Public Appendices

Appendix C

Revised EZ Masterplan

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Northstowe Local Centre & Enterprize Zone

Masterplan and Design Guidance

Appendix C

Team

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Contents

Northstowe North aerial view

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1. Introduction

1.1. About this report

The following report represents a masterplan and design guidance for the Local Centre and Employment Zone site in Northstowe (LCEZ Northstowe).

The Site is a 5.2ha empty plot in the north-eastern corner of Phase 1 of Northstowe Masterplan, and forms one of two intended local centre locations within the new town of Northstowe, supplementing a larger Town Centre envisaged at the heart of Phase 2. The site additionally includes allocation for a significant employment zone, with a focus on business and commercial uses.

South Cambridgeshire District Council (SCDC) purchased the site in 2021. This intervention by the Council, in an area where the market has so far failed to deliver the local centre and employment land anticipated in the outline planning consent, thus provides the opportunity to consider the employment zone and local centre in a holistic manner that have various interdependencies and to deliver the enhanced outcomes desired by the Council and local community.

The site consists of six parcels, of which four parcels to the north are identified as Employment Land and two parcels to the south as Mixed use/ Local Centre.

The Local Centre presents an opportunity for the Council to invest in a mixed retail/commercial development adjacent to an employment zone. The Local Centre incorporates a Community Building, and there is a need to take into account additional community infrastructure requirements that would be generated from future developments now coming forward in excess of original plans for Northstowe, including Northstowe Phase 3B, Digital Park and Endurance Estate parcels.

The co-ordination of the Local Centre and Employment Zone avoids piecemeal development, delivers economies of scale and helps deliver a comprehensive place with sustainable, high quality buildings, and public realm, in a key gateway location.

Adopting a holistic approach enables a clear brief for the project to be developed, to deliver on the Council's and key stakeholders' vision, and maximise the value of the Council's investment.

The site occupies a central location within Phase 1 of the major settlement of Northstowe. Substantial residential development has already been completed around the site.

The delivery strategy is unknown and it is recommended to follow a 'market knows best' approach that unlocks the potential of the site by seeking a specialist partner to drive forward the delivery of the Employment Zone.

AR Urbanism and partners, including PRD, CZWG, Andrew Black Consulting, OKRA Landscape Architects, and Steer, have been comissioned by South Cambridgeshire District Council as a Client Advisory Team, to develop a vision and proposal for the Local Centre and Employment Zone, to an initial planning application.

This report builds on the baseline analysis of the site and articulates the vision and principles of development of the site, put together with input from the entire consultant team. This includes an exploration of:

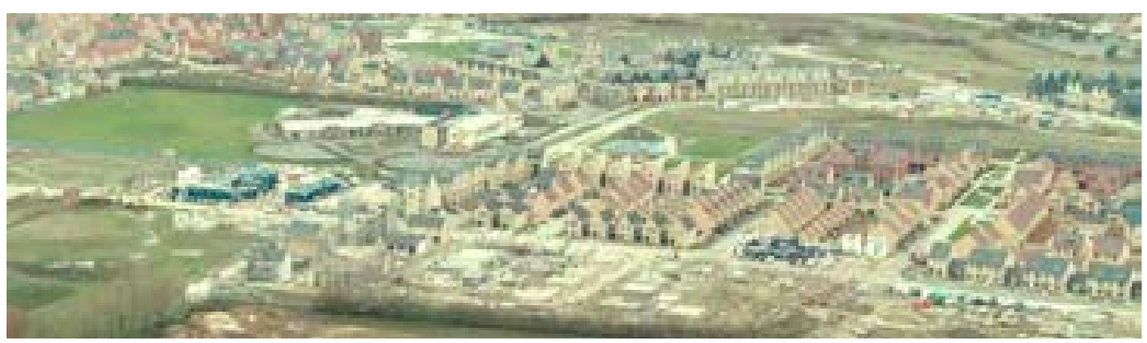
- Masterplan Vision
- Illustrative Masterplan
- Design Guidance
- Character Areas

1.2. Brief

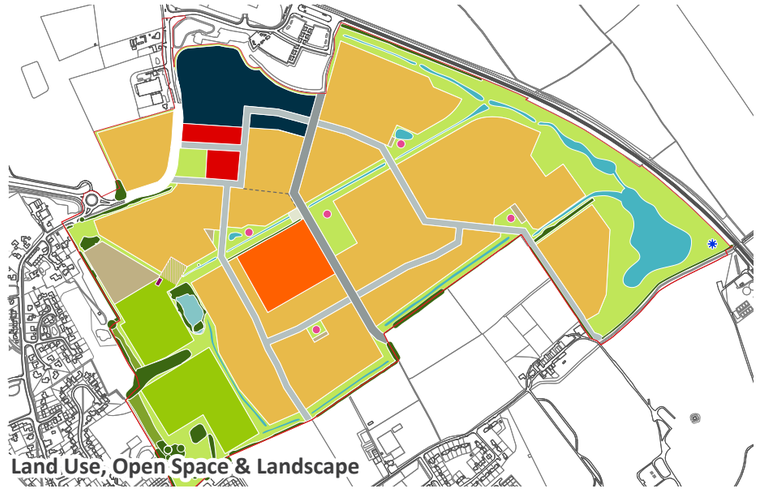
The vision for Northstowe is to create a 21st century town with a strong local identity that combines the best historic characteristics with a sustainable pattern of living and lifestyle choice. It is based on an urban grid form pattern, with excellent cycling and pedestrian connectivity, links to a dedicated busway connecting to Cambridge and having good access to green/blue infrastructure, that draws its inspiration from fen landscapes (waterbodies, drains and ditches).

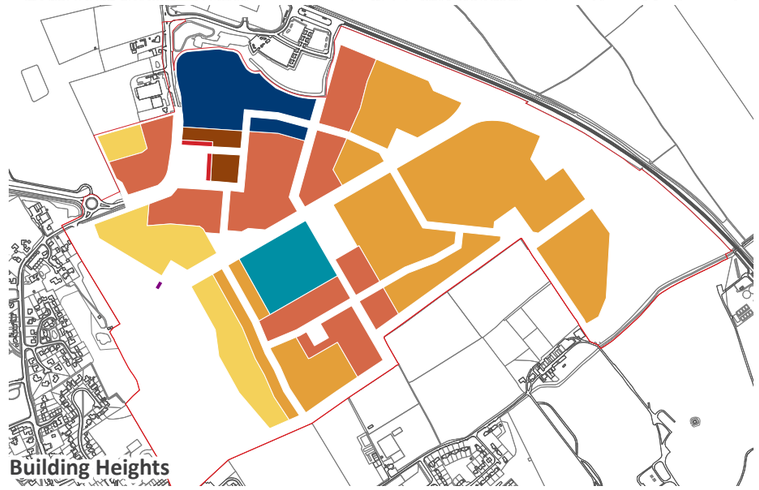
The Employment Land is intended to become a positive and attractive northern gateway to the future town. It is located strategically to the north of Northstowe Phase 1 to take advantage of the guided busway which provided links to Cambridge City. The development must provide for sustainable travel and propose innovative approaches to car-parking provision. There is an opportunity to explore synergies between the Park and Ride and employment area in terms of promoting sustainable travel, parking provision, but also provide local, renewable energy.

The mixed-use local centre is located directly to the south of the employment land, next to the B1050, to maximise on passing trade and help ensure that it stands the best change of getting established early on. It will provide an important meeting place linking the employment and residential areas, visible from the B1050 and with a high level of enclosure. There is an opportunity to provide an integrated mixed-use area and buildings that are active, vibrant and safe. A landmark building is anticipated in the local centre.



Northstowe Masterplan - Development Framework Document





Approved Parameter Plans - Northstowe Phase 1

2. Context

NOTE *Introduction to be added with list of relevant planning policies*

- Northstowe Area Action Plan (2007)
- Development Framework (2012)
- Phase 1 Outline Planning Permission (2014)
- Northstowe Phase 1 Design Code (2017)
- South Cambridgeshire Local Plan (2018)

2.1. Northstowe Timeframe

2003: Northstowe new town allocated in Cambridgeshire & Peterborough Structure Plan.

Jul 2007: Northstowe Area Action Plan (NAAP) adopted

Dec 2007: Gallagher / Homes and Communities Agency (HCA) submit planning apps for entire Northstowe site.

2010: HCA inherits the MoD land at Oakington Airfield.

Aug 2011: Guided Bus-way opened.

Oct 2012: Northstowe Development Framework approved.

Apr 2014: Phase 1 outline planning consent granted.

Jun 2014: Phase 1 Design code approved.

Mar 2016: Selected by to be part of NHS 'Healthy New Town' initiative.

Summer 2016: Pathfinder Primary school complete, occupied temporarily by Hatton Park School.

Jan 2017: Phase 2 outline planning consent granted.

Apr 2017: First homes in Northstowe occupied.

Oct 2017: Phase 2 Design Code is approved

Feb 2019: Work starts on Phase 2 Education Campus

Jun 2019: Phase 1 Local Centre Square is completed

Sep 2019: Secondary School opens on Phase 2

Nov 2019: Pioneer Park started open March/April 2020

Jan 2020: Final Phase 1 residential parcel (H13) received (Taylor Wimpey)

Feb 2020: First Residential parcel of Phase 2 approved for 406 homes and commercial space (Urban Splash).

May 2020: Outline apps for phases 3A and 3B received.

Jun 2020: Northstowe Town Centre Strategy approved

Aug 2020: Work started on Inholm

2.2. Development Plan Documents

Northstowe Area Action Plan (2007)

The Northstowe AAP sets out the planning policies to guide the development of the new town of Northstowe, a proposed new town, north of Cambridge. The Northstowe AAP was formally adopted on 19 July 2007.

Critical policies of relevance to the Site include: policy D2 (local centres), and policy D4 (employment). Relevant points from each, regarding the development of the Site, have been included in the summary table at the end of this section.

Development Framework (2012)

The Northstowe Development Framework Document was approved in 2012 and refreshes the original plans and proposals for Nortstowe as outlined originally in the Area Action Plan. This includes an indicative high-level masterplan for Northstowe, as well as overall principles for development. These are structured around a set of key themes which includes: community, climate, connectivity, and character.

South Cambridgeshire Local Plan (2018)

Policy SS/5 of the South Cambridgeshire Local Plan considers Northstowe a strategic site, and has set out new policies that refresh and update the relevant development plan documents. This policy specifically relates to Policy NS/3 (1g) of the Northstowe AAP relating to potential extension land (where phase 3b is now intended to be delivered).

Policy SS/5 states: 'the reserve land identified in the Northstowe Area Action Plan (AAP) is allocated as an extension to the site of the new town of Nortstowe. It will provide the 10,000 homes allocated in the AAP at an appropriate density and design and will not increase the overall number of homes.[1]'

1 p.64, South Cambridgeshire Local Plan (2018)

2.3. Emerging Policy

Cambridge City Council and South Cambridgeshire District Council are working together to create a joint Local Plan for the 2 areas – which they are referring to as Greater Cambridge. There will therefore be a joint Local Plan, and it will ensure that there is a consistent approach to planning and building across both areas over the next 20 years.

CCC will hold the next formal public consultation, on the preferred options for the Local Plan, in summer or autumn 2021.

The current identified options for the emerging local plan consider: a Local Plan that runs ahead of the North-East Cambridge Area Action Plan (option 1), or to align the Local Plan and the North East Cambridge AAP processes (option 2).

Outline Application

The proposed Local Centre and Employment Zone sits at the heart of Phase 1 of Northstowe. This was the subject of an outline planing application following the adoption of Northstowe's Area Action Plan (AAP) and Development Framework Document (DFD).

The Phase 1 Outline Planning Permission reference is S/0388/12/OL, which was approved on the 22nd April 2014.

As part of the discharge of conditions for the outline application, a Design Code was required. This has been submitted and approved by the Council and sets out the approach for the Mixed Use Centre and Employment Zone.

Section 106 Agreement Plan, showing proposed location of Recycling Centre

2.4. NHS Healthy New Towns

Northstowe is one of 10 demonstrator sites within the Healthy New Towns programme, in which the NHS is exploring how the development of new places could create healthier and connected communities with integrated high-quality services[1].

The Northstowe Healthy New Town was a joint bid led by Cambridge Uni. Hospitals NHS Foundation Trust, South Cambridgeshire DC and the Homes and Communities Agency. The programme will run for 20 years from first occupation in 2017, with priorities around coping with an ageing population, and addressing obesity.

Vision

As a healthy new community Northstowe will aspire to: provide housing fit for an ageing population; to treat more people locally in the community; and to tackle obesity through providing inclusive neighbourhoods with good cycling / walking connections and excellent access to facilities and open space.

What has Northstowe done so far?

- Developed a Healthy Living, Youth and Play strategy
- Co-location of non-medical advice (Citizen's Advice Bureau) in Longstanton branch practice
- Produced research on older people's housing needs

What do Northstowe plan to do in the future?

- Demographic modelling of resident needs and health
- Co-location of health/community facilities and full transition plan for primary care.
- Scoping of contract for primary care at scale.
- Finalise design of health campus / community hub
- Develop individualised travel plans for new residents.

1 www.england.nhs.uk/ourwork/innovation/healthy-new-towns/demonstrator-sites/northstowe/

2.5. Recycling Centre

A section 106 Agreement requires the provision of a Household Waste Recycling Centre within Phase 1. This would be located broadly within the area to the north of the Site, as indicated within the figure provided attached to the completed agreement. The triggers and requirements of this clause, and others within the s106 require further scrutiny. A deed of variation to the s106 may be required dependent on the proposed development and phasing for the local centre.

