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5.4 Scale, form and distribution

The diagram, right, and the 3D block model below, show the distribution of the housing into discrete perimeter blocks which are irregular in their form and are at varying densities. Whilst most of the development is 2 storeys there are some areas of 2.5 storeys, (using the roof space for additional accommodation), and some elements are single storeyed (garages, the pavilion, and possibly some single storey houses closer to the southern boundary, depending on the precise design of the houses themselves).

These perimeter blocks are arranged to provide surveillance of the surrounding streets and lanes and a different character within each, relevant to the Morphology Study on pages 29 and each related to its landscape context. They are also arranged to allow some views of the Church and to respect the results of the LVIA study. The main access routes have responded to this form and distribution of buildings so that views are 'presented' sequentially to the pedestrian or car driver to give identity to different parts of the scheme. For example, from the western entrance the 2.5 storey apartments are first encountered against a backdrop of extensive landscape. This frontage (purple on the plan) is the densest part of the scheme and presents a strong frontage onto the major open space in the manner of the High Street in Tenterden. This is quite different from the eastern access where 2 storey buildings create a small square within the framework of the existing mature trees.

Elsewhere on the scheme smaller perimeter blocks at lower density respond to the perimeter landscape of meadow, woodland, water and in some cases orchard. These blocks are more permeable, giving a more diffuse edge, and consist largely of 2 storey houses. They will have a different character from the central area.

In this way, the scale, form and distribution of buildings is integrated with the landscape to provide a strong sense of place overall, but also within the individual parts of the scheme.



Block model seen from the south

Street types

The form and treatment of streets is crucial to the quality of environment created. Principal roads will be adopted with minor roads left unadopted giving more flexibility in terms of treatment and enclosure. The street types emphasise slow speed traffic and are designed as 20mph or less to allow for shared use and cycling, and are based on the Kent Design Guide types. Their grid layout provides for excellent walking and cycling connections whilst permitting appropriate vehicular access. The major access road through the site connects Appledore Road in two places, as recommended by Manual for Streets and the Kent Design Guide. Woodchurch Road is connected through cycle and footpath links. The hierarchy leads down to narrow lanes that allow vehicular access but only at walking pace, similar to existing back lanes in Tenterden and as proposed and illustrated on page 98.

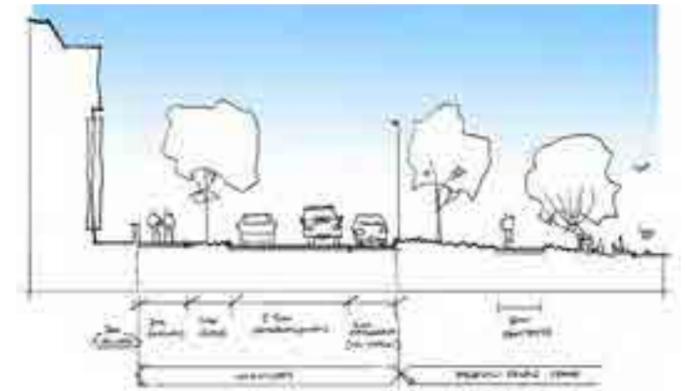


Lane - Mews street

Single track loop road or cul-de-sac, with passing bays allowing fire and refuse access. 15mph design speed with SSD 17m. Direct vehicle and pedestrian access to a limited number of dwellings. Footways 1.2 to 2m wide variable footway, usually on one side only. All parking provided off road within property curtilages or in garages. Kerbs 0-125mm high or may be omitted.

Major access road - Avenue

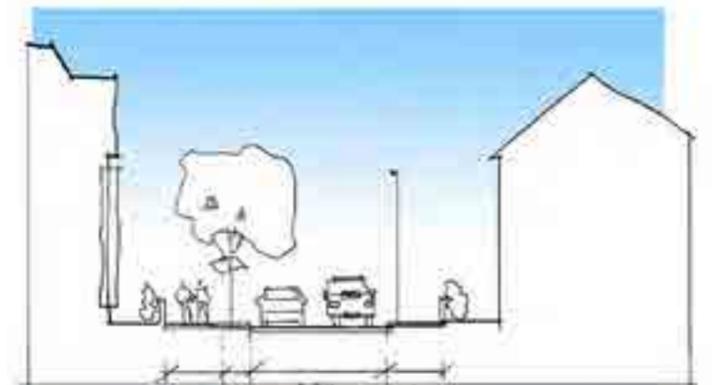
4.8m to 10.5m wide variable width street with access for all vehicles. 20mph design speed with SSD 25m. Provides direct vehicle and pedestrian access to dwellings and links several residential street blocks that loop from it. Footways 1.2 to 3m wide variable. 2m to 3m grass verges with occasional tree planting. Min. 50mm kerb height. Distance between speed restraint features 65m to 70m (tight bends etc). Occasional parallel parking bays in place of verge, 2m wide.



major access road

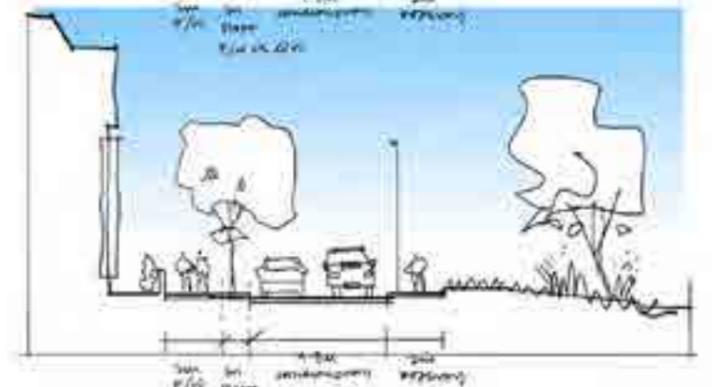
Minor access road - Side street 1

3 to 4.8m wide variable width street (subject to tracking). 20mph design speed with SSD 25m. Road type is looped through road to avoid turning heads. Provides direct vehicle and pedestrian access to dwellings and links several minor that loop from it. Min. 50mm kerb height. Distance between speed restraint features 40 to 60m (tight bends etc). Footways 1.2 to 3m wide variable.

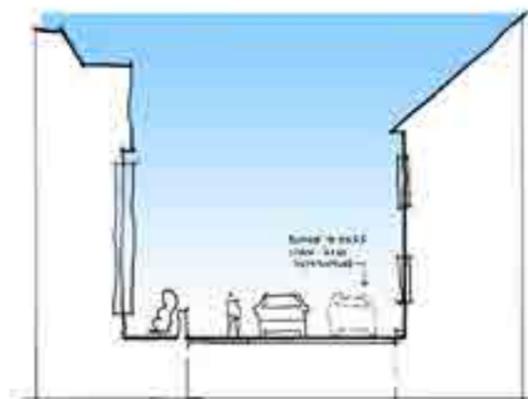


Minor access way - Side street 2

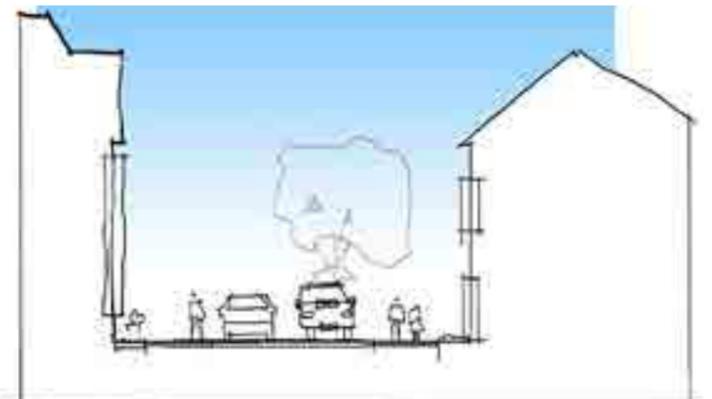
3-4.1m wide variable width street (subject to tracking) allowing fire and refuse access. 15mph design speed with SSD 17m. Serves only essential traffic and does not provide a route that would encourage other through traffic. Gives direct vehicle and pedestrian access to dwellings and links them to other residential lanes or occasionally a shared private drive. Distance between speed restraint features 40-60m (tight bends etc). Footways 1.2 to 3m wide variable. Min. 50mm kerb height On-street parking designed into the layout through localised widening only.



minor access road; above, building both sides and below, building on one side.



lane single sided



minor access way

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5.5 Access

The Transport Assessment carefully assessed the impacts of the development to ensure any adverse highway safety implications are adequately mitigated, including proposals for reducing the speed limit on Appledore Road.

The proposal includes traffic calming measures to assist in formally reducing the existing speed limit of 40mph to 30mph on Appledore Road, creating a safer link for cyclists and ease of crossing for pedestrians.

The opportunities for non-car travel will be promoted through the Travel Plan Statement (TPS). The TPS aims to promote sustainable lifestyles amongst new residents, through reducing the need for travel by private car (in particular reducing single occupancy car journeys); providing non-car mode travel options for local journeys and influencing modal choice.

