JOINT DEVELOPMENT CONTROL COMMITTEE 22ND JANUARY 2025

HARTREE DEVELOPER PRESENTATION

Response to Members' questions

1. Update on issues raised at the last presentation

Please refer to the presentation document.

2. Delivering exemplar zero Carbon development

Layout and Design: How will layout (aspect) and design (single/dual aspect) thermal management (insulation and smart ventilation) and the materials palette contribute to zero carbon goals, prevent overheating and attenuate noise nuisance?

This is an outline application with detailed design control achieved through a combination of parameter plans and the Design Code. This will still, however, mean that there is some flexibility of approach for plot developers and conclusive results on some parameters won't be possible until Reserved Matters stage.

At the masterplan level, the **illustrative** scheme seeks to maximise the number of dual aspect homes as much as possible with no north facing single aspect dwellings. The results of the parcel testing demonstrated that a range of 70%-92% is an achievable range for dual aspect homes.

Prioritising dual-aspect for occupant comfort has been additionally complemented by comprehensive microclimate modelling (not normally carried out at this early stage), which informed the positioning of the blocks to allow for sunlight availability across all seasons within facades and outdoor amenity areas. Additionally, a noise barrier and tree buffer are proposed to reduce noise levels from A14 to the north and improve views out.

These principles will significantly contribute to good natural ventilation to dwellings for overheating mitigation and reduced energy demand. Early-stage overheating modelling shows how the masterplan has been designed to minimise overheating risk by adopting shading strategies, reducing glazing area and maximising window free areas. Opportunities for mechanical ventilation are proposed in the scheme to provide additional purge ventilation, particularly where there is risk of high noise levels. A small number of dwellings and non-domestic buildings are likely to require limited cooling to mitigate overheating risk. This will be tested and addressed at RMA stages.

As regards thermal envelope performance for reducing energy demand, the energy strategy sets out aspirations for a high-performance envelope to reduce heat loss and deliver an air-tight thermal environment better than Part L 2021 and the emerging Future Homes and Building Standard. During detailed design, it is recommended that attention to detail including thermal bridging and window reveals should be considered to minimise heat loss, condensation and optimise year-round building performance.

Although materials palette and further design details are not within the scope of this outline application, principles and expectations for delivery of a net zero carbon-enabled development have been set as part of the Design Code and accompanying planning documents. The next stage of design will demonstrate how proposals align with the Design Code.

Energy Generation and Distribution: What are the proposals for local grid management, on-site energy generation and distribution?

Our proposal is for an on-site solution, noting that the draft AAP had considered a district-level solution for the NEC area, but this was not progressed as a policy requirement. We can continue to review this as the application progresses and with future phases.

Local grid management: Smart grid with onsite renewable energy generation, communal battery storage and optimisation technology are proposed to maximise carbon emissions reductions, manage grid capacity and connections costs, and reduce operational energy costs.

On-site energy generation and distribution: Solar photovoltaics (PV) panels will also be deployed across the roofs of the indicative masterplan to generate electricity for use on-site. Opportunities for private micro grids will be tested at RM stages.

3. Water supply, consumption and recycling

Water supply: Does Cambridge Water's Water Resources Management Plan provide for both the domestic and commercial users?

Yes, it is does include both. The RMP is in the process of being updated to reflect the quantum of development coming forward in North East Cambridge and alongside other developers/landowners, we will liaise with Cambridge Water on any updates required to our assessments.

Water reduction: What are the consumption targets and how will they be delivered, monitored and managed?

Water targets are as per AAP, 80 lpd for residential, 55% savings against BREEAM for non-residential. This can be achieved by specifying low-water fittings to achieve less than 100lpd before integrating water reuse technologies, such as smart rainwater harvesting or grey water recycling. Water reuse technologies will further reduce consumption to AAP targets.

Post-occupancy monitoring of water use will be carried out in collaboration with key stakeholders. This will focus on contributing to best practice and benchmark setting. The monitoring study will be carried out on the earlier development phases, to set benchmark, capture key learning points and inform the development of the following phases.

The suggested approach allows fully for advances in technology in relation to post-occupancy monitoring of consumption as well as in reduction of water use itself.

Water recycling: What are the proposals to capture, store, process and recycle grey water?

Water re-use technologies are kept flexible for different technologies at this stage.

A review of best practice water recycling technologies concluded that for Hartree a plot level 'smart' rainwater harvesting system is most suitable in terms of water savings, cost and carbon, user experience, management and maintenance, and adaptability. This technology makes use of the storage capacity primarily provided for stormwater drainage attenuation, thus reducing carbon emissions, costs and improving efficiencies.

Plot developers will also have the flexibility to implement the most adapted solution for each plot and use any new innovative products which may come forward over the 15 to 20-year delivery period.

Surface water drainage: What are the proposals to prevent and manage surface water flooding?

Surface water flows from the proposed development will be restricted to equivalent greenfield runoff rates in accordance with local and national policy. All surface water drainage systems will be designed to accommodate a 1 in 100-year rainfall even inclusive of a 40% allowance for climate change.

In order to manage flows at a reduced discharge rate, attenuation features will be provided to store surface water in a controlled manner to minimise flood risk within the development and to any 3rd party property.