The policy context for the recycling centre is contained within Policy CS16 of the Cambridgeshire and Peterborough - Minerals & Waste Core Strategy Development Plan Document (Adopted July 2011)[1]. This policy has outlined broad locations for a network of household recycling facilities easily accessible to local communities, and includes Northstowe. The policy expects new development to contribute to the provision of household recycling centres with contributions to be consistent with the RECAP Waste Management Design Guide[2].

A consultation was held in June 2021 regarding a new household recycling centre in Milton. This may provide an alternative to the provision at Northstowe but further guidance is required to clarify this matter.

1 www.peterborough.gov.uk/council/planning-and-development/planning-policies/minerals-and-local-waste-plan/mwlp-examination
2 www.cambridgeshire.gov.uk/business/planning-and-development/planning-policy/recap-waste-management-design-guide

2.6. Sustainability

As part of the development of the Northstowe masterplan, a number of key documents have been produced setting the vision and objectives and strategies for the proposed new town in regards to sustainability. In parallel, national and local policy have evolved since the inception of the project and define minimum requirements and objectives for development.

Water Resources and Flood Resilience

The Northstowe Area Action Plan (2007) sets out the objectives for the development of the new town and includes policy NS/21 - Land Drainage, Water Conservation, Foul Drainage and Sewage Disposal. The proposed drainage strategy included a series of channels within green corridors and use of balancing ponds to mitigate flood risk. The strategy incorporates water conservation including achieving between 33% and 50% reduction in water consumption from baseline.

Northstowe Development Framework Document Sustainability Appraisal (2012) sets the objectives relating to water consumption and ensuring environmental resilience to climate change relating to water. The strategy aims to reduce existing flood risk in Oakington and Longstanton by attenuating peak flood flows on the Longstanton Brook and Oakington Brook.

The Phase 1 FRA (2012) outlines the drainage strategy for Phase 1. This includes the use of a telemetry system to ensure that there is no discharge from the site when the nearby Beck Brook and Cottenham Lode are in flood condition. This strategy required significant storage, primarily provided by new balancing ponds by Hatton Road and the Water Park to the East of the site. The Utilities Strategy (2012) established that the capacity of the foul network had to be increased to cater for Northstowe as well as urban expansion at Cambourne. Foul drainage flows from the development are to be taken to Uttons Drove Sewage Treatment Works to the southwest of Longstanton. A pumping station is located at the northern end of the site.

The South Cambridgeshire Local Plan (2018) sets out the current requirements for the sustainable provision of water at a suitable quality, that does not negatively impact the local hydrology. Cambridgeshire Flood and Water SPD, adopted in 2018, and the Greater Cambridge sustainable Design and Construction SPD, 2020 give further guidance. The Northstowe Development Principles (2020) states a water efficiency requirement to achieve at least 3 Wat 01 BREEAM credits.

Energy and Carbon

The Northstowe Area Action Plan (2007) sets out the development principles and policies for the development to be exemplar in energy efficiency and low carbon design, accommodating the impacts of climate change,

The Sustainability Appraisal (2012) sets out the objectives to promote sustainable energy use and reduce greenhouse gas emissions. The Energy Statement (2012), defines further aims to exceed sustainability standards. Proposals include 31% reduction in CO2 over 2006 building regulations, with 65% of Phase 1 being built to the Zero Carbon Homes standard. 11-15% low carbon/renewable energy generation was proposed, and in addition a viability study was undertaken for inclusion of wind turbines which could increase renewable energy generation by an additional 20% for Phase 1. A micro-generation strategy was developed for energy provision in residential buildings in preference to widespread district heating and a viability assessment was also undertaken for use of local district heating and Combined Heat and Power (CHP) for non-residential buildings.

The South Cambridgeshire Local Plan (2018), promotes sustainable developments and includes requirements for reduction of carbon emissions of at least 10% through for generation of renewable and low carbon energy. It is required to conserve and enhance the natural environment as part of any development through use of green infrastructure. Guidance on meeting these requirements is outlined in The Greater Cambridge Sustainable Design and Construction SPD, 2020.

In 2019 South Cambridgeshire District Council Declared a climate emergency and in 2020 produced their Zero Carbon Strategy. Further policy is currently being developed to support the transition to net zero carbon emissions by 2050. A recent change to procurement is the requirement for monitoring of carbon emissions and submit plans to achieve net zero carbon. The councils' commitments include continuation of investments in renewable energy projects. The Northstowe Development Principles (2020) sets out proposals for non-residential buildings to achieve BREEAM excellent with at least 10% of the buildings regulated energy coming from on-site renewable or low carbon energy. Buildings are to be designed for resilience to climate change and be easily adapted for future uses or changes.

Health & Wellbeing

The Sustainability Appraisal (2012) defines objectives to reduce emissions of pollutants, maintain and enhance human health, enhance public places. The South Cambridgeshire Local Plan 2018 requires the submission of a health impact assessment for development with over 1,000m2 of floorspace. The Local Plan also sets out requirements for lighting, noise, air quality and emissions.

The Greater Cambridge Sustainable Design and Construction SPD 2020 gives guidance and support on the design of spaces to promote health and wellbeing, including public realm, views, air quality, daylight, sunlight, and thermal comfort. The Development Principles (2020) set out aspirations for the development to be designed to enhance health and wellbeing of users, including use of standards such as WELL.

Waste & Circular Economy

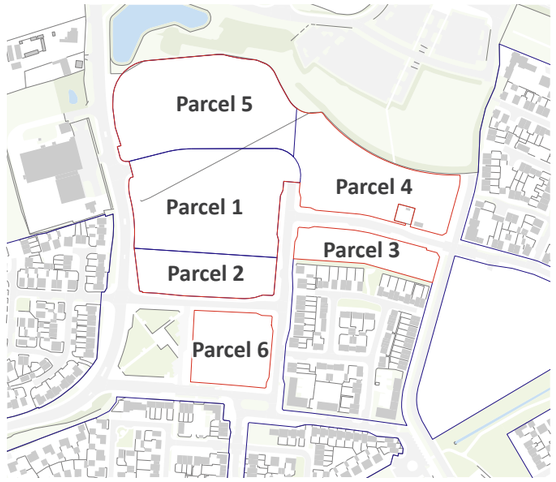
The Northstowe Area Action Plan (2007) aims for the development to be exemplar in sustainability. Objectives and relevant policy include the reuse of existing materials on site and to recycle construction waste, requiring a re-use and recycling scheme. Construction spoil retained on site must benefit the development, such as for noise barriers, flood protection and ecology enhancement.

Objectives for making the best use of land resources are again set out in the Sustainability Appraisal (2012), including a household recycling facility. This is also included in the Construction Management Strategy (2012) as well as stockpiles for surplus material and topsoil. Measures include agreements with suppliers for recovery and disposal of products and regular toolbox talk to raise awareness and share best practice relating to waste. Where feasible, demolition material will be recycled for use as primary aggregate. The Development Principles (2020) identify Parcel 5 of the Enterprise Zone and Local Centre as designated for a household waste recycling centre, although we understand that the requirement for this facility is being reviewed.

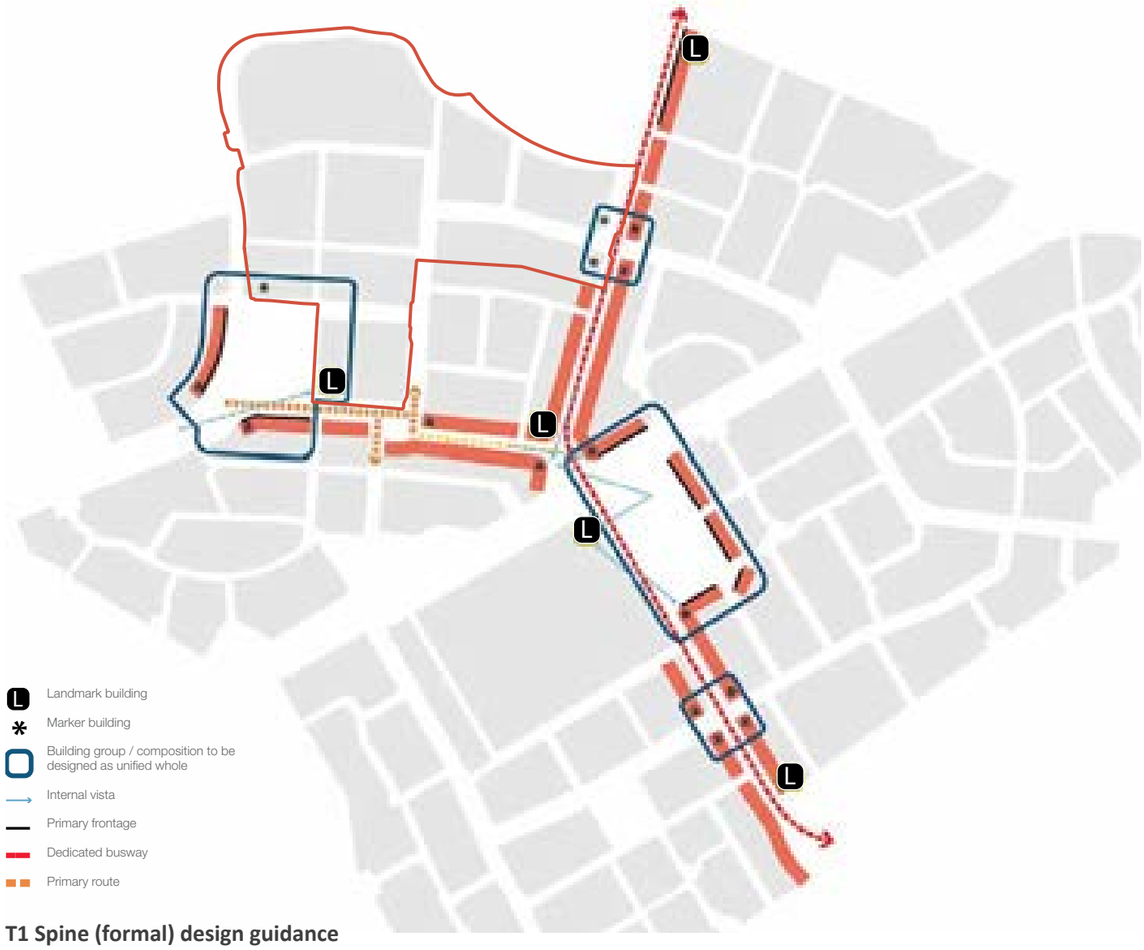
South Cambridgeshire Local Plan 2018 sets out further policy to minimize waste and promote reuse and recycling. In 2019 South Cambridgeshire District Council Declared a climate emergency and in 2020 produced their Zero Carbon Strategy, including a commitment to reduce waste by improving recycling facilities.

Northstowe Phase 1 Design Code - Specific Site Requirements

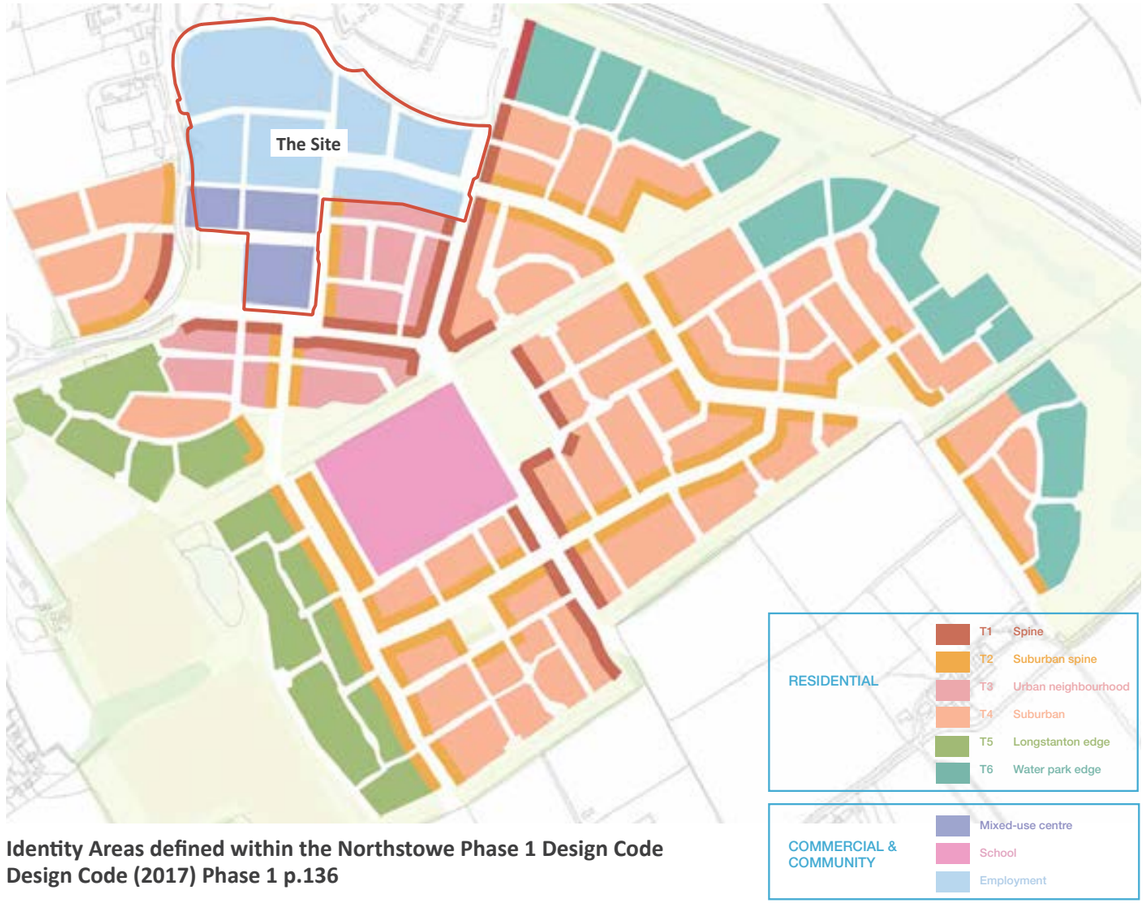
NTS



Employment Zone design guidance



T1 Spine (formal) design guidance



Identity Areas defined within the Northstowe Phase 1 Design Code Design Code (2017) Phase 1 p.136

2.7. Phase 1 Design Code

Design Code

The Phase 1 Northstowe Design Code outlines both general guidance for development throughout Northstowe, Phase 1-wide guidance, and specific guidance for sites and character areas highlighted within Phase 1.