In line with current guidance, car and cycle parking will be provided within the site and sustainable transport measures will be incorporated as an integral part of the site masterplan. The proposed development will provide a range of new high-quality pedestrian / cycle connections to existing routes. These facilities will provide opportunities for future residents at the proposed development to make local journeys to key local destinations by walking and by bicycle instead of using the private car.

An access for pedestrians and cycles is proposed to Woodchurch Road, between properties known as "Greenways" and "Willow Cottage". This is shown, right. This access point includes an uncontrolled crossing across Woodchurch Road tying in with the existing footpath along the northern side of Woodchurch Road. This location has been carefully chosen to ensure it is in a safe location on the road, and provides an alternative route towards the northwest to the existing PROW Footpath (AB12).

Pedestrian, cyclist and vehicular access is proposed to be taken from two locations on Appledore Road; one from land adjacent to No. 13 Appledore Road, and another from the land currently occupied by the playing fields. The two site accesses are illustrated right, respectively. Visibility splays at each site access are suitable for 30mph traffic speeds.

A suite of traffic calming measures are proposed along Appledore Road which will assist in the promotion of walking and cycling as a travel mode.

These traffic calming measures include:

- four one-way priority shuttle working sections
- a zebra crossing located west of Limes Close
- a 30mph gateway feature to the east of the junction with William Judge Close.

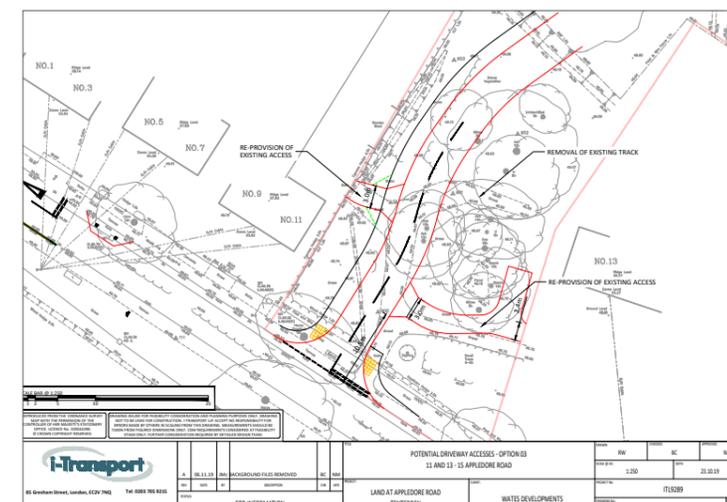
Traffic Impact

A multi-modal trip generation analysis has been undertaken for the residential element of the site based on existing sites from the industry standard TRICS database, as well as a comparison to the trip rates used in the consented Tilden Gill Road Transport Assessment. The trip generation of the proposed sport pitches has been based on a first principles assessment. The proposed development traffic distribution has been based upon Census data, in particular using journey to work data.

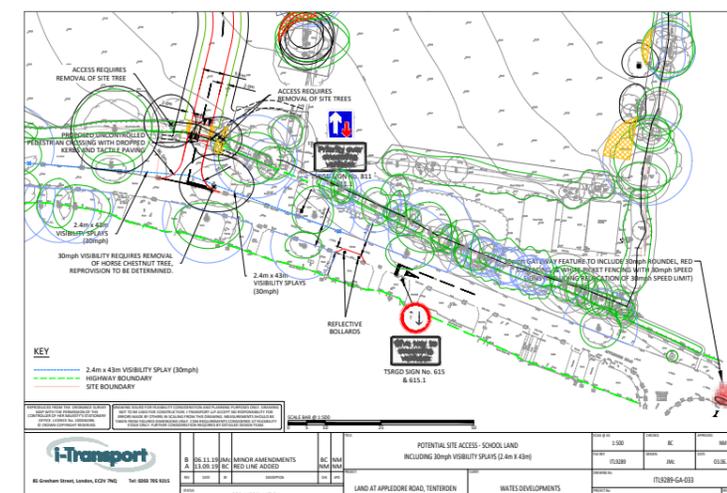
Highway capacity assessments were undertaken for a number of existing and proposed junctions, for which the extent was agreed with KCC highways during the pre-application scoping discussions. The assessments included two future years 2021 and 2024, which both included separate assessments with committed developments (TENT 1, TENT 1B and Tilden Gill Road schemes).

The junction capacity assessments show that each of the junctions assessed have available capacity in the future years, both with committed developments/improvements and the proposed development, and there will be minimal additional queuing. Therefore, no off-site junction capacity mitigation measures are required.

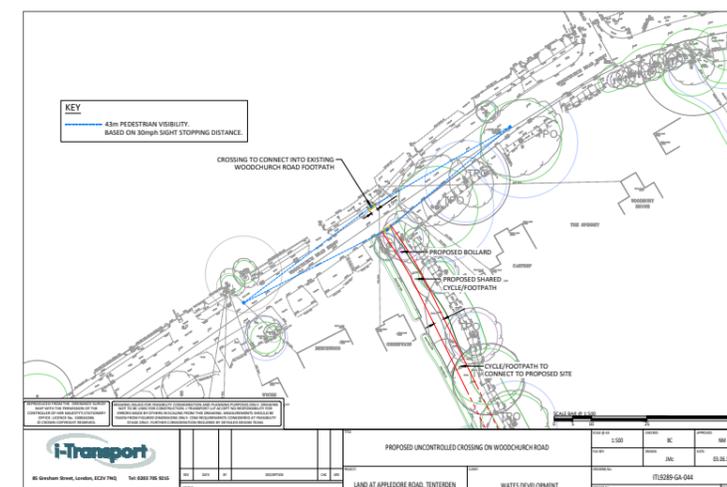
The site is in a suitable and sustainable location for new homes and is conducive to walking to a range of local facilities in the town centre and local bus stops.



proposed western access



proposed eastern access



proposed uncontrolled crossing on Woodchurch Road

5.6 Movement patterns



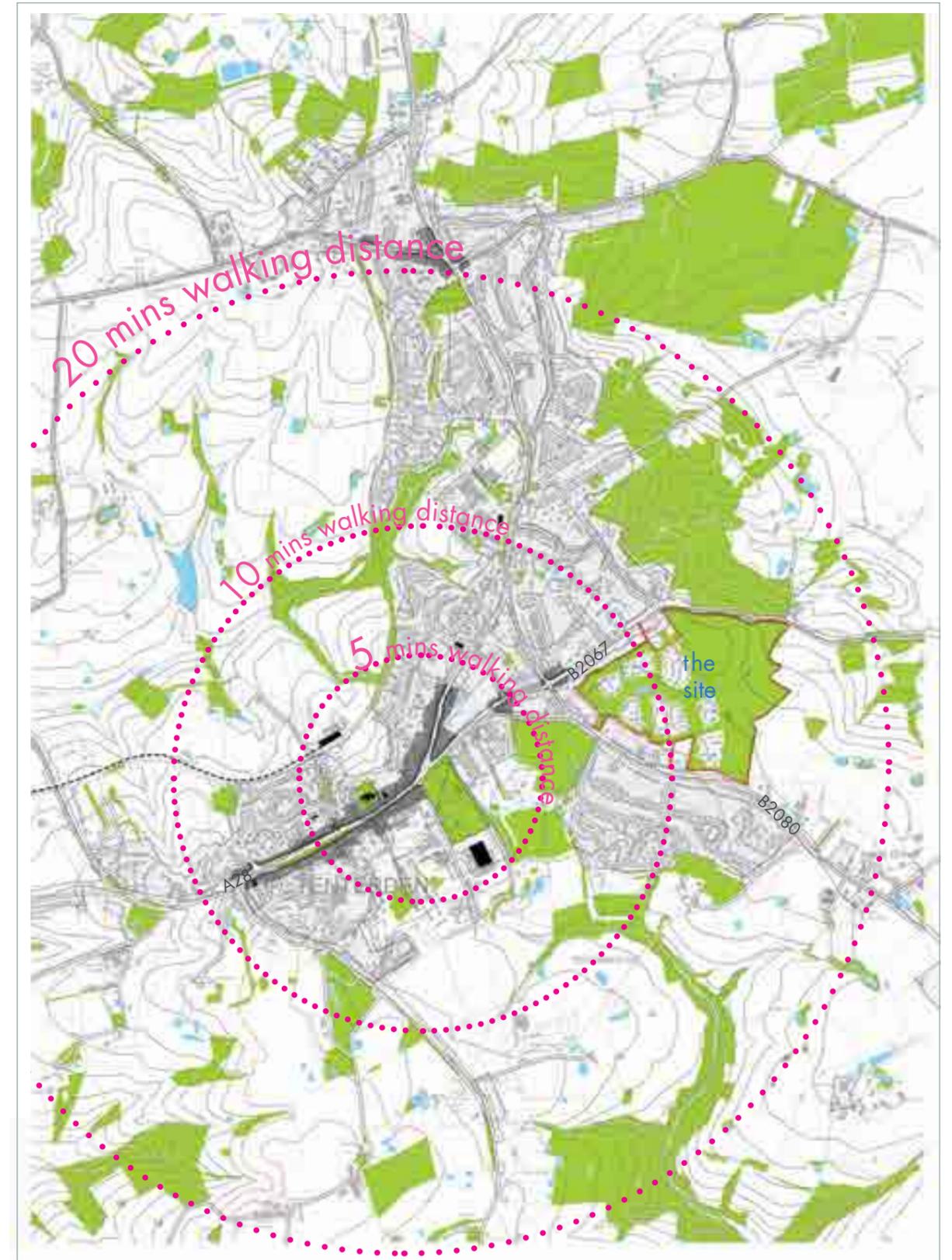
refuse vehicle routing



emergency vehicle routing



road hierarchy



walking distances from Tenterden Town Centre

5.6 Movement patterns & parking

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Parking

The proposals will encourage the use of alternative transportation modes whilst at the same time minimising the potential for overspill parking onto the local highway network.