Attenuation features are proposed within individual plots and at strategic locations within the public open space. On plot proposal will be developed alongside the smart rainwater harvesting systems adding further benefits by re-using surface water and removing it from the downstream environment. Within public open space, the attenuation features will be co-ordinated with landscape proposal to improve amenity value of spaces, and also maximise opportunity to utilise retained infrastructure on site as is the case with the heritage tanks.

High quality Sustainable Drainage Systems (SuDS) are proposed to be incorporated on plot and within the highway corridors. These SuDS will intercept surface water runoff at source from external hard surface areas (such as footpaths and roads), which will provide a further level of control of surface water runoff and also facilitate initial treatment of surface water runoff to remove contaminants prior to entering the below ground drainage system.

4. Affordable housing: scope, tenure mix, dwelling size mix, pepper potting and phasing

Scope: 40% affordable dwellings will need to be delivered.

The Hartree proposals allow for 40% affordable housing to be provided on market homes for sale and 20% to be provided on Build to Rent developments. This is in line with our assessment of national and local policy requirements at this stage and will be subject to viability assessments to account for market fluctuations, consistent with policy requirements.

The levels will remain under review with the desire to increase if at all possible. Any increase in provision of affordable housing above these levels would, however, normally need to be funded through measures which would potentially, not be guaranteed until later stages in the process e.g.:

- The provision of potential Homes England affordable housing grants;
- A reduction in contributions for other physical, community of social infrastructure, to be made via IDP or statutory S106 contributions.

Tenure mix: What will be affordable tenure mix between social rents (40% of market), affordable (60% to market) and intermediate (80% to market and shared ownership)?

The 2024 Housing Strategy seeks a mix of 75% affordable and social rent, and 25% shared ownership and other intermediate products.

The precise mix at Hartree will be determined at Reserved Matters stage in line with market and need considerations at the time, but the position set out in the Housing Strategy is the current proposed starting point for Hartree (although it is acknowledged that shared ownership is not a product which has generally worked well in Cambridge).

Of the intermediate, what proportion would be provided through Build to Rent and RPs (to let and shared ownership).

The draft Hartree planning application includes for up to 25% of all units within the masterplan to be BTR and, as detailed above, 20% of those will be affordable BTR units to be delivered at a 20% discount to market rent (in line with industry standard).

Of the remaining units within the masterplan, of which 40% will be affordable as detailed above, it is envisaged that these will be delivered via a range of affordable providers, including the Local Authority, where desired/appropriate and other registered providers

Dwelling size: What will the dwelling size mixes be for a) market and rented dwellings? How will these dwelling size mixes be robust against shifts in household demographic profiles?

All dwellings have been designed and appraised within all of the project team's technical assessments on the basis that these must meet or exceed minimum National Space Standards.

At the stage of each reserved matters submission for that phase/neighbourhood, the specific mix will be confirmed, together with confirmation these meet the relevant standards.

The submissions will respond to shifts in household demographic profiles and also any updated assessments of Housing Need published by GCSPS.

Pepper Potting: Are mixed tenure apartment blocks proposed?

The Council's long experience in homes provision and management has led to policy principles around clustering, rather than pepper potting. In practice this tends to avoid mixing market and affordable units off the same block core, but to deliver adjacent blocks of differing tenure with tenure blind status. This can be confirmed in each reserved matters submission, however.

Tenure mix phasing: Will each phase meet the dwelling tenure mix targets?

As explained above, that is the overall objective and will be addressed through phasing discussions. It might be the case that the tenure and mix will flex between phases/plots to provide for flexibility. For example, one phase might over-provide on BTR. This will be monitored and managed through the s.106 agreement.

5. Transport: Trip budget, modal mix and mitigation measures

Multi modal mobility: How does the scheme support mobility, for example cycle / cargo and two-wheeler secure storage being on the doorstep and hence the most convenient active mode of transport?

Bike stores will be provided within the courtyards and will be subject to more detailed design at Reserved Matters Stage. At this stage, the masterplan has tested the allowance for a policy compliant number of cycle parking spaces within the blocks.

As a minimum, an allowance of 5-10% of non-standard cycles has been accounted for which could be provided for people with mobility issues or cargo bikes.

