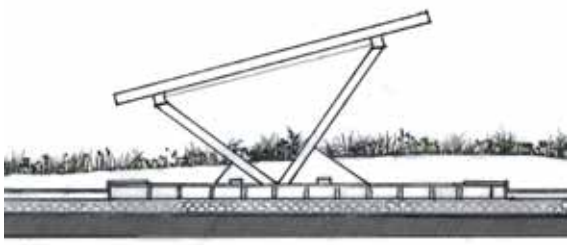


Green wall section

Climbing green wall

9.1.5.5 GREEN WALLS

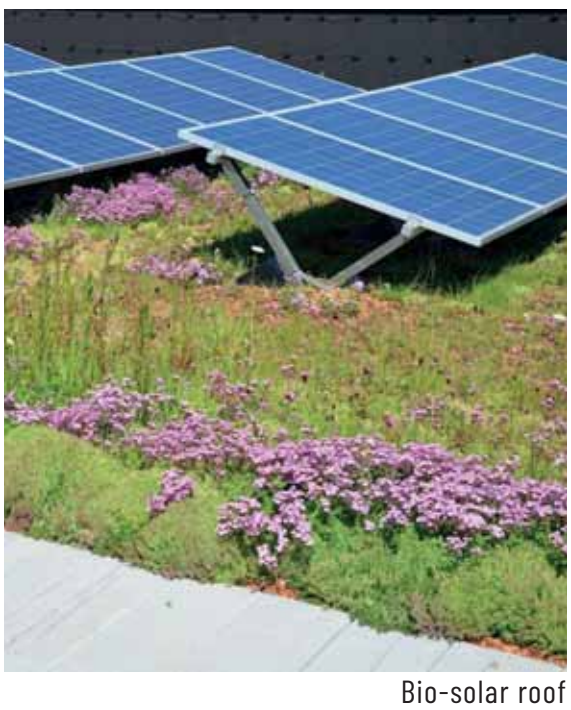
Little Haldens will use climbing green walls only; no engineered green walls will be used. Climbing green walls use climbing plants planted into the ground and are far less susceptible to climate change, or technical failure of an irrigation system.



Bio-solar roof section

9.1.5.6 GREEN ROOFS

Bio-solar – A minimum of 20% of roofs will be green and a similar proportion will host photo-voltaic panels. The roofs will be designed as open mosaic habitat using thanet sands/ ceramic arisings together with subsoil taken from the site.



Bio-solar roof

It is intended that the delivery team will work with Chiltern Rangers, BBOWT, the Chiltern Society and others will be used to collect chalk grassland species seed from the SSSI in the Gomm Valley and a minimum of four other sites within the Chilterns. These seeds will be used to grow the green roofs at Little Haldens.

Wet roof

Flat Green Roofs – The flat green roofs will vary in depth between 80mm and 200mm.

Pitched Green Roofs – Pitched green roofs will be planted using wet species at the eaves and drier species towards the ridge line - this method ensures that the soil conditions of a pitched roof are acknowledged in the design of the planting, maximising robustness and minimising maintenance.

Bike parking shelter with green roof

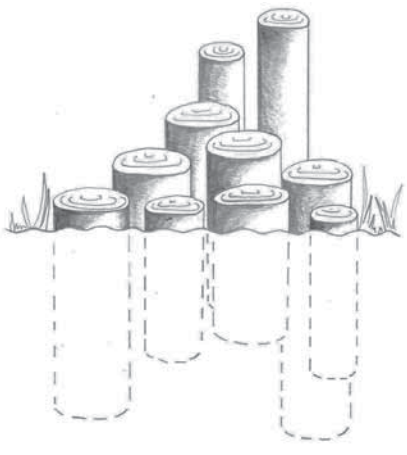
Flowering lawn

9.1.5.7
SMALL BUILDING HABITAT CREATION

Ancillary building such as secure bike parking shelters, bin stores and sub-stations will have green roofs. 20% of them will also have integrated vertical invertebrate habitats.