In regards to the Local Centre, the Design Code emphasises the location of the Site by the B1050 for 'maximising passing trade and helping to ensure that it stands the best chance of becoming established early on in Phase 1[1].' It should be noted that this has not been the case as the Local Centre would now be coming forward for delivery in the later stages of Phase 1. A significant number of residential units have already been delivered, together with new and improved pedestrian and cycling routes to Longstanton. This has created a large existing local catchment to better support the deliver of the Local Centre. Specific design guidance and objectives provided for the Local Centre within the Design Code are included in the table on the following page.

Regarding the Employment Zone, the guidance intends for this area 'to become a positive and attractive northern commercial 'gateway' to the future town[2].' Specific design guidance and objectives provided for the Local Centre within the Design Code are included in the table on the following page.

Additional guidance has been provided for the 'T1 Spine', which is a formal spine along Pathfinder Way and the dedicated bus-way, which has adjacencies to the Site. Guidance for this route include the appropriate location of landmarks and marker buildings, as well as an outline of areas where buildings are to be designed as a unified whole. This guidance has been included within the table on the following page.

1 10.1, Northstowe Phase 1 Design Code
2 10.4, Northstowe Phase 1 Design Code

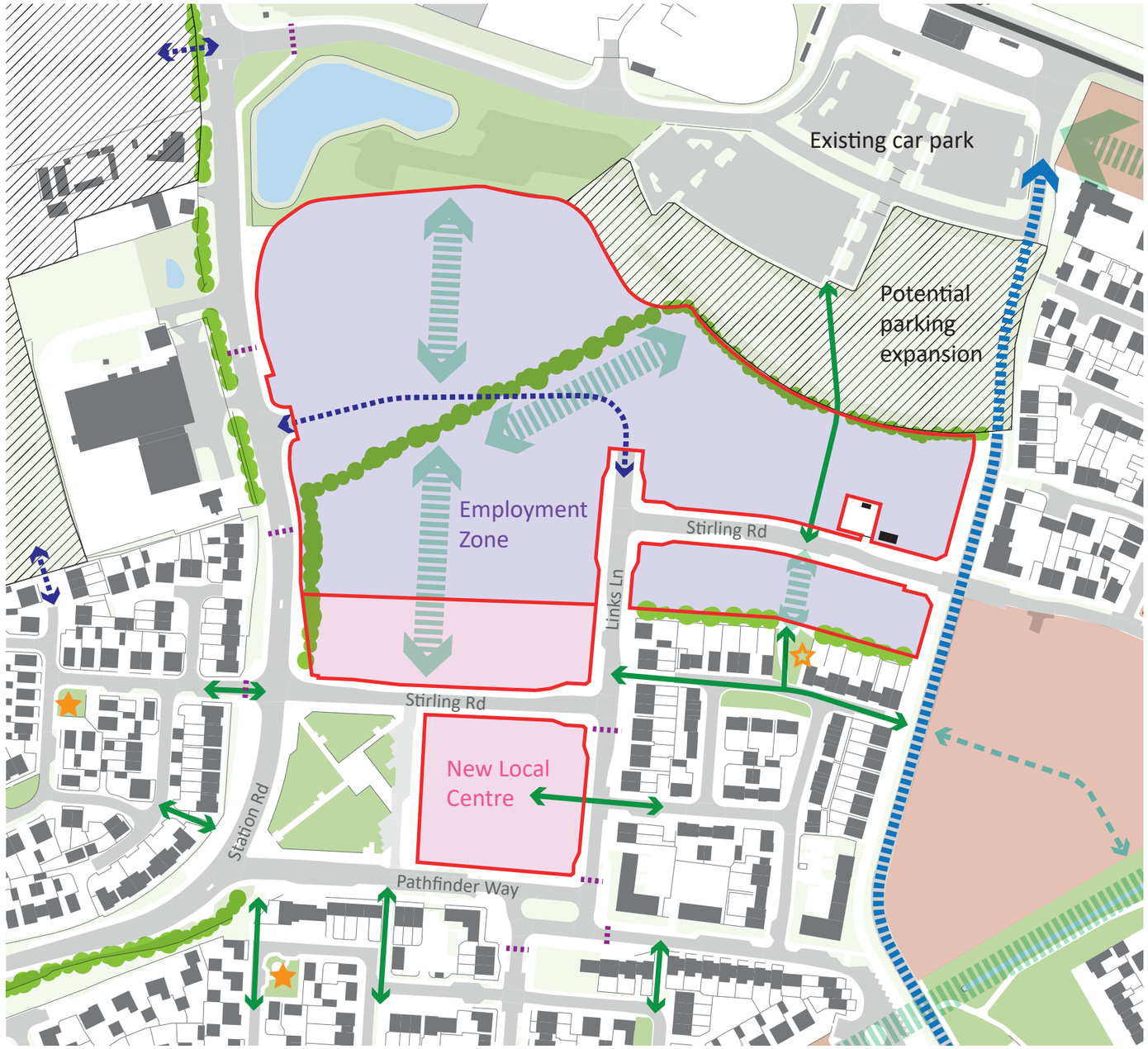
Applicable Parcels	Design Code Requirements

Employment Zone	• The Employment Zone sits within Identity Area 'Employment', with the eastern edges of parcels 4 and 3 also forming part of Identity Area 'T1 Spine (formal);
	• Buildings along the eastern edges of parcels 4 and 3 should be 'marker buildings' and be designed as a unified whole with the corner buildings of parcels h5 and h6. Building heights of these marker buildings should 'mirror' those buildings on the other side of the spine road;
	• The Employment land of approximately 5ha is intended to become a positive and attractive northern commercial gateway to the future town;
	• The proposed mix of Employment comprise:
	  * B1 (office), B2 General Industrial: 3.28ha
	  * B8 Storage and distribution: 0.36ha
	  * Household Waste and Recycling centre: 1.25ha
	• B1 employment must be located next to the southern residential edge (parcels 3 & 4);
	• Along the interface with the employment and residential, these uses should back onto one another so that the rear gardens of the properties abut the rear parking for the employment. (parcel 4);
	• Covered and secure cycle parking must be provided;
	• In general terms, vehicle parking for this zone will be provided inside an outer ring of buildings defined in a perimeter block;
	• Any B2 ad B8 uses should be located next to the Household Waste Recycling Centre;
	• A landscape buffer should be provided for trees on the frontages of B2 and B8 uses;
	• Overall, it is anticipated that the buildings in the employment zone will be contemporary in design, using modern cladding materials such as steel and glass. Where employment buildings are located next to residential areas materials should be designed to match. Increased use of brick (buff/pale yellow) is envisaged in this situation;
	• Ancillary structures such as the substation and pumping station should consider appropriate landscape treatment/planting for screening;
	• Employment buildings can be up to 13m (to 3 storeys) and should explore the provision of green roofs/walls.

Local Centre	• The Local Centre sits within Identity Area 'Mixed-use centre', with those buildings that face directly onto the Green also sitting within Identity Area 'T1 Spine (formal)'
	• Buildings fronting onto the green must be designed as a unified whole with buildings fronting parcels H1, H2 and H3. This includes a potential 'marker' building along the northern edge of the Green in parcel 2, and a 'Landmark' on the south-eastern corner of the Green (parcel 6) that responds to an internal view from those arriving to Northstowe from the south on the B1050.
	• The land identified for the Local Centre is 1.2ha
	• The local centre comprises of:
	  * Ground floor retail of up to 1500sqm (net) and should be visible from the B1050
	  * In addition, there is potential for further 450sqm commercial retail/leisure/food&drink/community/health and other appropriate uses
	  * Suitable car parking for retail commercial. Additional on-street parking to be provided around the square
	  * A potential informal MUGA (although one has now been provided in Pioneer Park)
	• Opportunity for landmark feature, such as a clock tower associated with the community building, should be considered as part of the detailed design. The outline planning permission allows a structure up to 25m in height
	• A high-level enclosure should be achieved around public space
	• Civic buildings (such as the community building) must be distinctive buildings of architectural merit. The potential to increase scale and massing should be considered through interesting rood profiles or similar feature elements

Site Opportunities & Constraints

NTS



Site opportunities and constraints summary - NTS

2.8. Site Context

Landscape & Environment

- The Site is relatively flat across all parcels, however there exists localised raising of land within the north-west corner of the Site, reflecting made ground on the site of a former factory;
- Parts of the site boundary are buffered to surrounding uses with existing mature vegetation, including along part of Station Road, and around the north-eastern boundary towards the Longstanton Park and Ride;
- A line of mature vegetation, a mix of hedges and trees of varying quality, cuts across the site, marking the boundary of the former golf course on site;
- Development within Parcel H4 (Bovis) has provided a 5m landscape buffer along its northern-edge;
- An attenuation pond lies to the immediate north-east of the Site, and could be integrated within the scheme as a landscape feature.

Movement & Access

- The Site is lined along the western edge by Station Road/B1050, which is a busy vehicular route with little buffering to traffic provided by street trees;
- Major primary vehicular streets, serving the Northstowe Development, run on either side of parcel 6 of the site, and will accommodate a significant amount of the vehicular traffic serving Northstowe;
- Sterling Road, Link Lane and Wellington Road, running along the eastern edges of the site, also represent a key north-south route for Northstowe;
- The junction of Pathfinder Way/Link Lane, is a significant roundabout which creates severance between the site of the Local Centre and surrounding development, due to the use of a roundabout rather than four way junction arrangement;
- Proposals for a future connection between parcels 1 and 5 in the Site will contribute to the permeability of the site;
- Access to Longstanton Park and Ride is via a temporary path through Parcel 4 (to be integrated into development). A desire line across Parcel 3 to parcel H4 and can be integrated into forthcoming development;
- Pedestrian links south towards the Western Sports Hub is limited in terms of prominence and way-finding from the Local Centre site.
- Cycling provision is yet to be properly implemented around the site, and way-finding provision is similarly poor towards surrounding key uses such as the Park and Ride, Pathfinder Primary School, Longstanton, and Northstowe Secondary College;
- The dedicated busway is intended to run along the eastern edge of parcel, providing a key central pedestrian and cycle route through Northstowe.

Public Spaces

- The Green is the major public space serving the site, and is well-used and activated by a program of temporary uses, but lacks amenity in the terms of shading, protection, and buffering from sun, wind and surrounding traffic;
- The junction of Pathfinder Way/Link Lane is designated a principal square, but its currently dominated by traffic;
- Streets already provided around the Site fail to provide significant street trees or landscaping that would help contribute to the creation of places;
- A small play-space along the northern edge of parcel H4 is incomplete, but could be integrated within forthcoming development in parcel 3;
- The Site and the Green does not currently integrate with the wider Northstowe landscape framework (including Green Link and Linear Park).

Townscape & Frontage

- Completed buildings within parcels H1, H4, H3 and H2 provide frontage to the Site, including significant 4-storey apartment buildings to the south;
- The set-back of buildings within parcel H1 from Station Road contribute to the poor public realm on the western side of the street, and severance to the Green;
- All buildings fronting onto the Site are residential, but all benefit from parking provision to the rear, helping to create buildings that front directly onto the street.

Site Analysis Summary

NTS

3. Vision

3.1. Masterplan Concept

The Design Principles for Northstowe focus on three main principles: Health & Well-being, Integration with Nature and Community Prosperity. The following principles were strongly supported by the residents during Phase 2 of engagement. For a full report of the engagement process, please see Appendix xx.

“Northstowe town centre will be the beating heart. Our award-shortlisted design code provides the framework for a high-quality, mixed-use town centre, laid out so people can find their way easily to excellent facilities within convenient walking distance.”

Mike Goulding, Head of strategic land, Homes England

HEALTH & WELL-BEING

- Enabling walking and cycling as major modes of movement and access;
- Promoting the integration of effective public transport;
- Reducing dependency on private cars;
- Encouraging physical activity with indoor and outdoor recreation options;
- Promoting safe access to connected green walking/ cycling routes;
- Creating inclusive public spaces that encourage social interaction and a sense of belonging;
- Enabling good access to healthy food and food growing options;
- Providing good social infrastructure and access to a wide range of community services including dedicated community spaces;
- Ensuring buildings, spaces and places are inclusive for all people.