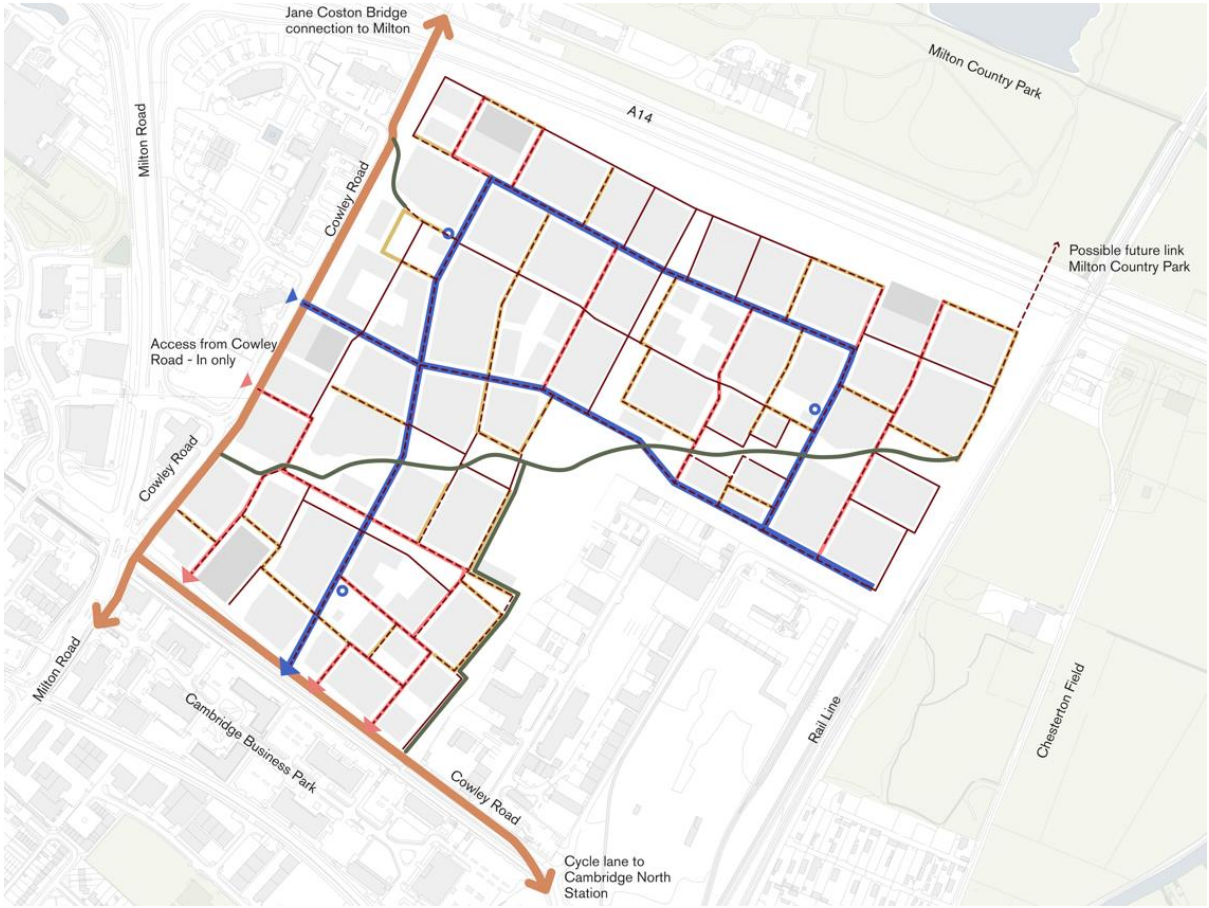
In addition, and as part of the travel plan, the potential for cargo bike rental will be explored which could provide a more affordable option for those who are unable to afford an electric cargo bike.

Shared mobility such as e-bikes and scooters will also be conveniently located across the site, with clusters around the mobility hubs.

What design parameters are adjustable to meet mobility needs of groups?

This is explained on one of the presentation slides (page 16) in terms of access to blue badge parking (and also meeting adaptable buildings M4(2) and M4(3)).

It would be helpful to see use cases and travel options for and experiences of other group, for example, proposals for a safe route to the nearest Primary and Secondary Schools, destinations for young families, single people, out of city commuters, mobility challenged.



Primary School – The two primary schools are located at either end of the play line, which would serve as a key route picking up pupils along its length as they walk through the masterplan onto the car-free link. There are also a number of other routes through the masterplan which allow people to walk / cycle to the school on low car routes.

Walking and cycling “buses” could be located at strategic points across the masterplan (including the playline) to create a safe and easy way for pupils to travel to school.

Secondary School – The Secondary School is outside of the boundary of the site and would require pupils to walk (or cycle) through the site to the boundary edge. Cowley Road itself and Milton Road are both proposed to have improved crossings and beyond. We are also working with the other major landowners across the masterplan to ensure that active travel routes are promoted across the AAP area. The measures to achieve this and delivery are also being discussed with County to improve the onward routes to the local Secondary Schools.

Destinations for young families – It is envisaged that people will walk through the masterplan onto the playline which has a number of facilities for young families.

Mobility Challenged – Whilst the masterplan has been designed with low car neighbourhoods and DDA compliance; blue badge parking spaces have been accommodated on street within 50m of residential blocks.

Out of City Commuters – Improved routes down to the station via crossings on Cowley Road provide access to the station and the Busway. For those who require a vehicle, there is an option to drive to work if the resident owns and needs a car.

Car ownership: Do the trip generation models assume low rates of car ownership (noting only 20% of Eddington residents have cars).

Yes, the trip generation model is predicated by the low trip budget prescribed by the County Council. As such, the car ownership reflects the low level of car usage and person trips have been redistributed onto other modes to reflect the increased use these more sustainable modes.

Mobility hubs: What was the brief for the hubs: what are they for, how will they work and why have proposed sites been selected?

The Mobility Hubs have been designed to keep vehicles off the streets by intercepting them on the periphery of the site. The one exception is the Hub in the northeastern quarter of the site, which is required to enable adequate coverage in that area of the site.