9.1.5.8
BACK GARDEN HABITATS

Back gardens have the potential to high biodiversity value, however there will be a degree of non-native planting through residents personalisation. All back gardens of houses that are larger than 30m2 will have at least 10m2 of flowering lawn which will be planted with a species mix of at least 20 native grassland plants.



Beetle loggery sketch

Beetle loggery

Bee brick

9.1.5.9
INVERTEBRATE HABITATS

Standing deadwood - This offers above and below ground invertebrate habitat and will be left in situ or integrated into swales or other inaccessible structural planted areas as well as within slip parks.

Bee bricks will be integrated into 10% of buildings.

Bird and bat boxes are not proposed in the urban areas of the site - the wider landscape offers sufficient habitiat for birds and bats.

9.1.6

TREES, HEDGEROWS & PLANTING

Trees and hedgerows are one of the main existing landscape components in the Gomm Valley. The illustrative scheme shown below describes the primary structural landscape types and the location of these.

Opposite is described in some detail species that are desirable and those that will be prohibited in the Gomm Valley palette.

Tree strategy diagram

9.1.6.0

TREE STRATEGY

The strategy for the arrangement and composition of the tree mix is central to the landscape proposals. This strategy identifies the continuity of hedgerows and woodlands, and defining new habitat links an illustrative version of this design is shown in the diagram above.

Target Plant Species

A number of rare or at risk plants have been recorded historically in the surrounding area. The proposed habitat creation will aim to provide the conditions suitable for these species and encourage their spread onto site:

- Dwarf Spurge - a near threatened species typically found in light calcareous soils and last recorded in the arable field margins of Gomm valley in 2008.
- Corn Spurrey - a nationally vulnerable species found in light sandy soils. This species was also last recorded in the arable field margins of Gomm valley in 2008.
- Basil Thyme - a species of principal importance typically found on bare or rocky ground and dry calcareous soils.
- Chiltern Gentian - a nationally scarce local biodiversity action plan species typically found on coarse chalk grassland.
- Sainfoin - a near threatened local biodiversity action plan species found on grassland and bare places, mostly on chalk and limestone.


Dwarf Spurge


Corn Spurrey


Basil Thyme


Chiltern Gentian


Sainfoin

Invited and encouraged

Ornamental Planting of Wildlife Value

Although the majority of planting will be native, it's important to note that many non-native species are also of value to wildlife whilst providing colourful displays throughout the year. All non-native planting will comprise species of known wildlife value, as listed by the Royal Horticultural Society. The use of block planting of the same species will be avoided in favour of a more diverse mix a species and plant types within any given area. This creates a better structure and subsequently varied micro-climates, supporting a greater diversity of invertebrates. Extensive use of evergreen species will also be avoided, as this can be detrimental to biodiversity.

Prohibited plants for the public areas of Gomm Valley

As previously mentioned, the majority of planting will be native and plants on the DEFRA invasive species list will be avoided. However, a number of plants are particularly damaging to ancient woodland and chalk grassland, and are frequently incorporated into urban landscape planting. These are as follows and will not be used in any of the structural planting or grassland areas.

- Cotoneaster species - The berries of these species can be spread throughout the landscape by birds and are particularly damaging to chalk downland habitats.
- Virginia creeper/false Virginia creeper - These climbers can rapidly spread throughout scrub and hedgerows, competing with the pre-existing species for water, sunlight and pollination.
- Variegated yellow archangel - This cultivar of a native ancient woodland indicator, is very aggressive in its spread and can dominate the ground flora.
- Rhododendron species - These species are a problem in many UK woodlands, rapidly spreading through the understorey, and shading out the ground flora, as well as influencing the ph of the soil.
- Montbreta (Croccosmia croccosmifolius) - This bulb species is particularly invasive along hedgerows and woodland edge, dominating the ground flora.
- Three cornered garlic - Another invasive of woodlands that can dominate the woodland floor.
- Cherry laurel - A commonly planted species that can spread into woodland having similar effects to rhododendron in that it shades out the ground flora.
- Snowberry - Another invasive species of woodlands that can dominate the ground layer.
- False acacia - This species can be invasive in unmanaged open mosaic sites and its nitrogen fixing root nodules can lead to eutrophication of the surrounding soil.
- Spanish bluebell - A common planted bulb species that is detrimental to native bluebell as it can hybridise with them and outcompete the native strains.