INTEGRATION WITH NATURE

- Connecting the site into the wider green network of Northstowe;
- Creating nature trails through the site, connecting to the surrounding area;
- Integrating SuDS and other water features into the new public realm;
- Building in flood resilience with integrated site infrastructure;
- Future-proofing for climate adaptation with opportunities for green/blue links and potential for food-growing in the public realm;
- Extending street tree planting throughout the area;
- Promoting biodiversity planting within landscaped spaces and in all new developments.

COMMUNITY PROSPERITY

- Delivering jobs and attracting new businesses to Northstowe, through high-quality employment spaces supported by excellent amenities;
- Supporting independent local businesses with a range of flexible spaces, including retail, food and beverage, office and leisure uses;
- Encouraging a circular economy by supporting synergies between business and community;
- Creating an attractive local centre core, integrating residential and employment areas;
- Providing flexible, usable outdoor spaces that can be activated throughout the day and evening to support community events;
- Providing an inclusive local centre that caters for the needs of different age groups, abilities, new and existing residents;
- Creating synergies with Northstowe Town Centre by providing complementary uses.

Illustrative Masterplan

100% Offices (Employment Zone)

- Pathway
- Bicycle path
- Road
- SUDs/linear raingarden
- PV Roof
- Biodiversity roof
- Permeable car parking
- Rain garden
- Existing tree
- Design tree

N

4. Masterplan

Schedule of accommodation:

Employment Zone

Land use	sqm (GEA)
Office	53,859

Local Centre

Land use	sqm (GEA)
Community Centre	1,760
Retail	4,984
Office	3,154
Residential	14,783
TOTAL	**76,940**

Note: data about public green open space area to be added

4.1. Illustrative Masterplan

The preferred option has developed from in-depth discussions and extensive engagement with a range of key stakeholders.

This LCEZ Masterplan outlines a framework of delivering the first Local Centre in the north of Northstowe and an Employment Zone that acts as the northern commercial gateway to the new town.

Masterplan strategic moves

Based on the brief, baseline analysis and the vision outlined earlier in this report, the following masterplan strategic moves were developed:

- provide a northern commercial gateway to Northstowe;
- capitalise on the key opportunities to create green corridors across the site with routes along them;
- activate pedestrian and cycle connections with existing neighbourhoods;
- provide much needed facilities for both residents and employees;
- create synergies across uses such as F&B, small retail, leisure and education, which can improve the quality of life of residents and the attractiveness of the Local Centre for local employees;
- connect the Longstaton Park & Ride to the existing Green open space to the south of the site;
- connect the Longstaton Park & Ride to the existing residential neighbourhoods;

The masterplan allows for building typology flexibility by focusing on the public realm and edges rather than being prescriptive of building forms. This approach allows for a variety of floorplates dimensions, or of placement of blocks within parcels. This enables a design that is responsive to the eventual delivery strategy and preferences of any future delivery partner.

The masterplan promotes a shift towards sustainable and active modes of travel, prioritising inclusive and comfortable streets in which it is safe and preferable to walk and cycle. Reduction of parking provision and through routes help address car dependency while the provision of public transport and micromobility is enhanced. By promoting a mix of uses and sustainable servicing strategies, LCEZ helps reduce travel need while accommodating the everyday needs of the local community.

The public realm and landscape strategies create an urban place in a landscape setting with high quality landscape and public green spaces. Minimising car movement and integrating cycle and pedestrian movement with green and blue infrastructure are priorities that drive the masterplan design. The masterplan sets out the principles for integrating blue, green and nature inclusive concepts in the public realm by creating synergies for a healthy place to live and work.

The integrated provision of the Employment Zone and Local Centre will bring economic activity, community infrastructure and a sense of place to Phase 1 Northstowe while also responding to the local context and following aspirations for Net Zero Carbon development, embedding circular economy principles and addressing challenges around water stress in the Cambridge area.

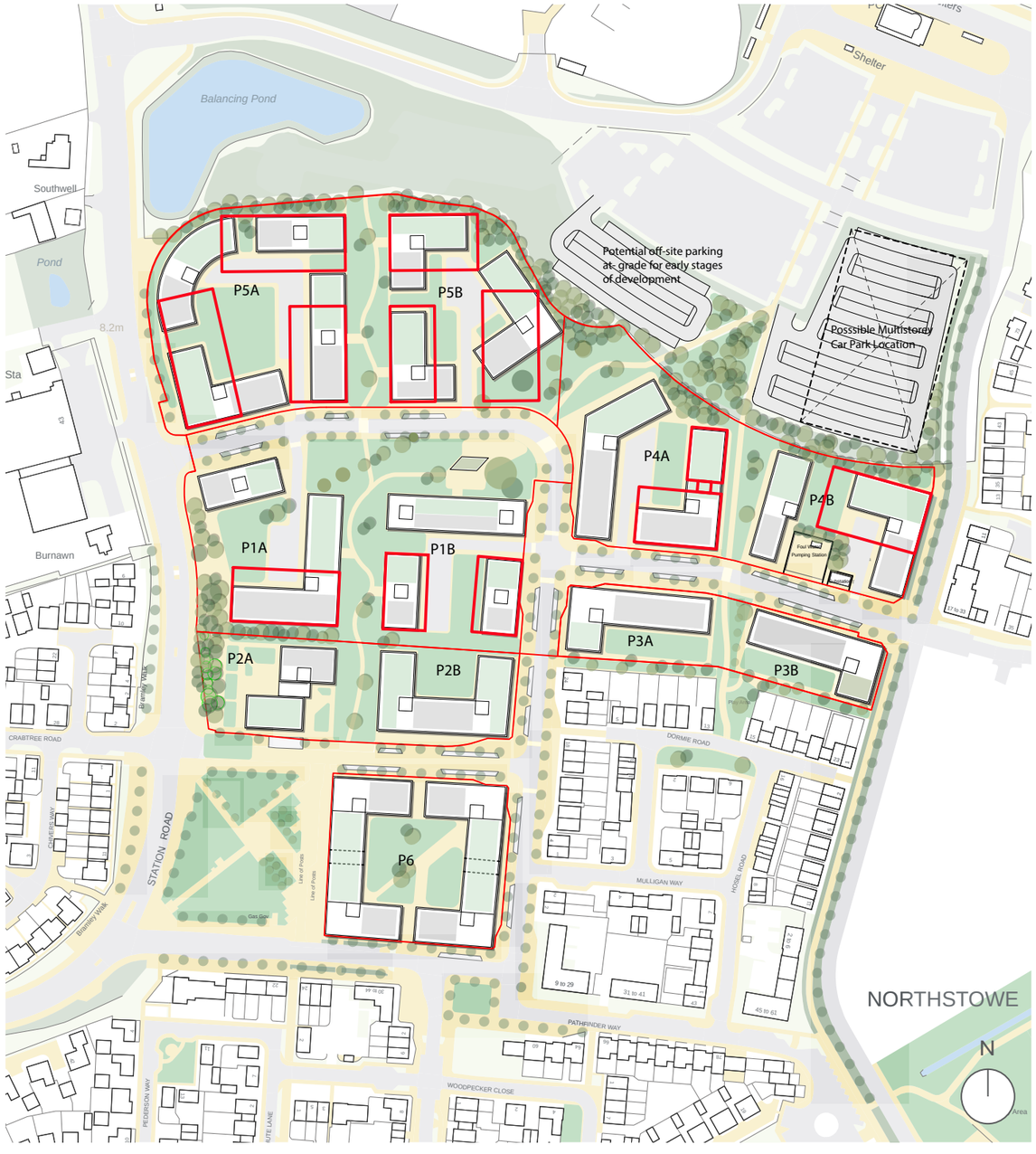
The framework is aligned with national and local policies to deal with the challenge of climate change, loss of biodiversity and bring opportunities to build social value, pathways into new careers and opportunity for the wider region.

The LCEZ site is envisioned to be the first local provision of amenity in Northstowe, which will be complemented by further provision in subsequent wider masterplan phases.

Masterplan Option 2

Mix of Employment types: offices and light industrial/
R&D (Employment Zone)

Masterplan Options 1&2
Footprint Comparison



4.2. Adaptive Strategy

Multistorey parking option

The masterplan was developed to demonstrate a clear vision and framework for the evolution of the LCEZ, but without being overly prescriptive on the types of uses that will be delivered on the plots in the Employment Zone and keeping in mind the strategic aims of SCC and the masterplan key design principles.

Following the 'market knows best' approach for the EZ rather than a prescriptive one curates the optimal types of uses and amenities required at the Local Centre. Any fixed requirement that the SCC may have around flexible workspace and alternative housing tenures would best be tested with potential partners to understand viability and deliverability and the extent to which they will integrate and contribute positively to the LCEZ and the wider area.

In developing the masterplan a stress testing exercise with different building types was included, done by PRD. The types tested two options, one for were commercial office use buildings and one for a mix of office uses with mid-tech light industrial, science and technology oriented use buildings.

The results illustrated that different use mixes are possible without compromising the overall masterplan structure and key design principles.

There are multiple permutations of occupational users that could theorertically locate within the EZ, so for this exercise the focus has been on these two options as the recommended options, that also align with the market engagement and market data collected by PRD. It can be assumed that alternative combinations of office and mid-tech uses (e.g. 90% office, 10% mid-tech) within the scheme could be delivered with predictably similar financial returns.

There is evidence within the literature review done by PRD that the demand for science/ R&D/tech space within the Greater Cambridge area remains high. Whilst these uses are a burgeoning area, particularly within Cambridge and around the OXCAM Arc, they are still considered to be a specialist market sector. There are risks in being prescriptive around this, or any other type of use, as it needs to be tested with the market, and so taking this use-type to masterplan level would require a clearer vision that can only derive from more comprehensive conversations with the investors and developers that are active in these sectors.

The masterplan key design principles allow for inbuilt block flexibility. This way, regardless of the use mix required by the delivery partner or tenants, the framework principles will remain valid.

The inbuilt block flexibility is especially focused in the Employment Zone, while the Local Centre built form is to be more prescribed, to ensure delivery of key local amenities and residential provision.

LCEZ Northstowe Masterplan with HWRC option

4.3. Household Waste Recycling Centre (HWRC)

It is proposed that a Household Waste Recycling Centre (HWRC) will be located in Parcel 5, adjacent to the Northstowe Enterprise Zone (EZ). The EZ comprises of Parcels 1, 3 and 4 and is allocated for higher density employment uses, typically contained within office buildings.

PRD has been commissioned to assess the impact that the inclusion of the HWRC may have on the implementation and future success of the EZ. The EZ is yet to be developed and has historically had difficulty in progressing forward.

PRD have used this emerging masterplan to identify the buildings within Parcels 1 and 4 that are most likely to be impacted by the presence of the HWRC, and also to identify the accommodation potential of Parcel 5 if it was instead allocated to office use in line with the remainder of the EZ.

Estimated Northstowe Enterprize Zone capacity

Land use	Commercial Size (sqft)
Northstowe EZ with HWRC in Parcel 5	330,000
Northstowe EZ with Commercial in Parcel 5	515,000

source: PRD

Once complete, the Northstowe EZ will be a regionally significant driver of economic value for the region, providing capacity for 2,800 jobs and c.£242 GVA generation per annum.

Delivery on this scale will support aspirations for Northstowe to evolve as a sustainable and economically balanced community, providing a range of employment opportunities across the skills and occupational spectrum. The types of space provided will help to deliver against regional aspirations to grow the tech, scientific and creative economies.

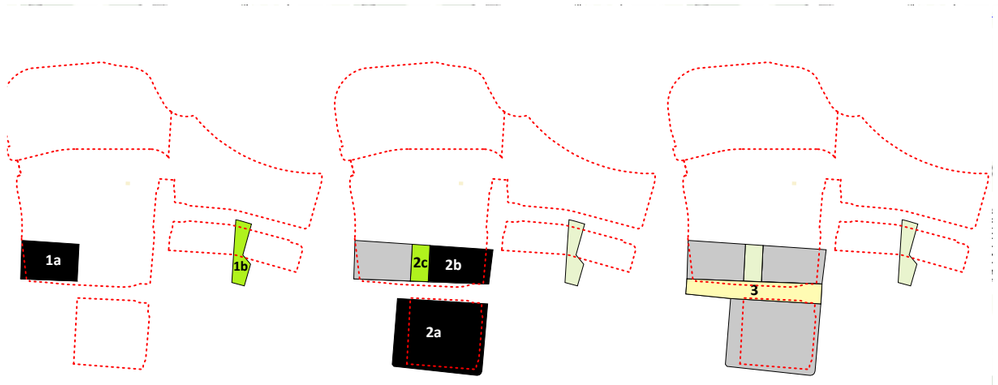
Use of Parcel 5 for the HWRC will direct extinguish a significant amount of economic capacity.

The direct, onsite adverse impact is estimated to be in the region of c.900 jobs, and c.£70m GVA per annum (around one third of total economic capacity across the EZ). Loss of this level of economic capacity will also have an adverse multiplier impact - with reductions in the levels of local and regional supply chain and employee spending supported by the EZ.

Use of Parcel 5 for the HWRC will also erode the ability of the wider EZ to achieve its full economic potential.

A reduction of 35% in the amount of employment floorspace will impact on the ability to achieve critical mass which is a key ingredient of successful business parks of this nature. Blight impacts associated with the HWRC will also present a challenge to securing tenants and desired rent levels in a highly competitive regional market.

Given the historic stagnation in bringing forward the EZ, there is a strong argument that the EZ opportunity needs every advantage in order to secure interest from external parties and this report concludes that there is the potential for a strongly negative impact by retaining the HWRC in Parcel 5.