Guidance for car parking for residential development is contained within the Ashford Local Plan (Policy TRA3a), the Ashford Borough Council Residential Parking and Design Guidance (2010) and the Kent and Medway Structure Plan, Kent Vehicle Parking Standards (July 2006) SPG 4. As the residential element is in outline, the car and cycle parking provision is proposed to be calculated and agreed as part of future reserved matters applications. The guidance and standards (and any subsequent replacements) will be taken into account when calculating the number of car and cycle parking spaces for the

residential element of the development against the final schedule of accommodation at the site.

The cycle parking will be provided in garages, and individual cycle storage boxes or sheds in the rear gardens of those dwellings that do not benefit from a garage.

In general terms, the intention is that parking is assimilated into the scheme different ways, all designed to be an intimate part of the residential environment. Whilst not designed in detail, the diagram below shows how parking could be incorporated in the manner illustrated on this page in this small scale layout, with an unadopted road.



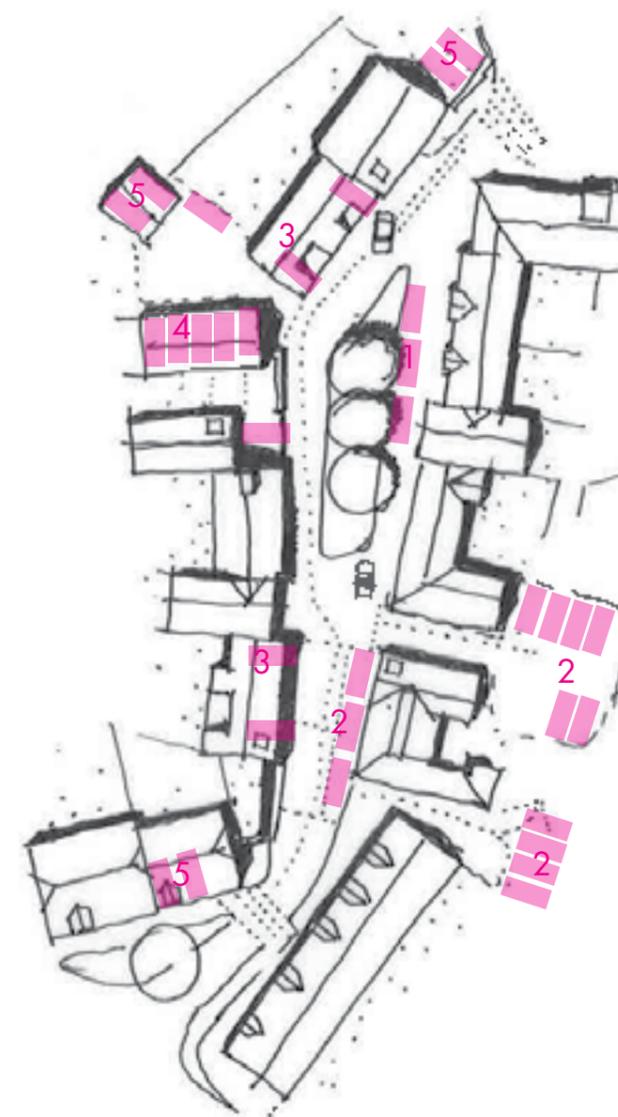
informal residents' parking



visitor parking



informal allocated parking



schematic parking distribution



undercroft parking



parking barn



small scale Kentish Barn as parking barn prototype



integrated garage and 'in garden' parking

5.7 Treatment of water

As agreed with the drainage stakeholders all new surface water flows must be designed to replicate the existing greenfield runoff rates in line with current best practice. As such all proposed sustainable drainage systems (SuDS) to serve the development site have been modelled on this basis, with new swales, ditches, ponds, porous paved areas and attenuation basins to provide the required attenuation for the development.

The proposed development takes into consideration the current biodiversity habitat provided by these surface water drainage features and as agreed with Kent County Council acting as the Lead Local Flood Authority (LLFA). The retention, addition and improvement of all of these features will ensure that the proposed development will offer opportunities to enhance the habitat across the development, whilst also providing amenity space.

The LLFA has advised that the surface water management objectives for the proposed development should include within its design the provision of new swales, ditches, ponds, porous paved areas and attenuation basins to accommodate the required surface water storage for the development in accordance with the design criteria outlined in the CIRIA C753 document The SuDS Manual.

Remedial works and repairs will be carried out to the existing surface water sewers in Appledore Road to improve their hydraulic performance. These sewers are known to be in a poor state of repair and are thought to have contributed to the historical surface water flooding that is known to have occurred previously in this area.

Details of the proposed surface water general arrangement can be found on RSK drawings: 133187-RSK-C-ALL-05-03-01 & 05-03-02.

The introduction of these new SuDS systems combined with the repairs to the existing sewers in Appledore Road will ensure that the risk of flooding in both the proposed development site and the existing properties in Appledore Road is significantly reduced.



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5.8 Biodiversity

Wates Developments is committing to an overall gain in net biodiversity across the site. Early discussions with KWT on the proposals and a commitment to net biodiversity gain allowed an agreed set of collaborative principles to be formed between the parties. These principles outlined that net biodiversity gain would be achieved through the creation of an agreed ecological enhancement strategy and Landscape and Ecology Management Plan (LEMP) which would form part of a comprehensive residential planning application. A series of meetings on site and discussions on the proposals have evolved the enhancements and management proposals which now form part of this submission. This has informed the proposals so that biodiversity is not merely protected but also enhanced through appropriate treatment as part of the project creation, and through long term appropriate management for the open space and Country Park to the east, the closest point to the Area of Outstanding Natural Beauty.



gains for wildlife

- habitat creation for a wide range of species - invertebrates, reptiles, amphibians, birds and small mammals
- extensive wildflower meadows including pollinator highways
- existing ponds enhanced for GCNs
- creation of network of ponds and water courses including 4 new ponds for GCNs
- hedgerow and tree network enhanced, managed and linked to new shaws, wood pasture and open woodland
- creation of traditionally managed community orchards and 'edible' trails



improved health & wellbeing

- potential for outdoor classrooms and community/education facilities
- nature/cultural history trails with interpretation
- enhanced Public Right of Way network connecting communities to the countryside
- natural and formal play, green gym, walking, cycling and outdoor sports facilities



connectivity

- the Country Park connects to the open space network permeating the scheme
- Country Park complements and links the habitats in Knock Wood, the High Weald AONB and the Low Weald Biodiversity Opportunity Area



easy access to green space

- new pedestrian and cycle routes create an extensive network connecting town and new community through open spaces and Country Park
- a variety of experiences through the greenspaces; formal and natural play; accessible walking routes through semi-natural land with panoramic views to the wider countryside
- nearly three quarters of the site retained as green space



effective water management

- a comprehensive network of wetlands, ponds and swales controlling surface water and enhancing biodiversity
- comprehensive SuDS including porous paving and swales in residential areas where feasible
- use of natural features for attenuation, achieving greenfield discharge rates