The Mobility Hubs have the following design elements:

- Car parking spaces for use by residents / employees
- Car-sharing spaces for use by the public
- Realtime information to allow choice of travel
- Cycle repair shop
- Amazon Style Lockers
- Shared mobility (e.g. Voi Scooters)
- Bus Stops close by
- Bring Locations for recycling
- Within 400m of all residents

Have forecast low car ownership levels and use cases informed the specifications for the mobility hubs and wide provision of car-free streets?

Yes, they have. The number of car parking spaces in the mobility hub results in a ratio of less than 0.4 spaces per unit.

Displacement parking: What measures are proposed to prevent displacement parking in Milton and East Chesterton?

This is explained on one of the presentation slides (page 17).

6. Landscape strategy (public access and uses) with Ecology (20% on site BNG)

Open space provision: How will the overall requirement be met across the site?

Hartree will deliver 19.48 ha of public open space. This level of provision is based on the projected population of the development and complies with (and slightly exceeds) the emerging NEC AAP policy target.

Public open space at Hartree is provided in two main categories:

- **Informal Open Space**: including areas for informal sports, growing spaces, and general relaxation, and
- **Provision for Children & Teenager:** featuring formal play areas classified by age groups.

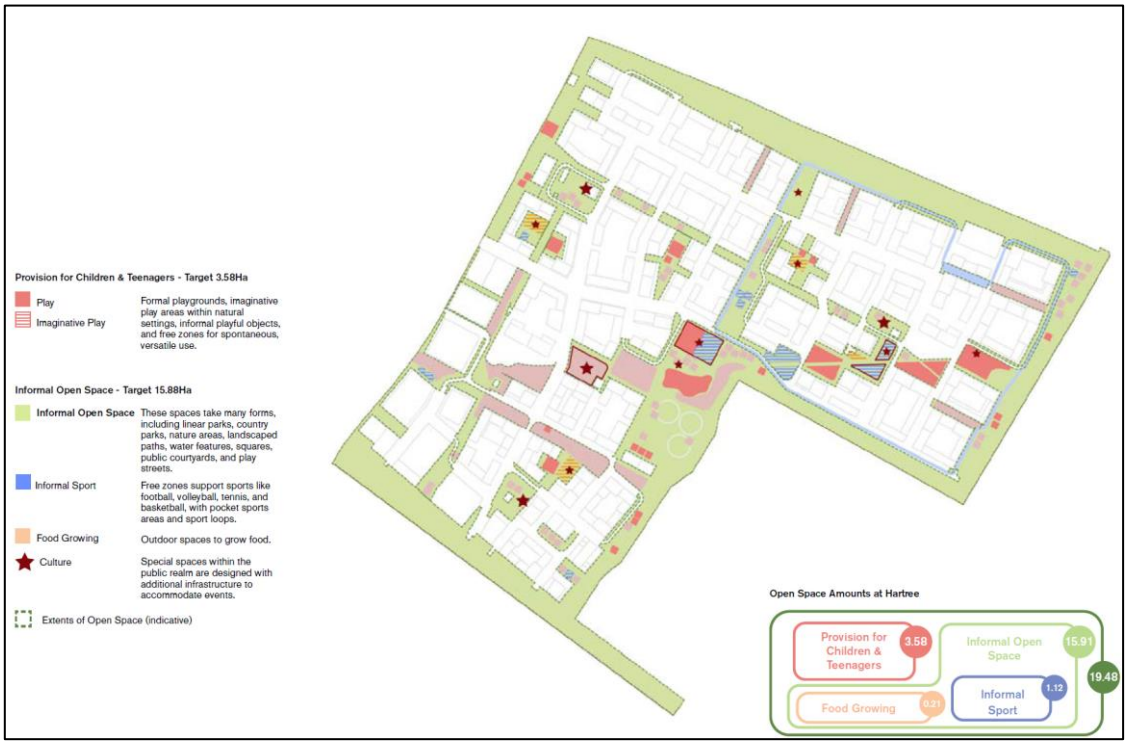


Image taken from draft DAS showing open space quanta and location.

Open space quality: What will the open space provide in terms of uses (exercise, play, sport), environmental experience and biodiversity?

Public open spaces at Hartree are designed to facilitate and encourage activity like meeting and gathering, different play opportunities, flexible sports and provide spaces for retreat and relaxation. Moreover, natural areas allow for exploration and outdoor learning.

This variety of spaces, with a mix of programmatic elements, is delivered across the three scales of public open space - Strategic, Local and Neighbourhood spaces. These spaces are connected by pedestrian and cycle networks ensuring doorstep play and nature are available to everyone. The variety of spaces included within Hartree is included below.

Play for All Ages
Places to play and have fun. From formal playgrounds, to imaginative play settings in nature to free zones for flexible use, every age group can find the most suitable spot to enjoy in a safe space. Hartree has the goal of providing a variety of play opportunities of different scales to ensure a fair use of space by everyone.

Exploring
Existing and new natural areas provide opportunities to discover local flora and fauna and play in a more wild and adventurous setting. Tracks and landscape settings for adventure like wandering, bird watching or flora discovery.

Sports and Active Leisure
Informal sport areas, pocket fitness zones, sport routes for jogging or flexible areas for multi-use.