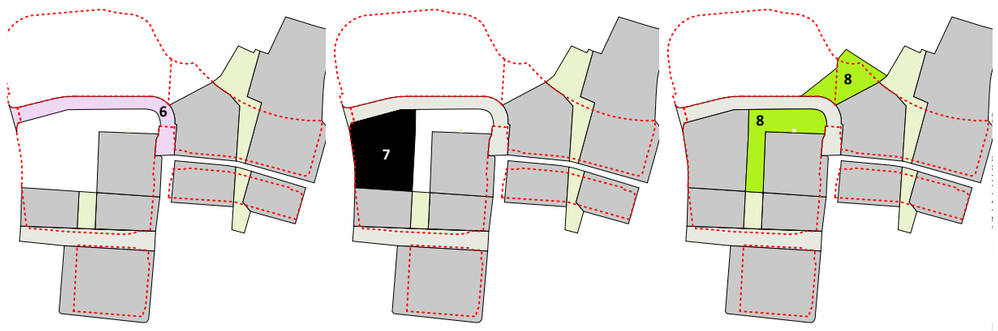
1. Community hub and formalisation of pedestrian route

2. Completion of local centre including first part of the linear park, setting the tone for the rest of the link.

3. Community street

4. Upgrade of route to Park & Ride and first part of the EZ, including surface car park to the north.

5. Further employment block delivered



6. New road enabling development for the last stages of the development

7. Further blocks delivered

8. Delivery of linear park

9. Final areas developed, including additional park section and further car parking if required.

Phasing Strategy DRAFT

4.4. Phasing Strategy

A responsive and practical phasing process is fundamental to ensuring that his lonog-term, strategic masterplan is deliverable and creates an inspiring momentum of transformation from the earliest phases. The proposed phases are not categorical, but set out a logical approach which envisages infrastructure development at each identified phase. Unpredictable market conditions over the lifetime of the masterplan, as well as the procurement and delivery route, require a flexible approach to phasing that can be amended and updated as delivery is underway.

Phasing Strategy principles

- early Local Centre amenity delivery and early delivery of public realm;
- distribute infrastructure investment across the entire course of development of the masterplan;
- focus on places making and early value delivery;
- increase value to residents early on in the process;
- create high quality environments for residents as soon as possible;

Masterplan Phasing

1. Community hub and formalisation of pedestrian route

2. Completion of Local Centre including first part of the linear park, setting the tone for the rest of the link

3. Community street

4. Upgrade of route to Park & Ride and first part of the EZ, including surface car park to the north

5. Further employment block delivered

6. New road enabling development for the last stages of the development

7. Further blocks delivered

8. Delivery of linear park

9. Final areas developed, including additional park section and further car parking if required.

LCEZ Northstowe Masterplan render

5. Design Guidance

5.1. Scope

This Design Guidance has been prepared to guide development within the LCEZ Northstowe to ensure that proposals in this area adhere to and deliver the vision of Local Centre and Employment Zone of Phase 1 Northstowe.

This Design Guidance must be read in conjunction with the Northstowe Phase 1 Design Code (2014), which it is designed to complement.

This guidance applies to any future development within the defined site boundary of LCEZ Northstowe.

This guidance will apply to all forms of planning permission within the boundary of the defined LCEZ Northstowe area. All applications will need to be accompanied by a statement which demonstrates how proposals have had regard to the recommendations of this guidance. The Design guidance is envisaged to be used by and t inform a range of groups and users including:

- **South Cambridgeshire District Council** - in promoting the LCEZ Northstowe development, in briefing and selecting potential developoment partners, and in championing and promoting proposals within the LCEZ area.
- **Council officers and members** - in negotiating and assessing planning applications;
- **Developers and development partners** - to inform and guide development design;
- **Local community** - to inform expectations of the LCEZ area and to promote the public interest by setting robust requirements for high quality design that promotes public good;

This guidance chapter of the LCEZ Northstowe Masterplan builds on existing local policy as well as incorporating existing and emerging national policy and best practice guidance.

The structure and content of this Design Guidance has been considered within national guidance, including the National Model Design Code and the recently amended NPPF.

The Design Guidance chapter of this document has been structured as a practical tool-kit that provides clear guidance and requirement that are useful to designers and officers.

It is expected that all proposals within the LCEZ Northstowe area accommodate all mandatory requirements outline in this Design Guidance chapter and the majority of the discretionary requirements as well. Where compliance with mandatory coding is not possible, a clear justification for non-compliance must be made and designs must demonstrate how they propose to achieve the vision for LCEZ Northstowe through alternative means.

This guidance chapter is structured to include sections that start with a summary of the vision for each theme, followed by guidance for the sub-sections. This gives clear direction on how the vision of that specific theme can be achieved in design terms. Character area section provides additional detailed guidance for proposals within identified character areas of the LCEZ in Northstowe.

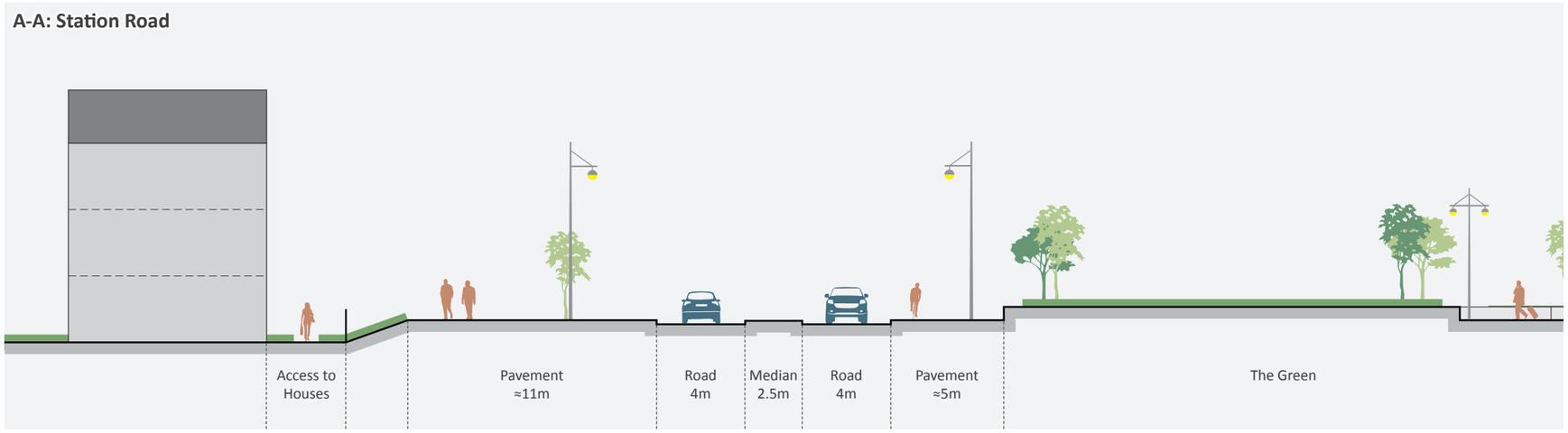
This guidance chapter is structured around the following design themes:

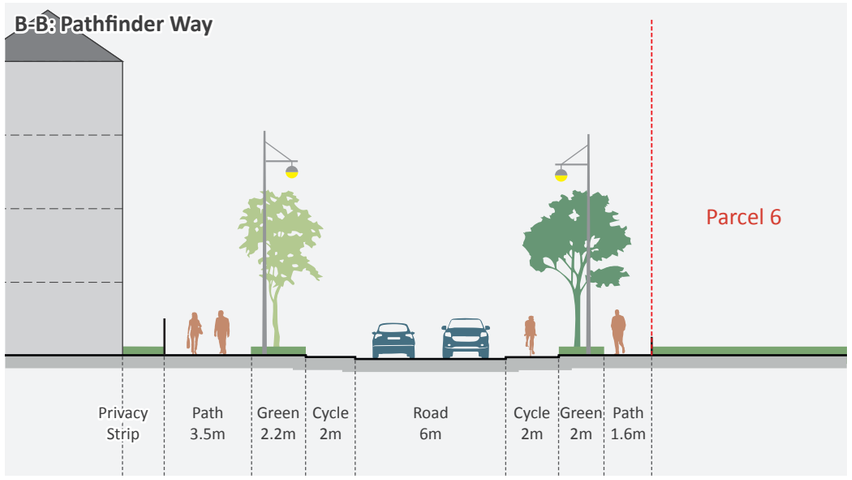
- Townscape & Built Form
- Movement & Access
- Public Realm & Landscape
- Sustainability
- Uses & Amenity
- Character Areas

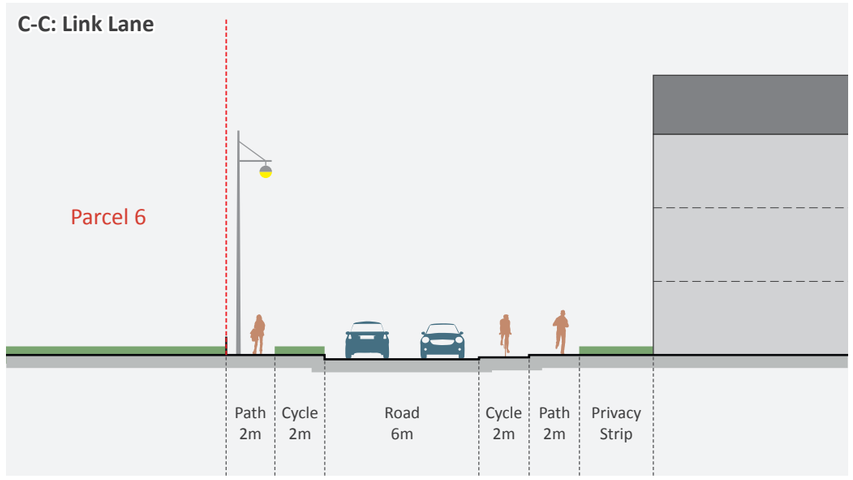
The guidance deliberately focuses on and provides more detail in relation to public realm and movement, in order to allow flexibility on how the individual plots are resolved, depending on the mix of uses preferred by the developer.

Existing & Forthcoming Street Sections

1:250







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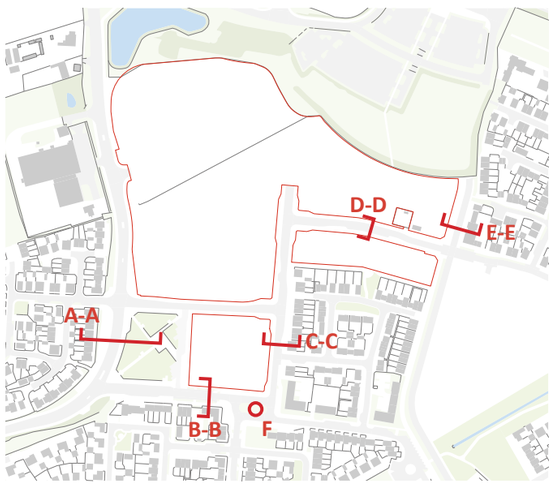
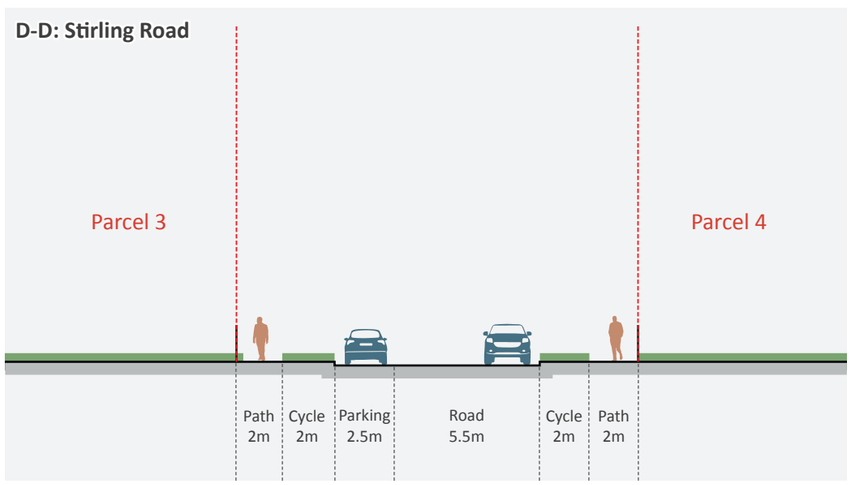
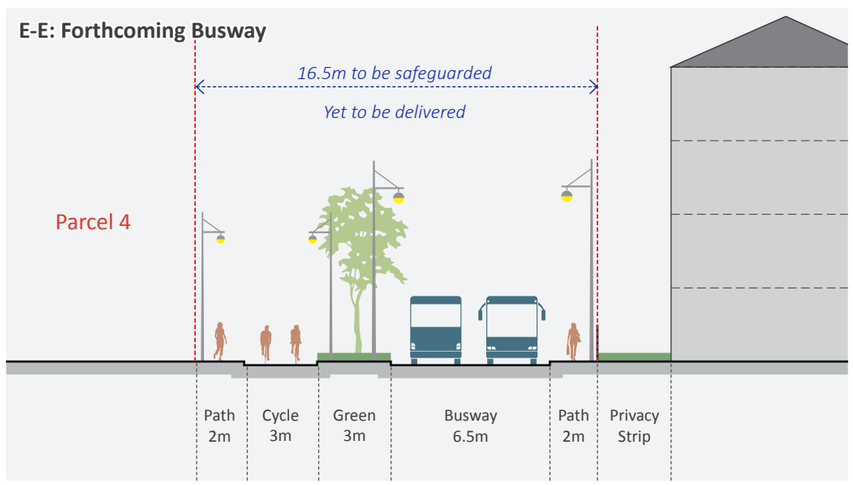






Note: parcel numbers to be added to the key map


Parcel H1 along Station Road


H4 edge along future busway


H2 edge along Pathfinder Way


H6 edge along future busway


H3 development along Pathfinder Way


H6 edge along future linear park

5.2. Townscape & Built Form

The site itself lacks a distinctive built character due to it previouslty being a golf course. This makes the emerging surrounding local context especially relevant to any LCEZ proposal. The local character is largely defined by the Phase 1 Design Code.