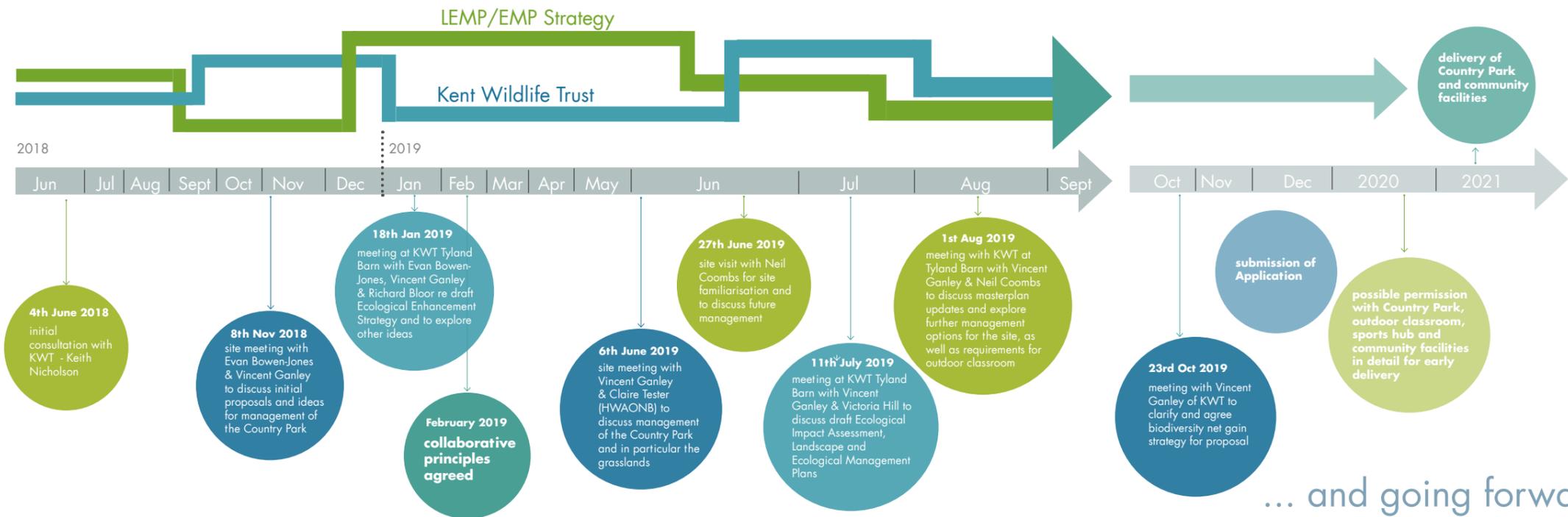


Kent Wildlife Trust

Wates Developments have consulted and signed a Collaboration Agreement with Kent Wildlife Trust, recognising the opportunity the site offers for biodiversity enhancement through early engagement.

consultation with KWT

timeline to date ...



... and going forward

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Ecological enhancement strategy

General Principles

- the proposed residential development will be set within a network of interlinked multi-functional green infrastructure focussed around retained habitats and connecting to the wider wooded habitats of Knock Wood, Hales Place and the High Weald AONB. The Country Park in the east will provide an extensive area of informal open space on the countryside edge
- a comprehensive landscape and ecological enhancement and management programme will work with the existing features and site conditions, aiming to maximise the benefits for biodiversity, landscape character, visual amenity, cultural heritage and health and well being
- the site could contribute to the Kent Nature Partnership Low Weald Woodland Biodiversity Opportunity Area (BOA) enhancing wildlife grasslands, adding to the ponds network that supports Great Crested Newts (GCN), and providing traditional orchards and small areas of interconnected woodland
- lighting - lighting will be restricted - dark corridors will remain through the central green corridor, along tree lines, at the site edges and within the Country Park

Other features

- *wildlife tunnels to connect habitats under new residential roads for amphibians, small mammals and hedgehogs to disperse*
- *within the development, swift bricks, house sparrow/starling boxes and bat boxes will create new nesting and roosting opportunities*

Specific features

- 1 *extensively managed neutral to slightly acid wildflower meadows and grasslands to increase diversity of plant species and create habitat for invertebrates, reptiles and amphibians including pollinator highways*

The management regime within the Country Park will include 'conservation cutting' and, if necessary, minor interventions, such as scarification and 'green haying' to improve plant species richness. Management regimes will be reviewed every 5-10 years to ensure these respond to changing needs of a maturing landscape and biodiversity considerations.
- 2 *existing acid grassland areas retained and managed*
- 3 *existing ponds enhanced for Great Crested Newt (GCN) and other aquatic wildlife and interlinked with new pond/wetland network as well as terrestrial habitats which support these species*
- 4 *new ponds, wetland and seasonally dry habitats for water attenuation - functionally independent from existing wetland system but habitats complementary. New ponds in Country Park as GCN habitat used also for GCN translocation during construction*
- 5 *traditional Kentish fruit trees/cobnut orchards - native wildflower meadows beneath for wildlife habitat; community 'wild foraging'. Could be linked to 'edible trails' taking in native hedgerows and woodland*
- 6 *woodland edge and shaws used to enhance field boundaries. Laid hedges could be used to enhance some existing hedgerows and/or to control access*
- 7 *new open native woodland with grassland glades - could be managed as coppice in places*
- 8 *new native hedgerows*
- 8 *learning and community engagement - outdoor classroom to be the focus of community engagement, aiming to reconnect the community to their environment and to foster understanding and a sense of ownership. Features throughout the site could include log piles, nesting boxes, dipping decks, nature trails and interpretation boards (illustrating landscape, ecology and cultural heritage) & natural play trail*

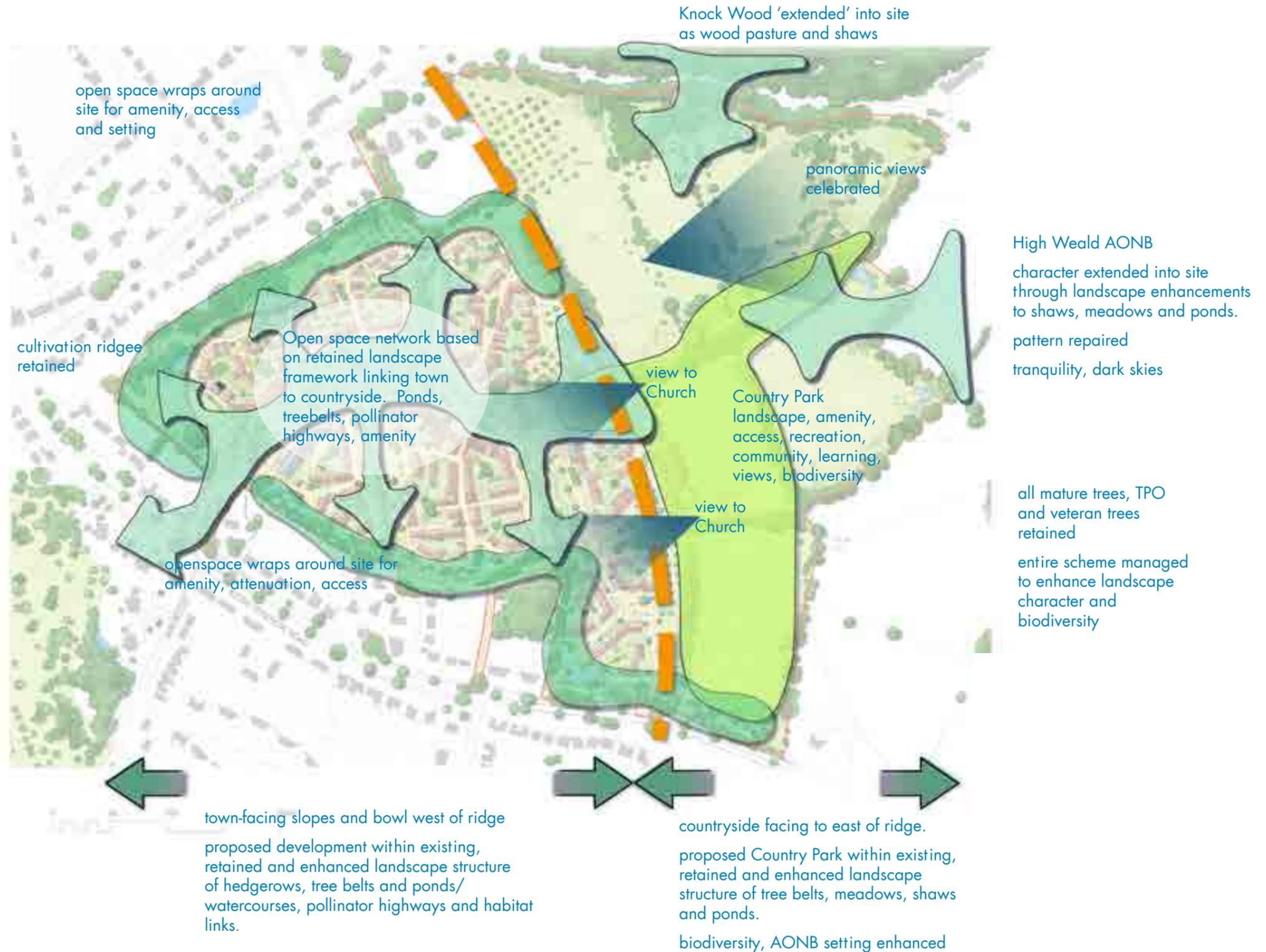




View looking from south-east part of site back towards the mature tree belt that separates the Country Park from the proposed sports fields and community hub. The residential development will lie beyond the hub.

5.9 Landscape and environmental management

The implementation of the masterplan assumes that it is underpinned by strong landscape and management principles. These are shown diagrammatically here.



5.9 Landscape and environmental management

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Western residential development area - landscape strategy

Town facing slopes and bowl west of ridge developed for housing within retained and enhanced landscape structure of hedgerows, treebelts, ponds and water courses.