Sport and active leisure is ensured through informal sport zones scattered across the site, flexible area for multi-use and sport routes crossing Hartree and connecting to surrounding parks, equipped with pocket fitness zones and places to rest and cool down.

Relaxing
Benches and resting areas at quieter locations can serve as spots to rest and relax away from active zones for sport, play and meet. Places to enjoy relaxing outdoors which include places to read, sleep, or just listen.

Outdoor Learning
Places for informal outdoor classes, to learn or practicing skills. Educational areas with info boards to learn about local fauna in nature zones.

Meeting & Gathering
The public open space ensures a direct communication with public buildings, creating places to meet and gather scattered all around the site like terraces, squares, or under the shade of trees in a pleasant setting.

Culture
Places that can host cultural events and activities, and that can showcase local art like sculptures or installations.

Retreat
Quiet places to contemplate nature, resting or having a walk. Including food growing space. Areas for food growing and where to improve personal skills while meet up and build a community.

Ultimately, Hartree will offer flexible, multi-use zones of various sizes, ideal for outdoor school activities, sports classes, team games, or even as staging areas.

The approach to the play and informal space is further demonstrated illustratively below. The quality of these spaces will ensure they are accessible activities for a range of age and ability groups within the public realm.

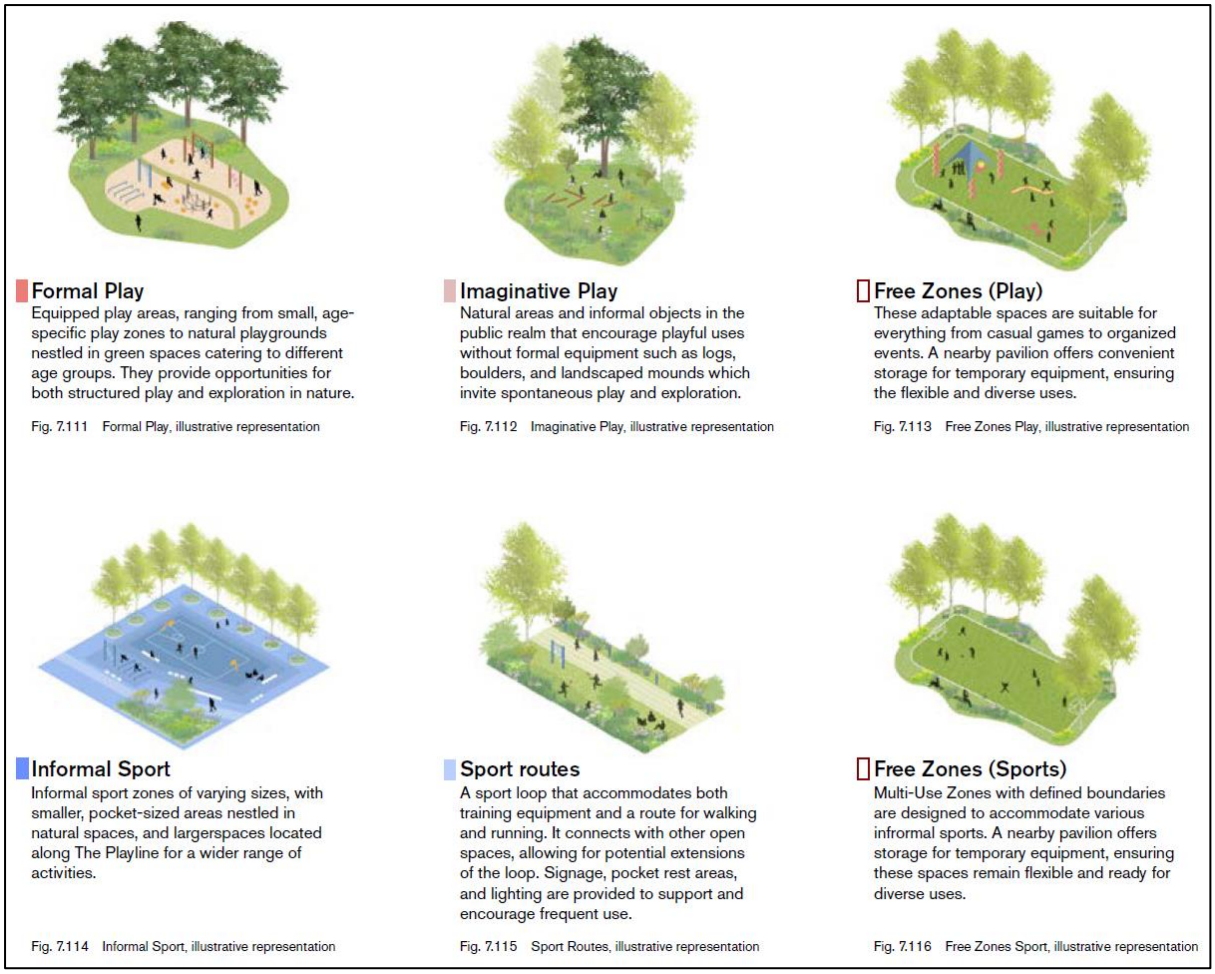


Image taken from draft DAS showing types of play and informal sports spaces at Hartree.