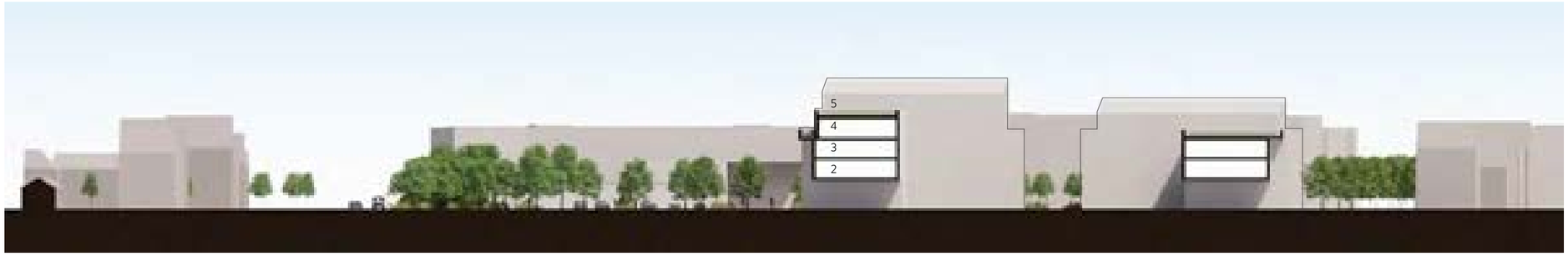
Development around the site has been designed and delivered through a series of parcels. The use of a Design Code provided as part of the wider outline application for Phase 1, has instilled a discernible character to development. This includes a mix of residential building types, mostly two storeys, following similar building forms (simple orthogonal buildings with pitched roofs) and similar material treatments. There are a few examples of four storey apartment buildings around the Site, but these represent the tallest elements, but often exhibit a mass and scale that fails to articulate these buildings as clear landmarks. Given the flatness of the landscape there are opportunities to consider how prominence can be achieved in the location and design of landmarks in the Site.

Design Code 2014

- Buildings along the eastern edges of parcels 4 and 3 should be ‘marker buildings’ and be designed as a unified whole with the corner buildings of parcels h5 and h6. Building heights of these marker buildings should ‘mirror’ those buildings on the other side of the spine road;
- In general terms, vehicle parking for this zone will be provided inside an outer ring of buildings defined in a perimeter block;
- Overall, it is anticipated that the buildings in the employment zone will be contemporary in design, using modern cladding materials such as steel and glass. Where employment buildings are located next to residential areas materials should be designed to match. Increased use of brick (buff/pale yellow) is envisaged in this situation;
- Ancillary structures such as the substation and pumping station should consider appropriate landscape treatment/planting for screening;
- Employment buildings can be up to 13m (to 3 storeys) and should explore the provision of green roofs/walls.;
- Civic buildings (such as the community building) must be distinctive buildings of architectural merit. The potential to increase scale and massing should be considered through interesting rood profiles or similar feature elements;
- Opportunity for landmark feature, should be considered as part of the detailed design. The outline planning permission allows a structure up to 25m;
- Buildings fronting onto the green must be designed as a unified whole with buildings fronting parcels H1, H2 and H3. This includes a potential ‘marker’ building along the northern edge of the Green in parcel 2, and a ‘Landmark’ on the south-eastern corner of the Green (parcel 6) that responds to an internal view from those arriving to Northstowe from the south on the B1050.

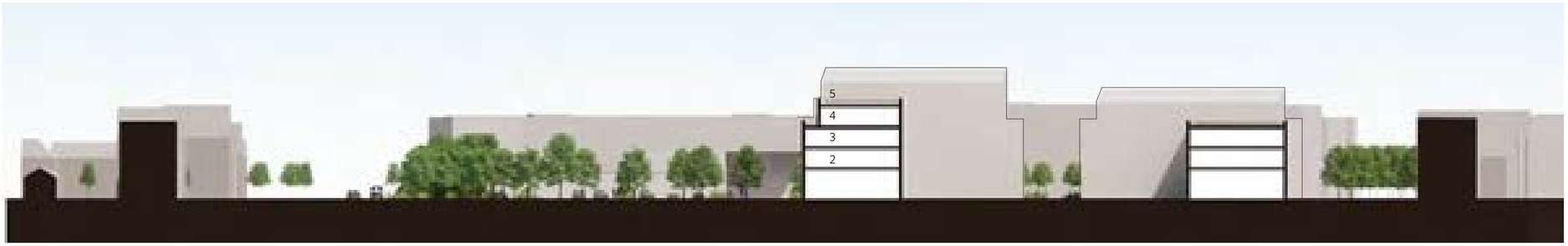
Proposed Street Sections

Section AA (NTS)

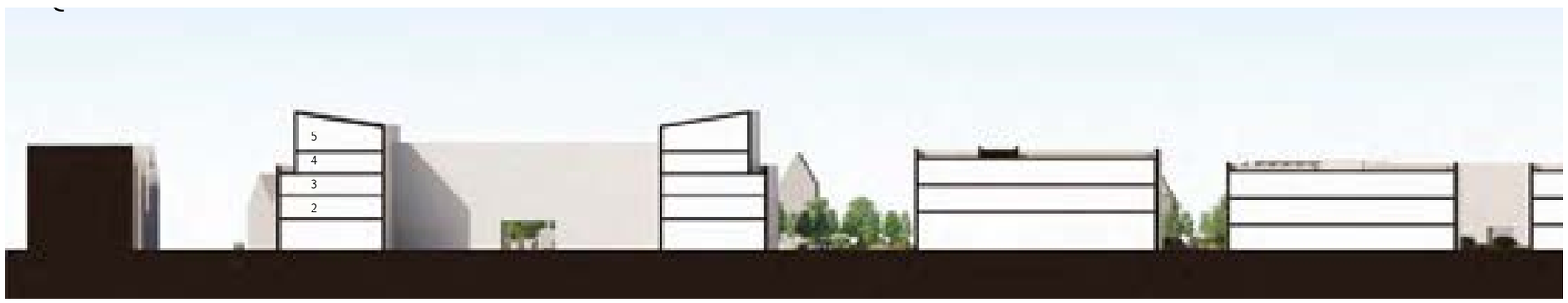


Station Road | 'The Green' public square | 10m | Links Lane

Section BB (NTS)



Station Road | 'The Green' public square with Proposed Community Centre beyond | 10m | Links Lane



Pathfinder Way | 8m | Stirling Road

Design Guidance

Blocks

- The structure of the LCEZ Northstowe blocks responds to existing road patterns and infrastructure, as well as strategic links and existing vegetation. Each block is bound by significant public realm and key routes, creating a resilient framework that supports the flexible development within each block;
- Blocks must be broken down to create several, distinct smaller buildings to support better connected and walkable development;
- Block sizes and geometry should be sympathetic to the existing context and emerging urban grain of Northstowe, in the interests of promoting well-integrated urban design;
- The dimensions and geometry of blocks must support the creation of a well-connected, permeable and walkable Local Centre;
- Development should form perimeter blocks where appropriate, to enable flexible courtyard use in a way that activates surrounding streets and spaces;
- The position, scale and form of cuts in massing must be designed to balance the need to provide continuous, well-designed frontage and the need to provide appropriate sunlight and daylight into the development;
- Most vehicle parking must be provided inside perimeter blocks, away from the public realm and building frontages;

Building Heights

- The predominant building height in LCEZ Northstowe must be 3 storeys, with two Landmark /marker buildings as required by the Design Code (2014);

Key Views

- Along strategic links to visually link the Park&Ride to the Local Centre
- "Internal vista" along Station Road north east towards the Landmark building of the Community Hub

Note: Diagrams showing views to be added

Building Line

- New development should follow continuous building lines set at the back of footways in line with the defined street types provided to ensure the enclosure of streets;
- A small amount of variation of the building line within blocks would be permitted in the interests of articulating visual permeability, daylight/sunlight penetration, and the expression of entrances;
- set-backs from the building line, where appropriate, should be minimal
- Design Code p.10: "A high level of building enclosure should be achieved around the public space [in the mixed use centre]"

Frontages

- New development mist have well-defined forntages that provide clear enclosure to streets and public spaces, in line with the defined street types and public space requirements of the design guidance;

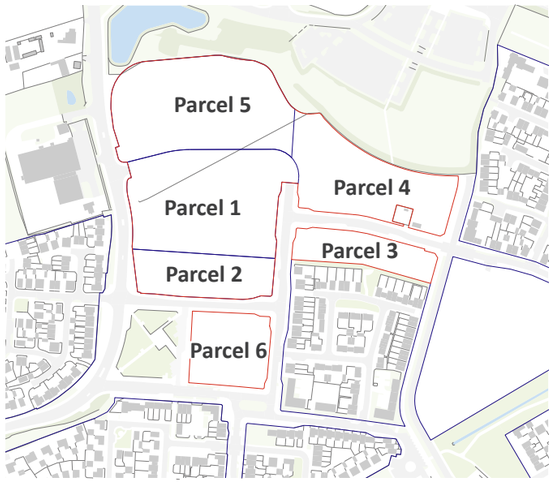
Masterplan Building Heights Diagram

1:3000

Key:-

Site Boundary

Parcel Subdivision - NTS



N

0 100m 200m

- Design Code: p.38 "Prioritise active frontages along the spine and local centre squares"
- "use variable heights, building forms, building styles and materials to reflect the importance of the area as a gateway from Station Rd/B1050)

Landmark and marker buildings

- according to Design Code: "Buildings along the eastern edges of parcels 4 and 3 should be ‘marker buildings’ and be designed as a unified whole with the corner buildings of parcels h5 and h6. Building heights of these marker buildings should ‘mirror’ those buildings on the other side of the spine road;"
- "landmark buildings will have strategic importance for the whole development. They will comprise both residential and civic buildings and should convey special importance or mark a key civic space." (p.128)
- "Marker buildings should be visually distinctive and aid legibility" (p.128)
- difference between landmark and marker buildings!