- mature trees, TPOs and veteran trees retained within open space
- mature tree belts along historic field boundaries retained
- existing ponds and watercourses retained and enhanced
- habitats and habitat connectivity enhanced through open space with wildflower meadows providing pollinator highways and visual interest
- open spaces include paths and cycle ways connecting the site to the town and providing extensive public access including to the Country Park
- interpretation provided to indicate key features such as veteran trees, High Weald landscape, biodiversity, heritage fruit, nature trails etc.
- lighting to be kept to minimum requirements - see lighting strategy





- 1 proposed community orchards and cobnut platts
- 2 proposed SuDS wetlands including new ponds and swales for attenuation
- 3 existing ponds functionally separate from SuDS enhanced for amenity and biodiversity
- 4 proposed ponds for translocated GCNs, providing permanent extended and enhanced habitat
- 5 natural play trail - see detailed plans
- 6 LAP within residential areas
- 7 open woodland and woodland shaws to enhance landscape structure and habitats
- 8 species rich (neutral to slightly acid) meadows within wood pasture and open areas managed for biodiversity
- 9 mown pitches, natural turf - amenity grassland

Community Hub
 outdoor classroom, dipping
 decks, orchard and storage for
 learning and management

sports pitches, pavilion and car
 park within retained landscape
 structure

Country Park - landscape strategy

Countryside facing ridge and slopes east of ridge - proposed Country Park, community hub and sports pitches within retained and enhanced landscape structure of tree belts, wood pasture, meadows, shaws, ponds and water courses.

- mature trees and veteran trees retained and enhanced within meadows
- mature tree belts along historic field boundaries retained and lost field boundaries notionally restored through new tree planting
- existing ponds and watercourses retained and enhanced
- habitats and habitat connectivity enhanced throughout Country Park including extensive lowland meadows
- informal paths provide extensive public access interconnecting with existing PRoW which will be improved
- interpretation provided to indicate key features such as veteran trees, High Weald landscape, biodiversity, heritage fruit, nature trails etc
- outdoor classroom, natural play, nature trails, picnic areas and orchards enhance opportunities for community engagement and learning
- the Country Park is a 'dark sky' environment with no proposed external lighting

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5.11 Sport

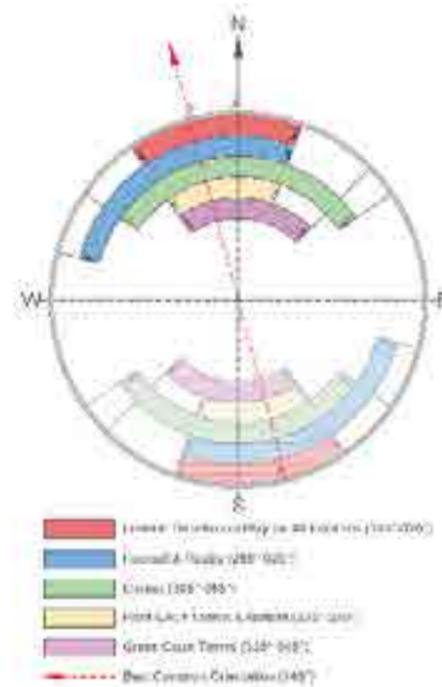
A prime consideration is that pitches needed to confirm with Sport England requirements in terms of careful design, balancing the needs for access, landscape quality, orientation, layout, gradients and drainage, and in terms of proximity to the pavilion, parking and pedestrian and cycle routes.

Technical requirements are set out in the supporting document.

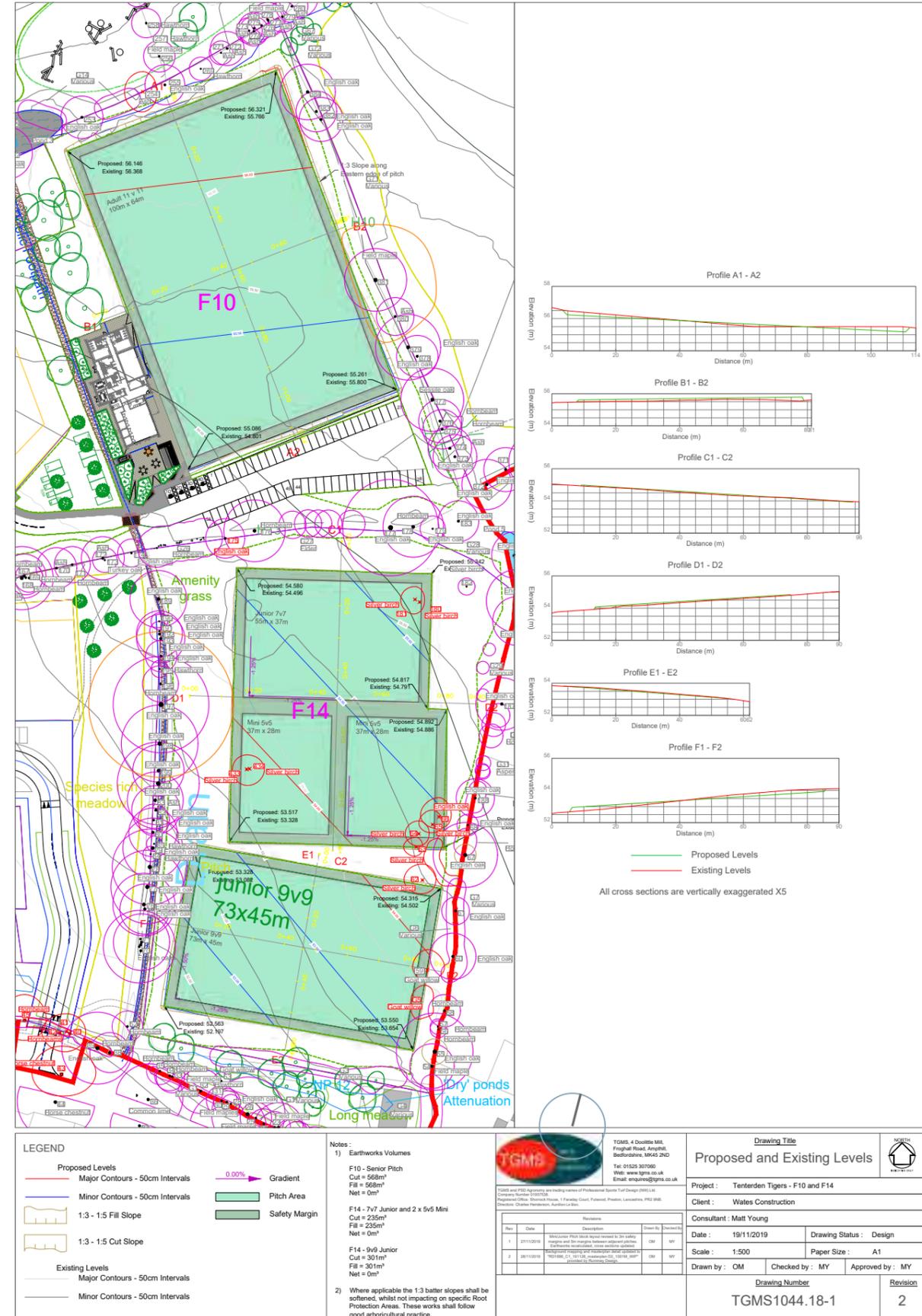
The layout of the 5 pitches has been organised to cause minimum visual impact on the AONB, to give maximum convenience near parking and the Public Right of Way, to allow the pavilion to be located beside the seniors pitch but with views of the juniors pitch from the south-facing terrace. The car parking, including for mini-buses is located centrally for all pitches. A major constraint was existing trees whose root protection areas needed to be respected.

The resulting layout together with the Sport England optimum pitch orientations is shown on this page, together with proposed and existing levels. It can be seen that the pitches have been carefully 'moulded' into the landform to optimise cut and fill and to make the pitches appear, so far as possible, as part of the landscape.

The size of the pitches and the run-off space have been designed to Sport England's standards.



Optimum pitch orientations (Sport England).



The sports pitches layout in relation to retained trees; purple lines denote root protection areas as depicted on SJA Arboricultural Impact Assessment drawings.

5.12 Architectural form and materials

This is an outline Application and therefore comments on form and materials must be treated in that context. However, a great deal of analysis has been undertaken and the comments below take account of that. Further guidance is included in the Quality Charter and Outline Management Statement.

The basic 'building blocks' of the scheme are 2 storey houses in a variety of frontages ranging from 4.8m to 6.2m depending on the size of house and the intended residents. Apartments will be 2.5 storeys tall but their form will be broken. There may be some single storey houses, perhaps suitable for older people. Within this basic form roof pitches should aim to be similar to those which exist within Tenterden itself and so that internal roof spaces can be used. Windows must be placed with regard to overlooking and privacy and to give emphasis to corners, overlook key spaces for security, allow sun into otherwise north-facing facades and to animate repetitive elevations.

The basic Kentish palette of tile hanging, brick and timber, or suitable alternatives, will be deployed to break the scale of buildings where necessary and to provide distinctiveness to specific locations within the scheme. Timber construction gives the potential to locate windows, in a 'random' fashion whereas brick construction requires more rigour. The solid to mass ratio of walls to windows requires careful thought.



Masonry compared to timber frame construction; the mass of masonry tends to produce a more regular form of building than timber framed construction (on the right).