Biodiversity Net Gain: Will the tree planting strategy focus on maximising contributions to BNG and shade and mitigating noise and air pollution from the A14? Where, when and what trees by size and species will be planted?

There is a presentation slide on BNG and partially yes, trees will provide shade across the scheme, and also help mitigate noise and air pollution from the A14. This is a detailed design point, and the Green Ribbon along the A14 will be the subject of a detailed Management and Maintenance Plan.

Hartree is committed to meeting, and where possible exceeding, both local and national ecological and biodiversity planning policies, and we are currently achieving over 20% BNG across all three indicators (habitat, hedgerow, watercourse).

With regards to trees, we recognise that high performance landscape trees play a crucial role in delivering ecosystem services that enhance urban comfort. They cool the environment through shading, filter pollutants to purify the air, produce oxygen, and sequester carbon dioxide. Additionally, trees support green roofs and create opportunities for urban food growing.

These services are vital for promoting sustainable and liveable urban spaces.

The Hartree masterplan prioritises the retention of existing valuable trees on the site as much as possible, ensuring their preservation and integration into the overall development.

The existing tree population has been surveyed and qualitatively assessed. Consultation between the members of the design team has occurred throughout the layout planning process to maximize tree retention, with the focus on the retention of better-quality trees.

New trees will be carefully selected to include local and climate-resilient species, ensuring long-term environmental benefits. The size, species and location of these has not been determined at this point in the process.

Central diagonal green corridor: What is the landscaping plan for the corridor: trees, water features, sculpture, play, sport, seating, pedestrian and cycle routes?

The Playline and Central Park, included as part of the indicative masterplan, are the core of Hartree's active and recreational green spaces.

Designed for a variety of activities, they combine leisure and nature with pocket green areas for relaxation under the trees, expansive lawns similar to traditional Cambridge parks, and a small nature reserve around The Tanks' wetland.

This central space encourages community interaction, physical activity, and a deeper appreciation for the environment, creating a vibrant, multifunctional space that enhances the quality of life for residents and visitors alike.

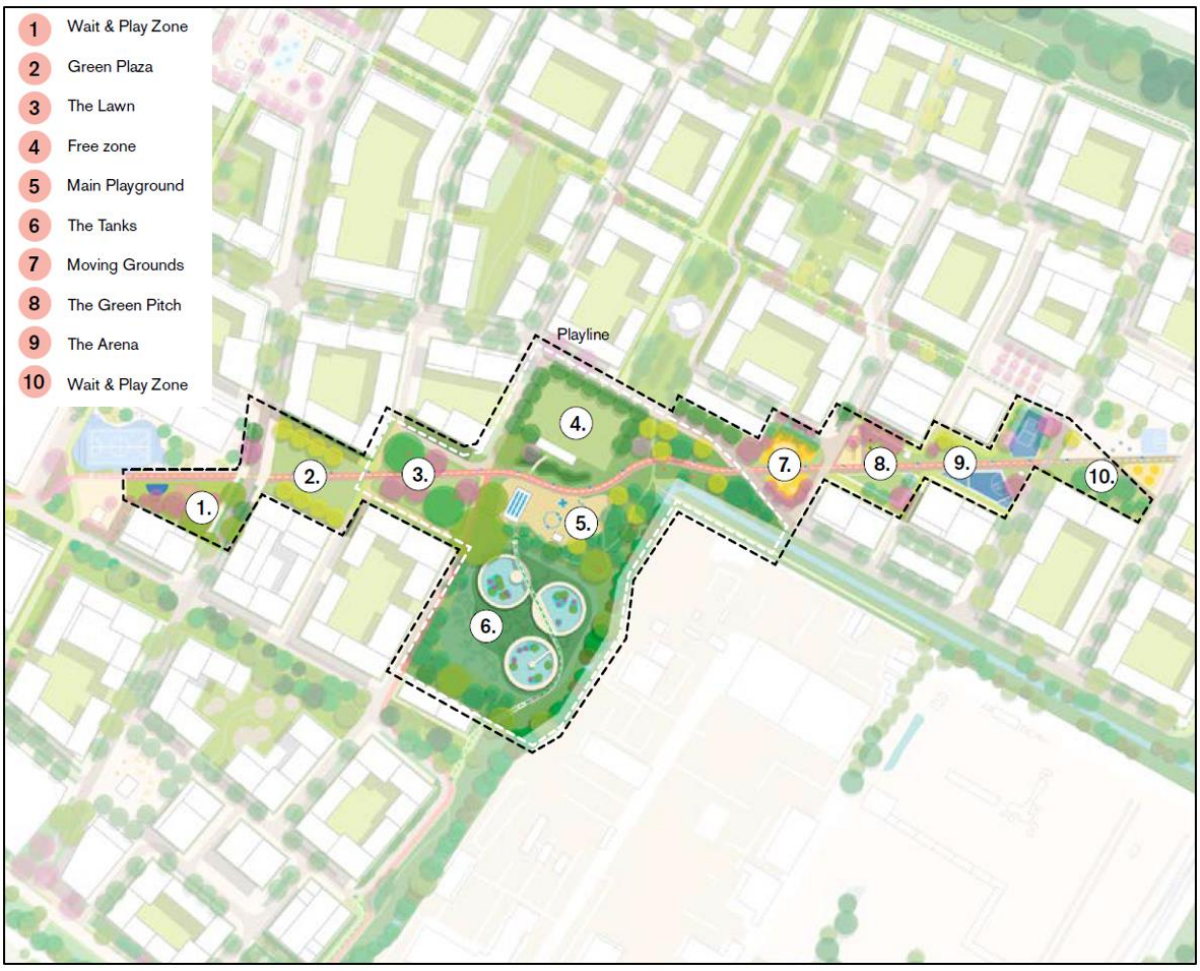


Image from draft DAS showing indicative plan of the Playline and Central Park.