Cotoneaster


False Virginia Creeper


Yellow archangel


Rhododendron


Montbreta


Three cornered garlic


Cherry laurel


Snowberry


False acacia


Spanish bluebell

Prohibited

9.1.7

URBAN PUBLIC REALM TYPOLOGY MATRIX

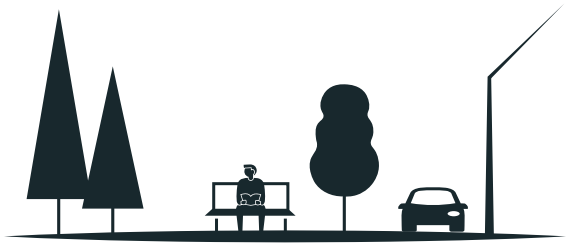
Urban public realm in the masterplan has been developed as a matrix of typologies which can be deployed in the various villages as required.

Public realm typology diagram

9.1.7.0

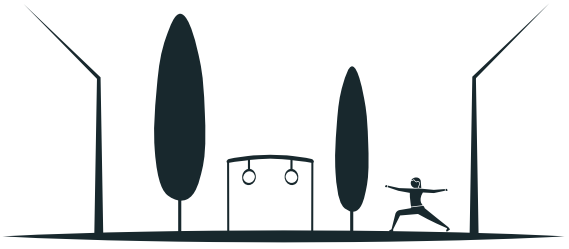
PUBLIC REALM STRATEGY

The plan above shows the general distribution of the urban public realm components within the masterplan. The following page shows the matrix of typologies with a description of the various elements. These elements are described in more detail in the village chapters that follow.



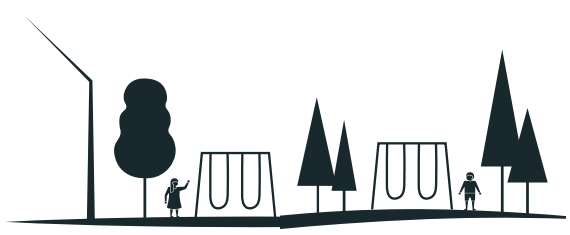
9.1.7.1
LOCAL SQUARE / SWITCHBACK

Local Squares occur at intersections. These are predominately hard surfaces with some soft landscape, they incorporate bus stopping points, electric cycle and car charging points. A change in surfaces (with a lower kerb) defines the space and encourages vehicles to slow down. SUDS features manifest in squares.



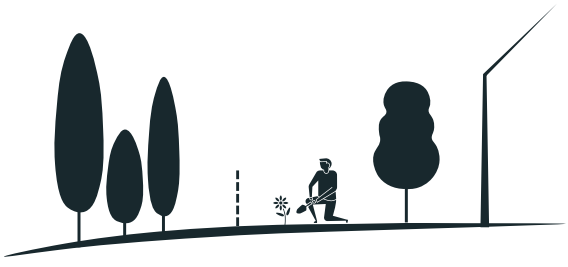
9.1.7.2
SLIP PARK

Spaces that are resultant from the winding geometry of the Ashwells Lane, these spaces include an outdoor gym for exercise, spaces for growing, an orchard, irrigation points and may be accessed by crossing a swale that captures water for irrigation. These spaces may also include a community shed that stores additional gym and gardening equipment for group use. Furniture will include ecology objects, insect hotels, picnic tables and barbecues.



9.1.7.3
LOCAL AND WOODLAND PLAY

Local play space within the villages will be of a more urban character. Woodland play space will be located in new and old woodland planting and hedgerows with seating up-slope parents can watch their children take advantage of topographic play and play in trees.