5.12 Architectural form and materials



Character reflection in new development

Simple building forms, 2 and 3 storeys, holes punched in lightweight timber frames, solid brick bases, a variety of 'earth' materials.



reducing scale from 3 to 1/1.5 storeys produces an organic morphology and informal character



Local buildings



New interpretations of local houses using modern methods of construction.



The character of a town is a reflection of building form, materials, grain and density. This can be replicated in modern development without resort to pastiche. The predominant scale of two storeys, sometimes with roof windows or dormers, will be respected. The cross routes 'pattern' typical of many Kent villages, bottom right, is a formative idea in the masterplan; buildings set in informal groups at varying angles with a clear definition between public and private space.



indicative elevation of lower density edge condition



garage walls continued into boundary screens

steeply sloped roofs

enclosing landscape, private and public, unifies the scheme

'barn' houses placed end on to public realm to contain gardens and present strong edge to the access

garages entrances, bin stores and perimeter walls grouped together to form defensible space

potential to break scale of walls by tile hanging or similar

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Detailed Application element: hard landscape materials strategy

Here we convey the paving palette proposed for the detailed element of the scheme, which has been developed where applicable in accordance with Kent County Council's 'Making it happen' design guide and in collaboration with the transport planners.

Although the site is not in the High Weald AONB the palette of materials takes account of the recommendations included in the recent 'Building for the High Weald' design guide.

The diagram overleaf uses block colour to demonstrate the distribution of materials across this portion of the site which features within the detailed application.

The materials shown in this section of the report are indicative only, and communicate the look and quality of the materials and do not specify particular products. We anticipate that the materials will be Conditioned. Specifications for these items will be developed as part of the detail design process.

The Kent Design Guide:
highways (pavement specification)



Building for the High Weald:

Design Guidance for new Housing Development in the High Weald Area of Outstanding Natural Beauty

Illustrative masterplan:

highlighting extent of detailed application area



Extent of detail application area highlighted in green

Refer to enlarged plan, right, for proposed paving strategy

Hard landscape strategy:

The diagram shows the notional placement of materials within the detailed application area of the site.



For more information relating to the highways surfacing refer to i-Transports drawings.

permeable macadam road surfacing. Suitable for fire tender over-run. With precast concrete kerbs



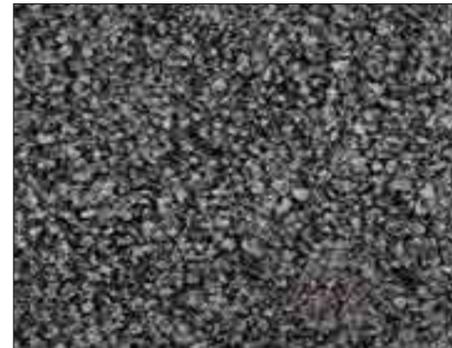
reinforced gravel surfacing for parking bays. Bodpave or similar approved. With Precast concrete edgings



permeable block paving paving on carriageway at crossing points.



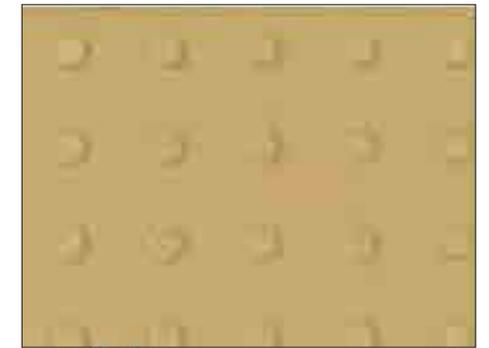
macadam road surfacing. Suitable for fire tender over run. With precast concrete kerbs (Adopted Roads only)



block paving on carriageway at crossing points. (Adopted Roads only)



precast concrete tactile paving slabs at crossing points.



precast concrete slab paving round perimeter of pavilion, with precast concrete edgings.



macadam footpaths with precast concrete edgings.



Public Right of Way. Natural trail/track.



Section 5: The proposal explained

5.1 Integration of landscape and development

5.2 Place-making and lessons from the morphology study

5.3 The masterplan explored

5.4 Scale, form and distribution

5.5 Access

5.6 Movement patterns

5.7 Treatment of water

5.8 Biodiversity

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Lighting and dark skies

How the development is lit is an important consideration, particularly given the proximity to the High Weald AONB and the Woodchurch Dark Sky Reserve to the east.

Safe, practical lighting is to be combined with subtle, accent lighting to create an environment which works for people, wildlife and the environment.

A number of bat corridors crisscross through the site, meaning lighting levels need to be reduced to a minimum in these areas. The idea is to provide compliant lighting levels on the adopted roads with minimal light used on the private streets. A simple timer system is proposed for the private streets which dims or switches off the lights after 23:00.

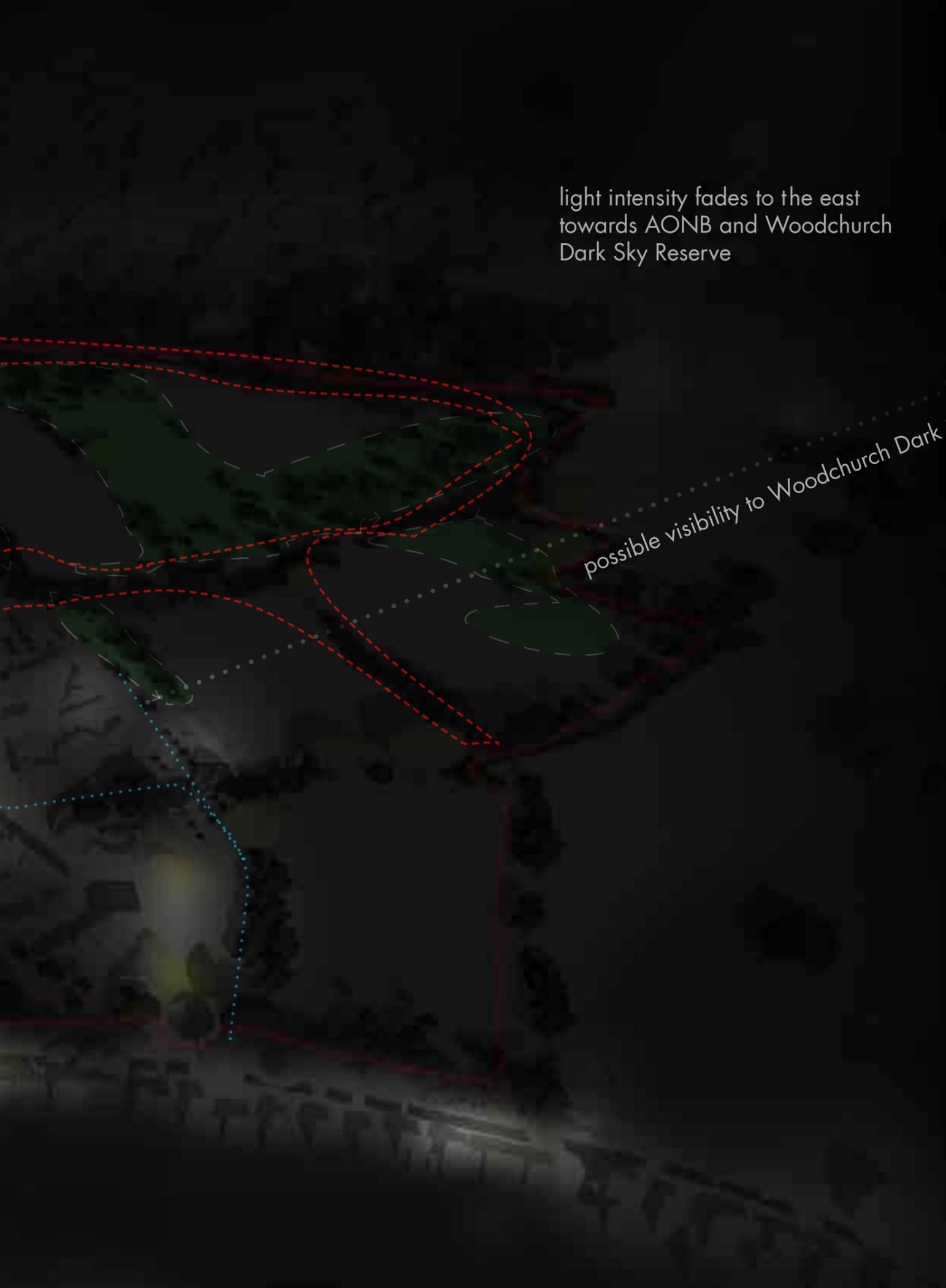
This approach will ensure the development provides safe levels of lighting for residents whilst remaining sympathetic to the surrounding landscape and environment.

The use of hooded lamp fittings aims to minimise light spill and modern LED luminaires will provide energy efficiency and avoid light pollution.