The Playline & Central Park offer dynamic and multifunctional spaces designed to cater to all ages and interests. They feature diverse zones for play, sports, and community activities, supporting active lifestyles in a safe and inclusive environment.

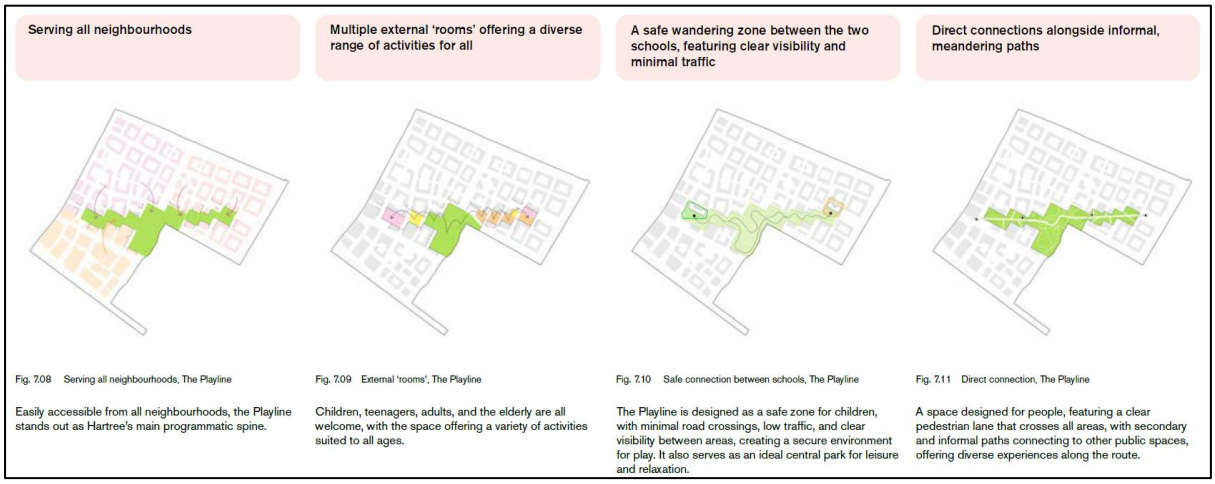


Image from draft DAS showing key principles of the Playline and Central Park.

7. Building design, street scene and roofscape

Aesthetics: How will an ambition to make this exemplar development be aesthetically pleasing be realised? The key points being the mix of materials pallets and detailing, street scape and roofscape.

A Design Code will be submitted for formal approval as part of the Hartree outline application. The Design Code outlines the rules and requirements for the detailed design of the new development, ensuring the creation of a high-quality neighbourhood that reflects the vision, aspirations, and values of Hartree.

The Hartree Design Code has been shaped by detailed plot studies and typology testing conducted during the masterplan development which will be set out in the Design and Access Statement. It will carefully consider character, context and materiality to ensure the new development is contextually embedded within Cambridge.

Extensive consultation with the Greater Cambridge Shared Planning Service, Cambridgeshire County Council, the Cambridge Quality Review Panel and other stakeholders has taken place with, and helped shape, the production of the Hartree design code.

Given the 20-year project timeline, reflecting the scale of Hartree and the masterplan area, there will be opportunities to review the Design Code to accommodate changes, such as technological and environmental advancements. This flexibility ensures the Code remains relevant and can be further improved throughout the development's lifespan.

Living streets: How will the streets privilege pedestrians, and cyclists, calm traffic and provide for temporary parking spaces for trades?

There are four key objectives of Hartree's access and movement strategy:

- **Long term transport neutrality** – Encouraging a sustainable development by limiting car usage and promoting alternative, eco-friendly travel options over single-occupancy car journeys.
- **Quality of life** – Ensuring a high quality of life by delivering a highly accessible development, free from the high emission levels typically found in urban living.
- **Integration with infrastructure** – Enhancing and creating connections across North Cambridge, linking key destinations like the city centre, the Science Park and recreational spaces.
- **Wellbeing** – Fostering wellbeing through landscaped streetscapes and green connections, providing "Healthy Streets" that cultivate an inviting environment where people want to live and socialise.

The strategy supports everyone's movement needs, including those requiring private car use due to reduced mobility, while making non-car options more convenient and accessible.

- **Walking** – All streets are designed for encouraging walking, as part of legible, permeable network of streets. The pedestrian routes within the Hartree masterplan features two distinct path systems: formal, direct routes for efficient travel and meandering, organic pathways for a more relaxed experience.
- **Cycling** – The strategic cycle network consists of two types of routes: vehicle-free paths and shared routes with traffic.