Materials

- simple

Pedestrian & Cycle Movement Diagram

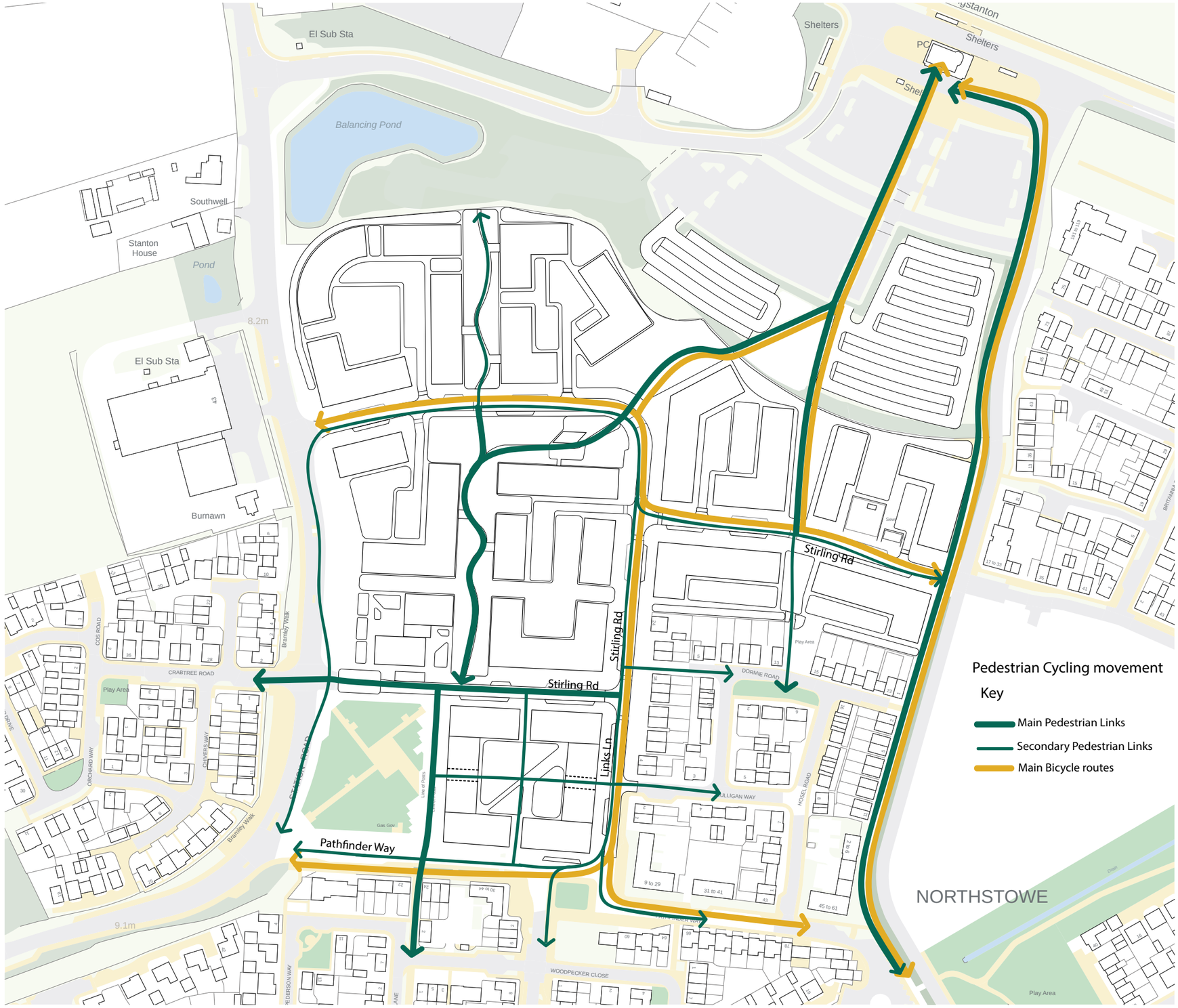
1:7500

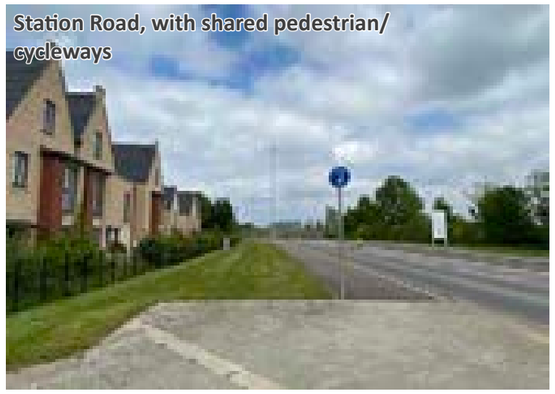
Key:-

- Site Boundary
- Northstowe Boundary
- Proposed Town Centre
- Existing Primary Streets
- Proposed Primary Streets
- Cambridge Guided Busway (CGB)
- Proposed Dedicated Busway
- Existing Local Bus Service Routes
- Proposed Local Bus Service Routes
- Existing CGB Bus Stops
- Proposed Dedicated Busway Stops
- Existing Local Bus Stops
- Proposed Local Bus Stops

N

0 200m 500m




Station Road, with shared pedestrian/ cycleways


Bus stop at Longstanton Park & Ride

5.3. Movement & Access

1.1 The Outline Transport Strategy (OTS) for the Northstowe site has a focus on sustainable transport and draws upon best practice and guidance to promote active travel and reduce dependency on private vehicles. This is complementary to the wider Regional and National policy narrative around the Climate Emergency and legally binding commitments for Net Zero Carbon emissions by 2050. Accordingly, key transport decarbonisation principles including measures to prioritising walking, cycling and public transport as the natural first choice for journeys are integrated into this OTS.

1.2 This OTS also promotes flexible design approaches which could be integrated into the emerging masterplan to future proof the development for changing travel behaviours to realise a sustainable local centre and community hub.

1.3 The transport and movement principles include a design approach which encourages sustainable travel in accordance with the hierarchy of movement shown in Figure xxx.

Hierarchy of movement

1.4 The key transport and movement principles for Northstowe include:

- High-quality walking and cycling routes that are safe, accessible, inclusive and connected to support a 15-minute neighbourhood.
- Permeable streets which ensure walking and cycling are the most convenient option and allow for a variety of uses, including play.
- Positively provide for new and active forms of transport (e.g. electric scooters and e- cycles) and anticipate the onset of 'mobility as a service'.
- Facilitating direct and attractive connections to bus stops and the cycleway to encourage public transport and cycling for longer journeys.
- Car parking minimised, with the ability for spaces to be provided and removed in a flexible fashion to adapt to changing travel attitudes and habits over time.

Transport Strategy Summary

2.1 Building on the transport and movement principles outlined above and as described in detail in subsequent sections, the transport strategy for Northstowe can be summarised as follows:

- Encouraging a 15-minute neighbourhood – Designing the Local Centre to encourage ease of access to all destinations surrounding it via sustainable modes and creating a relatively more convoluted journey for those using private vehicles, thereby reducing propensity for short distance car trips to encourage as many trips as possible by sustainable modes.
- Providing for new and active forms of transport – ambitious cycle parking targets and accessible cycle parking with battery charging provision to encourage cycling as a primary mode. Positively providing for new technologies including e-scooters and anticipating the onset of 'mobility as a service'.
- Encouraging bus use – creating an attractive, direct corridor from the proposed Local Centre to the Longstanton Guided Busway stop to maximise use of this service.
- Reduced car reliance – a car parking strategy which acknowledges current demand and provides for those who genuinely need it, but provides the flexibility and mechanism to reduce or repurpose parking over time with behavioural changes and advances in technology. Creation of a low speed and low traffic highway network around the Local Centre including opportunities for stopping-up and carriageway narrowing where appropriate and sensible.

2.2 The masterplan and transport strategy represents a significant change from business as usual and simply investing in infrastructure will not achieve the necessary scale of behaviour change to achieve the planned growth. A coordinated programme of engagement to inform users of the Local Centre about their travel options supported by ongoing marketing activities to persuade and incentivise them to change their travel behaviour and to sustain that change will be required.


(precedent from Steer transport strategy)


Dedicated Busway


Cycle parking around the Green

Vision for Walking, Cycling and Mobility

3.1 As per DfT policy, an increase in walking and cycling can not only improve air quality, but also combat climate change, improve health and wellbeing and also reduce congestion on roads . It is therefore imperative that walking and cycling forms a key part of the transport strategy for the Local Centre.

3.2 There will be a comprehensive, permeable network of walking and cycling routes throughout the development. The provision of a direct network of routes aims to make active travel the most convenient choice for short journeys to/from the development in order to minimise the number of vehicle trips between local origins/destinations. The network provides the connections to the edge of the development to enable good connectivity with the adjacent communities and more strategic mobility corridors such as the cycle way that parallels the Cambridgeshire Guided Busway, and the Longstanton Guided Busway stop.

3.3 Routes will be segregated from traffic and provide direct connections within the Local Centre area, avoiding level changes and road crossings where possible, and be designed in accordance with Department for Transport minimum standards as set out in the Local Transport Note 1/20 and Table 5.1.

3.4 Cycling opportunities will be provided within the internal streetscape. The primary vehicle routes will have segregated cycle lanes on both sides of the street, with priority for cyclists across adjoining junctions and accesses. Secondary and residential streets will be low traffic environments and will provide for cycling within the carriageway.

Cycle Parking

3.5 Cycle parking will be provided at or above SCDCs minimum standards, which are already set at a level that should to encourage cycling as a primary choice of travel, see Table 3.2 below for SCDCs minimum cycle parking standards:

Use Class	Minimum Cycle Parking Standards
A1 Food	1 space per 25m3
A1 Non Food	1 space per 25m3
A3 Restaurant/Cafe	1 space per 10m3
B1 Office	1 space per 30m3
D2 Community Centre	1 space per 3 seats

3.6 Cycle parking in the public realm will be accessible for different types of cycles and users and will complement or enhance the surrounding public realm. The feasibility of adding charging ports to public parking will also be explored.

3.7 An example of public realm cycle parking is shown in Figure 5.7.

Ebike and Shared Cycle/Scooter Schemes

3.8 Opportunities to safeguard for Ebike and shared cycle/scooter schemes are also being considered within the design. This includes consideration of the space and infrastructure requirements at key locations on-street, including charging requirements. The ability to launch an e-scooter facility will depend on a change to the current laws around their usage in the UK at present.

Calderwood Mobility Hub

Mobility Overview

4.1 The Mobility Strategy should be structured as a flexible and scalable framework that takes account of the previously discussed transport interventions that may be realised over the life of the masterplan alongside anticipated changes in mobility technologies to provide an adaptable and sustainable basis for local population growth up to and beyond 2030.

4.2 Ownership models are transitioning to mobility services, in which transport modes are shared and on-demand. Shared mobility refers to either shared assets such as bike share or car clubs, or shared rides such as ride sharing or micro-transit. Technology provides people with greater flexibility and real-time data to inform travel decisions and provides landowners means to better manage transport services.

4.3 Increased provision of shared mobility can be provided by working in partnership with private operators of shared services, such as car clubs, bike sharing (including e-bikes), e-scooter sharing (subject to legalisation), taxi and private hire services and micro-transit services.

4.4 With increased adoption of shared mobility services there is likely to be a reduction in demand for private car parking. There will also be an increased need to make provision for shared mobility services such as:

- provision for car clubs (including marked bays for round-trip services and permission to park for flexible services); and
- space for micromobility modes such as dockless bikes/e-scooter share services (when e-scooters become legal to use on public roads in the UK);
- increased space for pick-up and drop-off for on-demand services such as taxi, minicab and micro-transit services including on-demand buses.

Car clubs

Car clubs are proposed as a measure to reduce single car driver trips and are a key component for future sustainable transport solutions. Various housing associations and developments are offering car clubs services to their residents partnering with car club operators in the UK.

A key challenge for car club operators is commercial viability of their services, which also is driven by take up of their services by residents. Allocation of parking bays for car clubs should be done in collaboration between car club operators and organisation, which own the public space (public or private ownership). In case of private ownership, property developers should engage with car club operators and explore opportunity to use Section 106 funding for development of car clubs, this is recommended for the local centre with engagement with the residential developers around it. Opportunities for EVs and provision of EV infrastructure for car clubs can also be considered.

Micromobility

Shared micromobility is broadly defined as shared access to bikes/e-bikes, scooters, e-scooters or other light/low-speed modes. It is anticipated that a variety of new vehicle types and designs will emerge in the future. In their shared form, micromobility schemes have brought flexibility, choice and more sustainable travel options to people in many cities, but not without challenges regarding use of public space, engagement with city authorities and concerns regarding safety.

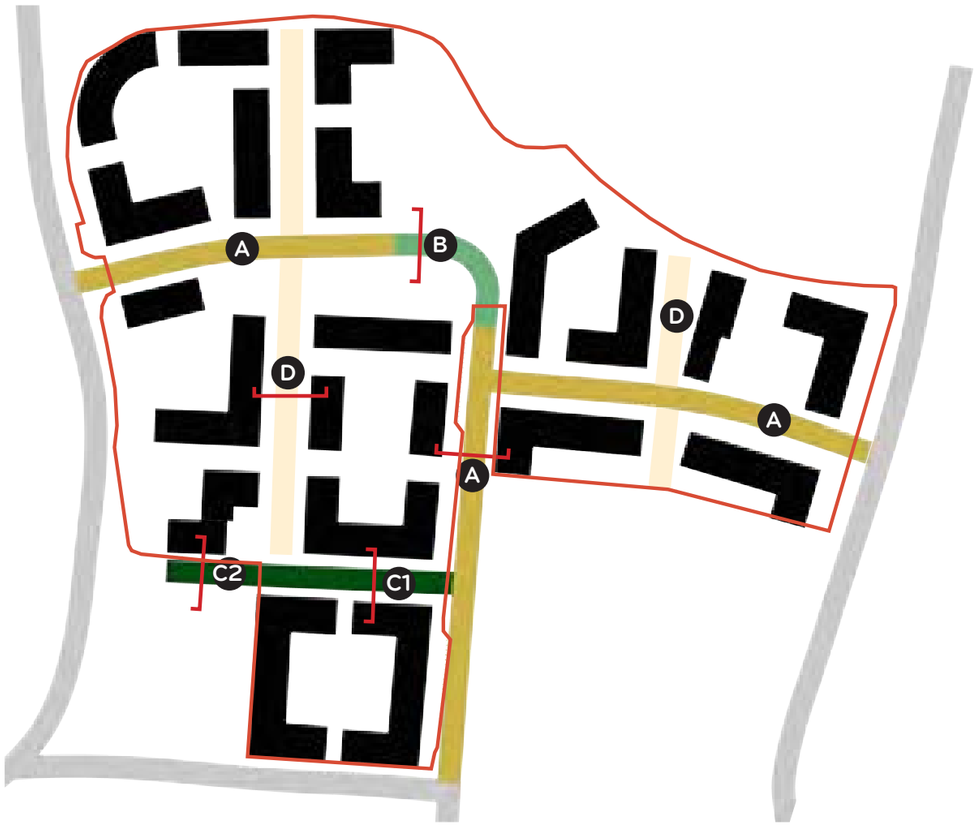
There are various operational shared micromobility models including: self-service on-street vehicles either with or without docking stations; railways station hubs; loans; folding bike lockers; workplace pool bikes; and peer to peer sharing.

There is an opportunity for e-bike/bike or e-scooter share initiatives to be brought forward in association with areas of intensive development which offer more scope for increased numbers of cycle trips.

Note: LCEZ red line boundary and key to be added

Figure 6.4 - Street hierarchy diagram

Street hierarchy diagram Design Code p.71



LCEZ Northstowe Street hierarchy diagram

A Primary street with parking(20m)
B Primary street (20m)
C Community Street (20m)
D Linear green path


New Road, Brighton


QE2 Mile, Southampton


Van Gogh Walk, London

Pedestrian Priority predecents

Design Guidance

Street Network

- Streets must follow the hierarchy of movement described above. All streets should be designed to be attractive for inclusive **pedestrian** use first and foremost, then for cycles and other possible micro-mobility equipment, finally for cars and other large vehicular activity;
- All parcels **must** contribute to the creation of an integrated, walkable, and safe street network;
- New streets **should** link at either end, where possible, to form a connected network for pedestrians and cycles/micro-mobility;
- All parcels must be accessible for pedestrian and cyclists and allow on-going movement through courtyards as much as possible;
- All new streets must be defined with an allocated level in the street hierarchy and follow the appropriate guidance;
- All developments and public realm proposals must support the delivery of the Northstowe Masterplan strategic T1 Spine link, as defined in the Design Code 2014;
- All developments and public realm proposals must support the delivery of the LCEZ Northstowe strategic movement links.