The concept diagram here serves as a template for the lighting design within the development. It demonstrates the proposed intensity and distribution of light across the development, focusing the light where it is really needed, ensuring people's safety and comfort, and minimising light where necessary to avoid any detrimental effects to local wildlife and wider environment. The image provides a concept only and further detailed work will be required at the next stage of the design process to finalise the proposals.

greater light intensity
from west/Tenterden
centre





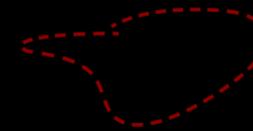
light intensity fades to the east
towards AONB and Woodchurch
Dark Sky Reserve

possible visibility to Woodchurch Dark Skies Area

key:



areas of potential new
planting within the site



area sensitive to bats

private street lighting
(switched off after 23:00)
indicative only subject to
detail design of highways

adopted highway lighting



lighting to public footpath
possibly pv powered

notes:

All new road lighting to be LED designed in accordance with BS 489-1:2003 and BS EN 13201-2:2003

Road lighting to be provided on all new adopted roads, footpaths, cycleways and alternative access links for emergency road closures.

Where possible street lights to be fixed to walls and property boundaries (note: legal easement or wayleave provided by developer)

All adopted lighting design to KCC Kent Design Guide G6 Street Lighting

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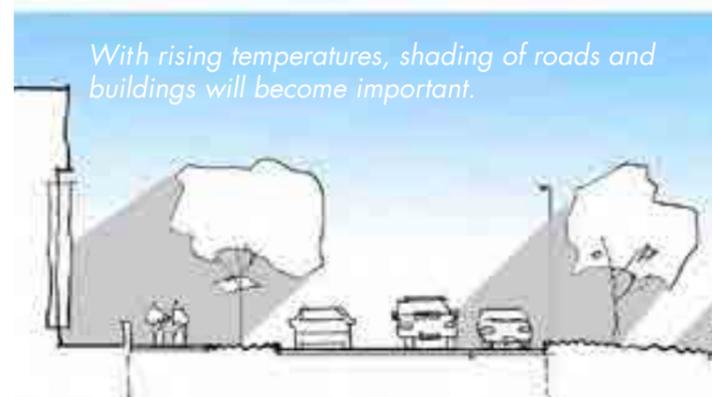
5.13 Sustainability

5.13 Sustainability

Sustainability has been at the core of this proposal. Conventionally, this subject is considered in three areas - economic, social and environmental but clearly in the design of residential environments these three subjects must be combined and integrated in their application. We have established that the site is in a sustainable location being within 12 minutes walking and cycling distance of the Town Centre and that it can be served by public transport. There is a need for the housing to sustain the economy of Tenterden and this overlaps with the social imperative to provide much-needed housing of the appropriate kind in a location which assists rather than hinders the creation of a balanced community.

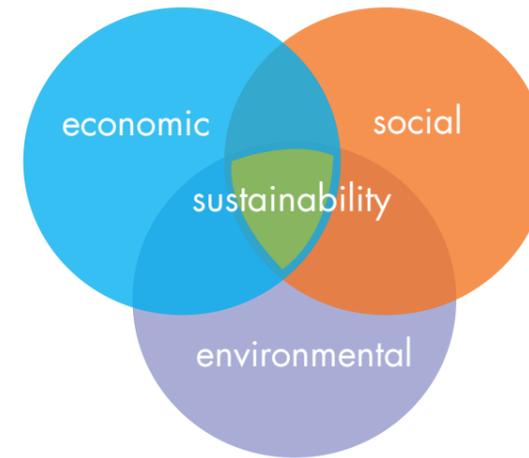
The 2016 Paris Agreement comments that wetland and woodland have significant carbon sequestration potential and therefore we expect the scheme to make a contribution in this. In addition, the proposal makes suggestions for potential provision of renewable energy as an integral part of the scheme. The UK has committed to carbon neutrality by 2050 and it is accepted that this will require substantial changes to built development design, its treatment of landscape, the environment and transport; this proposal aims to make a contribution to all of these. It is likely that with the changes to Building Regulations in 2020 there will be implications for gas heating in residential environments which will inevitably need to be considered in electricity strategy.

Comfort conditions for people must also be considered; temperatures are rising and there is good evidence that shade will be valued in future. Cooling of well-insulated buildings may be more of an issue than heating. This proposal has that potential embedded in it.



comfortable conditions for people

sustainability has three dimensions: economic, social and environmental, all interdependent



There is much in this document, and in supporting reports, on environmental matters, which include flood resilience, arresting biodiversity decline and providing the potential for significant improvements, through appropriate management. These matters are at the heart of this proposal. In addition, and probably not a design matter, is the issue of carbon sequestration.

"We will ensure broader landscapes are transformed by connecting habitats into larger corridors for wildlife"
 Michael Gove: HM Government "A Green Future: Our 25 year plan to Improve the Environment"



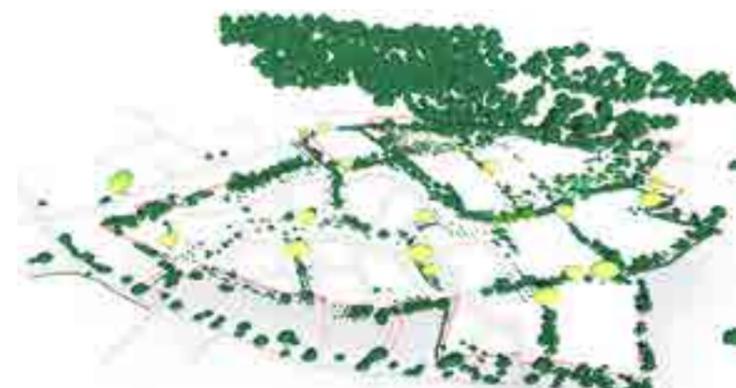
water attenuation



education



ease of walking and cycling



carbon sequestration & landscape repair



biodiversity

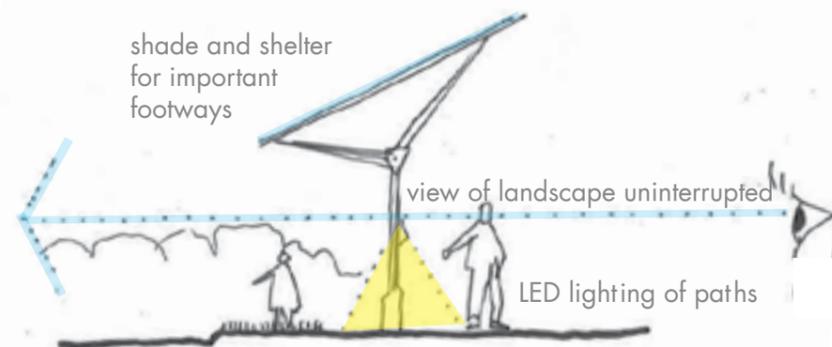
Renewable energy - choices and options

With the Government's commitment to carbon neutrality for the UK by 2050 there must be increased reliance on renewable energy, and its local generation and integration into development.

Renewable energy, the solar ribbon

In terms of electricity generation, roof mounted photovoltaic panels are commonplace but this still leaves the shared infrastructure of lighting, community buildings etc to be supplied. The photovoltaic ribbon shown here is an idea and option which could assist with this, and is an idea which is becoming used as widely as Eastbourne, the Middle East and many small infrastructure items such as bus shelters. The inclusion of such a device to provide electricity to some of the public infrastructure could make further reductions to the carbon footprint of the scheme as a whole. This is only one of many technologies to be explored; which is to be adopted will depend on commercial availability, viability and the state of technology, which is changing rapidly.

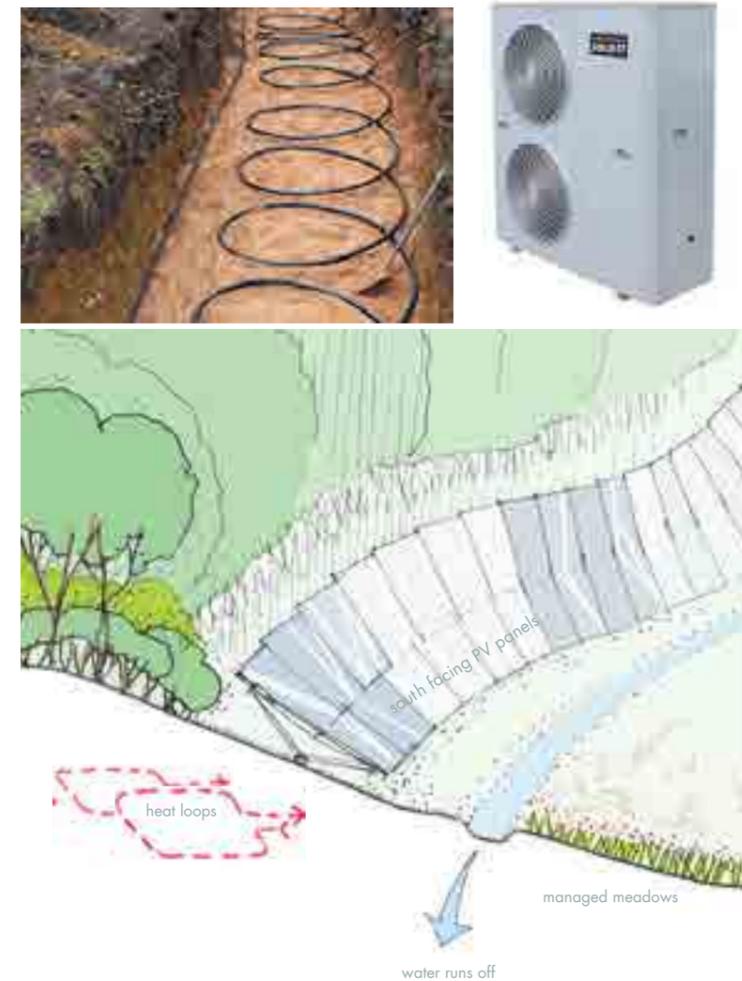
These are options of available technology but others will be suggested as technology advances, depending on commercial availability and viability when the reserved matters application is finalised.