The majority of traffic will be associated with, and directed to, the Mobility Hubs, with the tertiary streets being access only for blue badge parking and deliveries to residential units.

The public realm looks to create quality 'places to stay' for extended periods, supporting diverse ground floor uses like outdoor dining and cultural events. These are best achieved through 'slow' pedestrian-priority spaces that promote effective placemaking, as the precedents included below demonstrate.

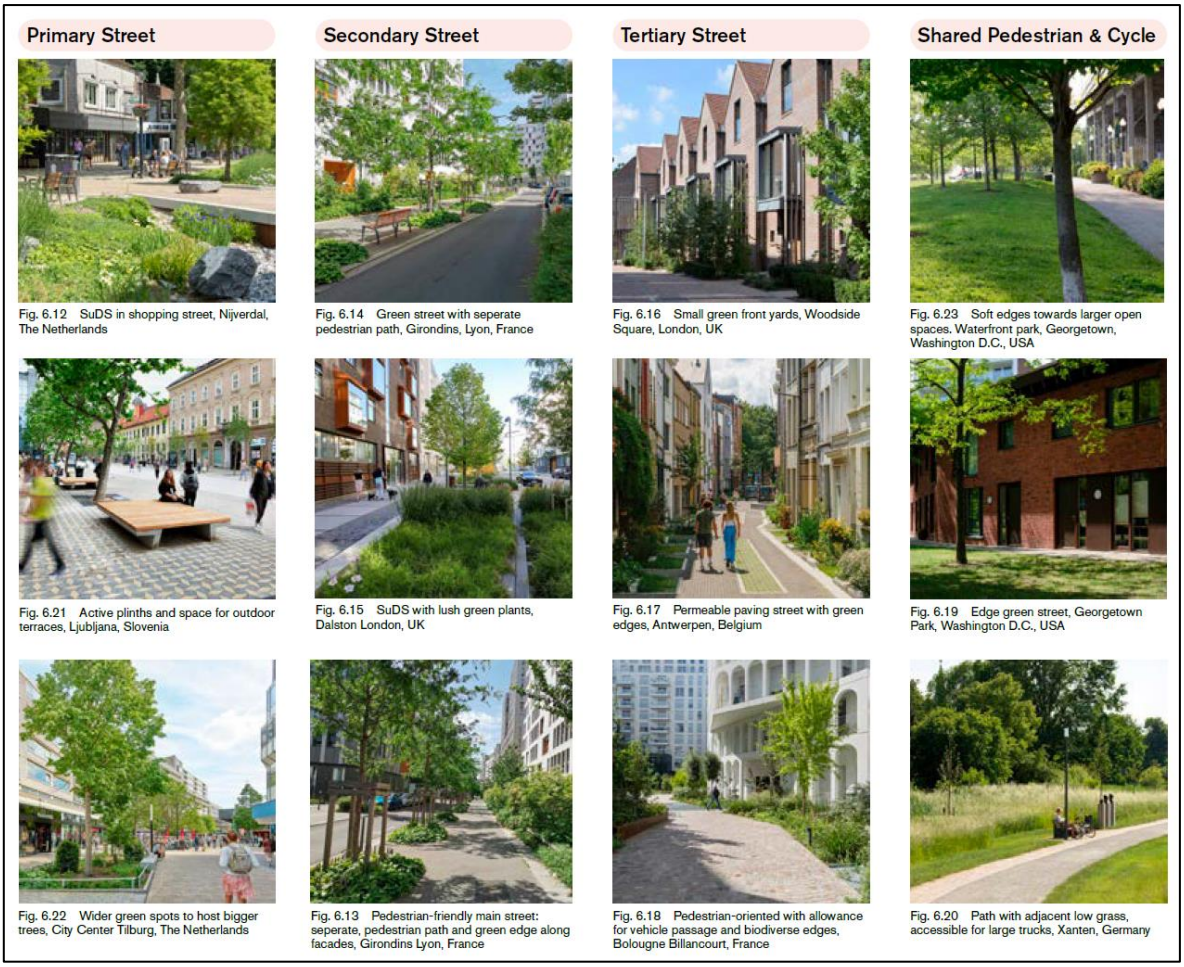


Image from draft DAS demonstrating indicative designs for each street type at Hartree.

Roofscape: How the roofs contribute to long distant views of the development?

A Townscape and Visual Impact Assessment (TVIA) has been prepared to support the application, evaluating the effects of the proposed development on the landscape character, townscape, and views.

A series of potential 'key viewpoints' were mapped onto the Viewshed to represent sensitive townscape and visual receptors. These viewpoints were identified through a combination of desktop research and onsite analysis, incorporating those from previous TVIA assessments, which support the emerging Area Action Plan and Policy 62/Appendix F of the Local Plan. The key viewpoints were tested and refined on-site and in consultation with the Local Planning Authority.

Separately, a roof strategy has been developed that balances the various spatial and technical needs of roof spaces to provide access, plant space, amenity space, water attenuation, biodiversity net gain (BNG) and renewable energy generation.

Stewardship: What governance and or tenure (freehold / commonhold) arrangements are proposed to ensure estate management services are accountable to and provide value for money to residents?

This is covered in the main presentation (pages 18 & 10).