9.1.7.4
BACK GARDEN

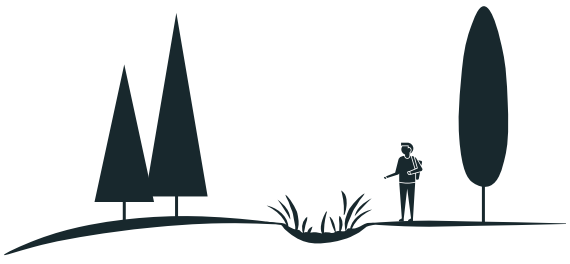
Back gardens can host many species of flora and fauna. Planted initially by the developer they will be personalised and diversified by residents. Native and non-native species can have complementary value in biodiversity.

9.1.7.5
BACKYARD ALLOTMENT

Back gardens and communal courtyards open out into community allotments, creating private, shared and socially connected growing space right outside your kitchen window.

9.1.7.6
GROWING SLOPE

In support of the 'abundant green' principle growing space will be introduced into the project wherever possible. The topography of the site lends itself to growing terraces where raised beds, orchards and greenhouses can be aligned to catch the best aspect.

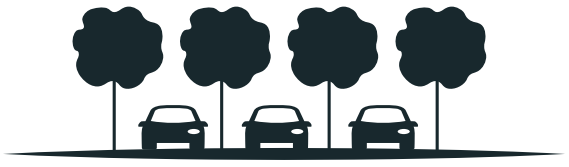


9.1.7.7
SWALE/POND

Swales occur in key public spaces as a visual illustration of the drainage system but also as a means of softening public realm and increasing biodiversity.

9.1.7.8
VIEWING GALLERY

The hairpin/switchback geometry of the streets in the Little Haldens proposals offer opportunities for views across the Gomm and Wye valleys. These views can vary in character from sweeping panorama to glimpsed and obliques views. This experience serves to heighten residents and visitor's experience of the valley.



9.1.7.9
PARKING COURT

Parking courts are present on the street in a number of locations, they afford opportunities for growing, communal recycling, cycle parking. They also offer opportunities for greening and in future, as car use reduces, bringing woodland and hedgerow character right into the street, close to homes.

9.1.8

BOUNDARY TREATMENTS

Boundary treatments in the landscape fall into two catagories, those around private gardens and those around landscape features. Those around the edges of private gardens are hit-and-miss brick, solid brick or hit and miss fencing. Boundaries to the tree belts and semi natural grassland and ecologically sensitive areas are sheep-proof post and rail fencing. The diagram below illustrates where these fence types occur.

Brick Boundary Wall

Hit & Miss Brickwork

Hit & Miss Fence

Post & Rail Fence

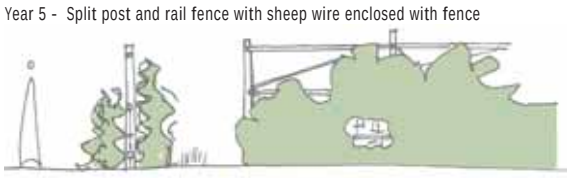
KEY

- Tree belt & semi natural grassland boundary
- Private Garden Boundary
- Ecologically Sensitive Area Boundary

Year 1 - Split post and rail fence with sheep wire

Section Elevation

Year 5 - Split post and rail fence with sheep wire enclosed with fence



Section Elevation

Tree belt & semi natural grassland boundary

Year 1 - Split post and rail fence with sheep wire

Section Elevation

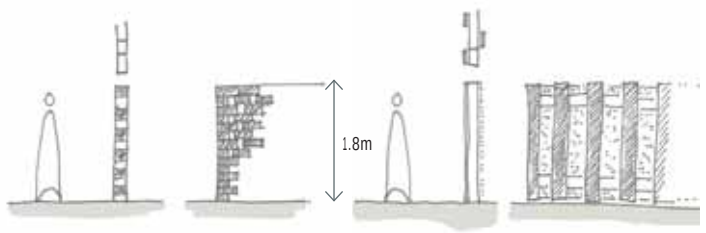
Year 5 - Split post and rail fence with sheep wire enclosed with fence

Section Elevation

Ecologically Sensitive Area Boundary
sketch section

Hit & Miss Brick or Full Brick Wall

Hit & Miss Fence



Section Elevation Section Elevation

Private Garden Boundary
sketch section