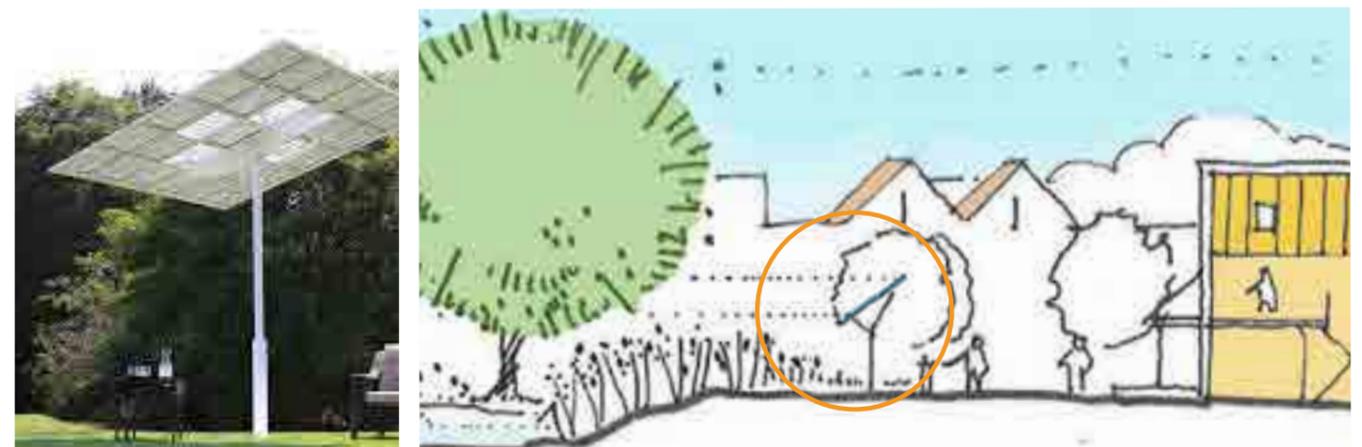
Ground and air source heat pumps, and heat loops

For heating, air and ground source heat pumps with improved refrigerants are becoming common, and heat pumps are far less carbon intensive than gas heating. With air source heat pumps the cumulative noise effects still need to be overcome but the site also offers potential for ground/water source heat pumps through the creation of its wetlands and ponds though the viability of this in a residential scheme needs to be tested. Communal air source heat pumps can be used for the apartment buildings or higher density terraces but they tend to be more efficient where the space heating load is high relative to the total load in the property. Ground and air source heat pumps are proven technologies which have advantages and disadvantages depending on the situation. Ground, water and air source heat pumps are far less carbon intensive than gas heating and also have advantages in terms of air quality. At a larger scale there is the potential to use shared ground heat loops, but again, the organisational implications need to be explored.

This short discussion of low-carbon and/or renewable technologies is the basis for further analysis as technologies become available and viability can be assessed. This does not imply a commitment by Wates Developments to any particular technology but rather to their commitment to reduce by 20% the carbon dioxide emissions across the site (based on Building Regulations Part L – 2013).



The diagram above shows an integrated approach to environmental sustainability in a new housing project; woodland/biodiversity linkages, water collection and use in SUDS, photovoltaics and ground source heat loops, all used to maximum effect.



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5.13 Sustainability

The Sustainability and Energy Statement (supporting document) demonstrates that the proposed development will provide a highly sustainable development in terms of its economic, social and environmental sustainability. Throughout the design process, the applicant and design team have, and will give, careful consideration to the sustainability issues relating to the site, and how these can be enhanced in a marketable and feasible manner. As a result, this Statement demonstrates that the development meets relevant sustainability criteria. In a number of areas it exceeds them.

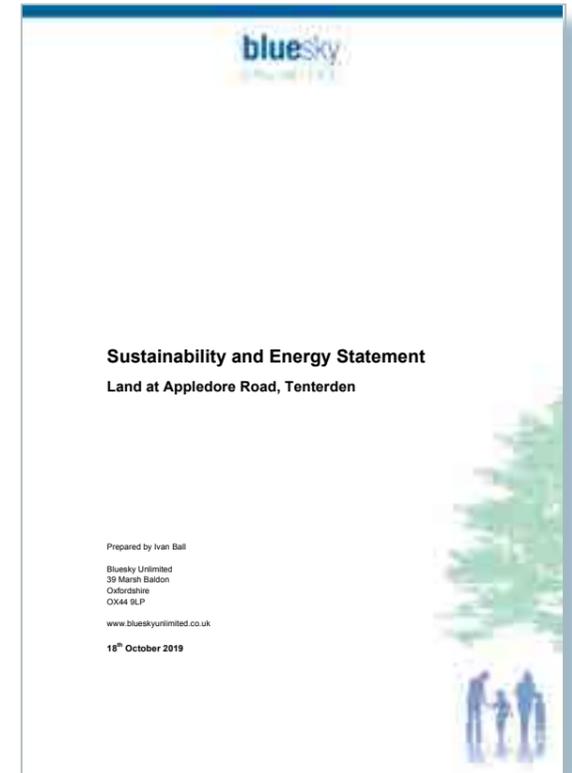
The Statement also describes the responsibilities that the applicant, designers and consultant and construction team have in delivering sustainability measures that will contribute to, meet and/or exceed the objectives and targets set out in section 4.2.2 of the Sustainability and Energy Statement.

The political climate in which sustainability is being discussed has changed rapidly during 2019. There is acute awareness that climate change is a current threat as opposed to a potential future danger, and a number of Government initiatives, actual or potential reflect this; the 2050 carbon neutrality commitment, the potential change to future Building Regulations and HM Government's Future Homes Standard (to be active from 2025); HM Government's 25 year Environment Plan and a range of other initiatives all point to heightened consciousness of this key issue. This proposal aims to be a 'good neighbour' through its approach to:

- carbon sequestration
- water attenuation and management
- biodiversity net gain and land management
- landscape renewal
- energy conservation and renewable energy
- environmental education
- conversion of over-grazed pasture to meadows and wetland
- the scheme design's approach to neighbourhoods, community, and pedestrian and cycle networks

The key sustainability findings from the Statement can be summarised as;

- reduction in carbon dioxide emissions compared to the maximum permissible by the Building Regulations (Part L) through energy efficiency measures
- the water use to each unit will achieve the enhanced standard required by the Building Regulations of 110 litres per person per day
- 40% of the homes will be 'affordable' and will be designed to be indistinguishable from other homes
- mixed-tenure scheme provides a highly sustainable design with activity throughout the day
- outdoor space in the form of private gardens, terraces and private communal spaces as well as enhanced public open space, children's play areas and community orchards
- a new Country Park will be provided together with sport pitches and pavilion
- high standards of environmental construction with compliance to the Considerate Constructors Scheme, a Site Waste Management Plan and other construction management principles
- Secured by Design principles will be followed
- all dwellings units will be built in accordance with Part M4(1) of the Building Regulations) as a minimum



Wates will commit to standards which exceed the current Building Regulations by 20%. This can be achieved through a variety of measures including the solar ribbon.

6 Visualisations



town centre

Appledore Road

Woodchurch Road

Country

Park

Aerial view/visualisation from the east. Country Park in foreground. Tenterden town centre in the mid-ground. Red line boundary is an approximation for illustrative purposes.

Section 6: Visualisations

The enlarged views on the right show representative areas of the scheme, described in this Design and Access Statement. The visualisations show, diagrammatically, massing and scale, relationship of buildings to landscape and infrastructure and key features of the scheme. This is a hybrid Application and the residential buildings are shown in Outline design only.



Aerial view from south, towards central area.



Aerial view from south. Pavilion and pitches in foreground. New pond on Appledore Road to the left.



Aerial view from south, towards Community Hub. Pitches to the left, linear natural playground to the right.



Aerial view from south, showing retained/augmented tree belts. Proposed orchard on right, Country Park in foreground.



View eastwards along central wetland. Two storey houses over look the open space, set against a background of existing trees. The space provides a connection from Tenterden town centre to the Country Park and will give opportunities for informal recreation, biodiversity and social interaction.

The view on the right, page 123, shows a close-up of the space and gives an idea of its intended character.