Vehicular Transport

- Vehicular through traffic within LCEZ Norhstowe must be minimised / limited to Pathfinder Way, Stirling Road and Links Ln;
- Vehicular network must follow the Design Code Phase 1 street hierarchy described in Fig 6.4 (page 71) of the Design Code.
- All new vehicular routes should be enhanced to integrate suitable and safe access for pedestrians and cyclists;
- All existing vehicular routes should be enhanced to integrate suitable and safe access for public transport, pedestrians, and cyclists;
- All vehicular streets within the LCEZ must be low-speed with maximum 20mph speed limits, with the exception of the busway, which can have a speed limit of 30mph, as specified by Table 6.4 in the Design Code Phase 1 (p.70)
- All new street and developments must be future-proofed to accommodate infrastructure for electric car charging points, car clubs, mobility as service (MaaS), and automated vehicle infrastructure, where appropriate;
- Most parking provision on the site should be located within the courtyards of perimeter blocks, away from the streets;
- Where vehicular routes run adjacent to, or within public spaces, streets should be low-speed, high quality pedestrian priority environments designed to prevent unauthorised parking within the public spaces themselves;

Public Transport

- Bus stops and other design features should be consistent throughout Northstowe and follow the guidance in section 6.3 of the 2014 Design Code;
- Bus stops should be visible and legible in the public realm;
- Bus stop locations should seek synergies with adjacent active frontages and key uses;
- Bus stops and micromobility hubs should be designed to integrate and create synergies with other mobility services;

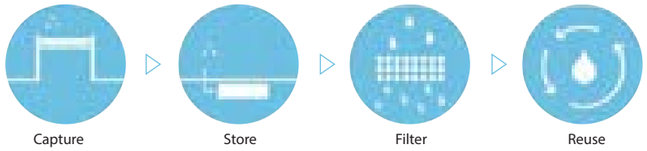
Street Hierarchy

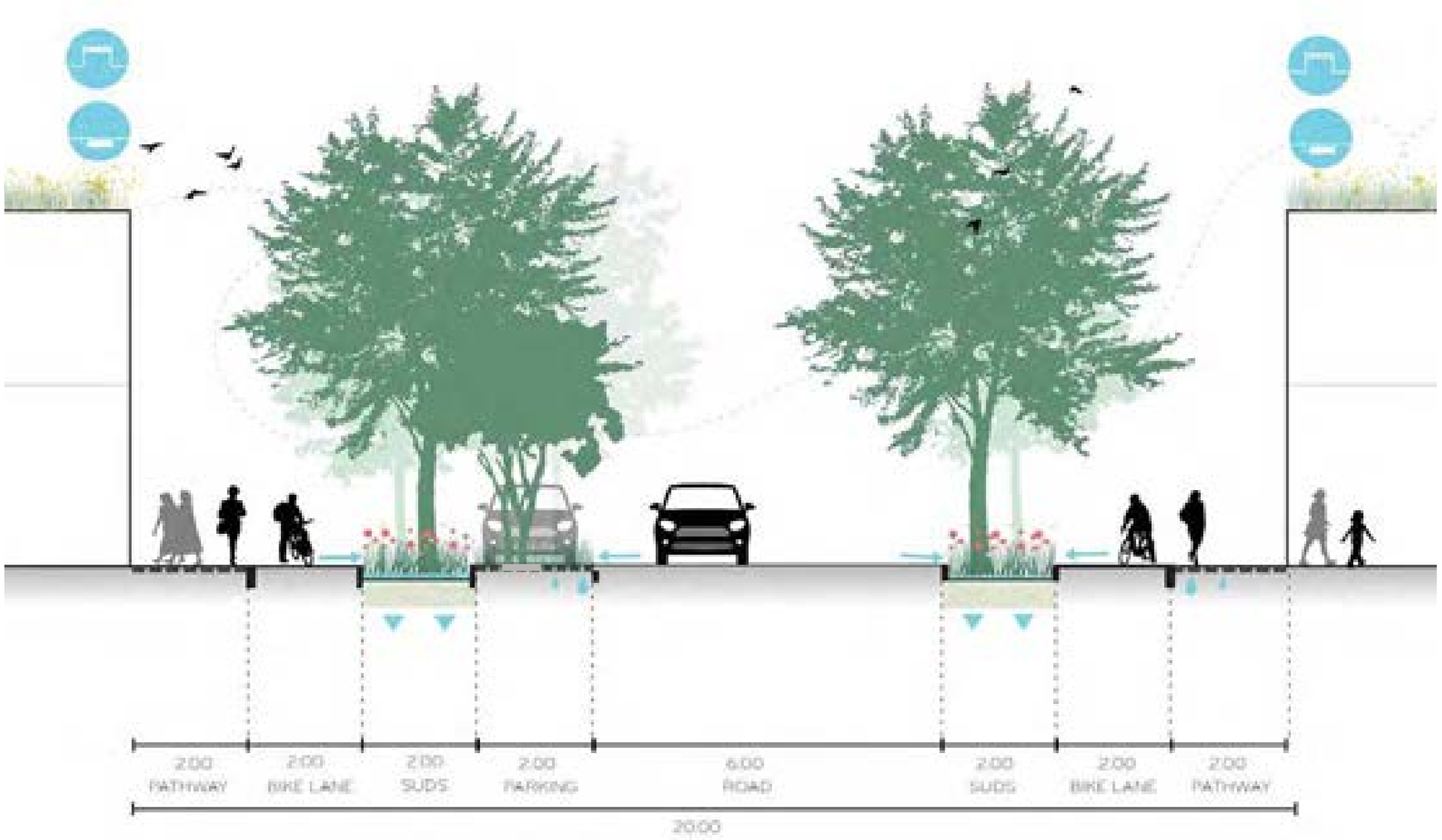
The street type guidance is described in Table 6.4. in the Phase 1 Design Code (p.70). The 2014 guidance for the LCEZ indicates two types of streets: Primary Streets and Tertiary Streets (see fig opposite);

Changes to the Phase 1 Design Code Street Hierarchy diagram:

- location of some streets in the Employment Zone is different to the Phase 1 Design Code
- Stirling Rd is now a pedestrianised street (Community Street Area), while Design Code 2014 marked it as primary street!
- some tertiary streets were turned into pedestrians and/or cyclists routes as part of linear green park

- All new streets within the LCEZ must follow the guidance of their allocated street type which includes:
  - Primary Streets (with or without parking)
  - Community Streets (with or without disabled parking)
  - Linear Green Paths (with or without cycling lanes)
- All new streets within the LCEZ must be designed to enable safe and secure movement for everyone, including mobility impaired people, visually impaired people, and people with non-visible disabilities;





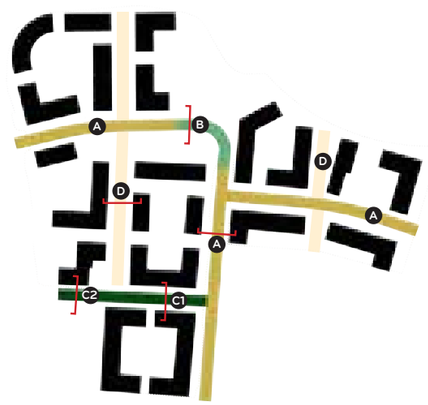
Primary Street (A) (total 20m, road 6m)

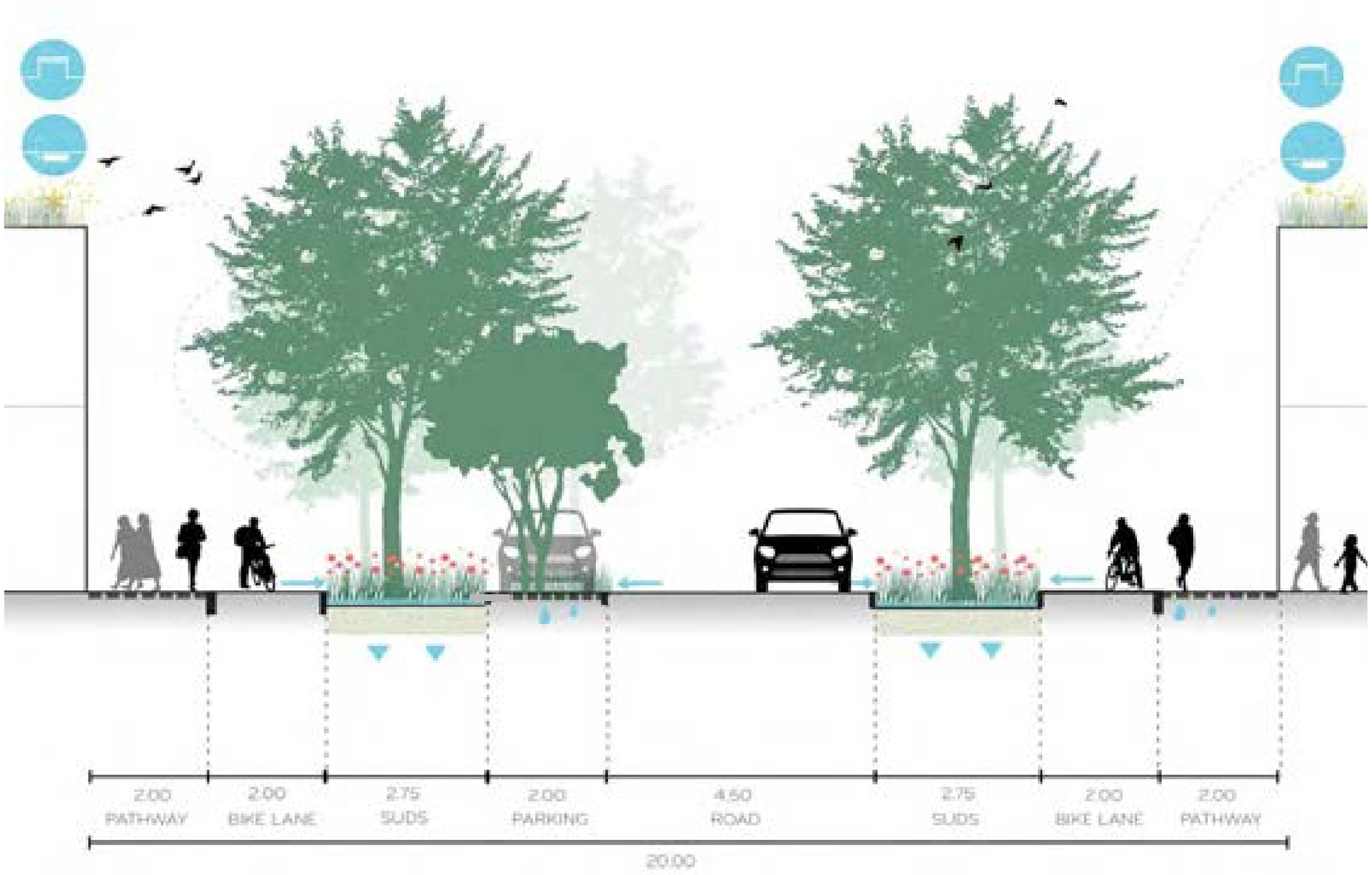
Street Types

The street network hosts the blue infrastructure and aside from providing movement routes and public realm, also integrates sustainable water drainage systems.

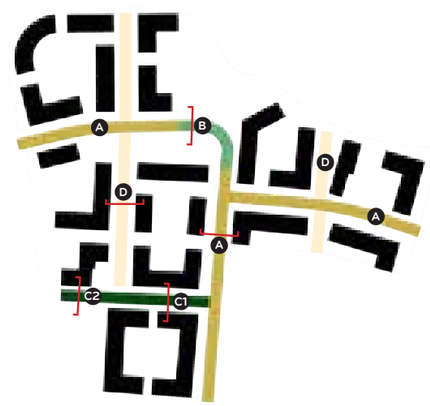
Primary Streets (A) enable vehicular movements through and around LCEZ Northstowe and form part of the wider strategic road network. Their design parameters are as follows:

- Primary streets must be a minimum of 20m wide;
- A landscape strip must be provided to buffer pedestrian footways and bike lanes from the road and should be a minimum of 2m, incorporate tree planting and natural drainage provision;
- The green buffers with SuDS must be provided on both sides of the road and be multi-functional, occasionally providing space for parking parallel to the road;

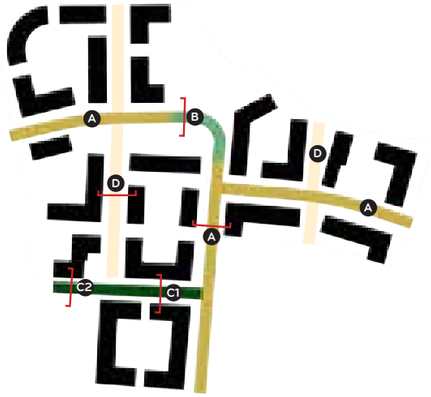




- Primary streets must provide bike lanes and be a minimum of 4.5m wide;
- Footways must be generous and serve adjacent developments. These should be a minimum of 2m wide and provide opportunities for well-designed spill-out of active frontage activities where appropriate;
- Bike lanes should be segregated from pedestrian pathways and be at least 2m wide;
- Junctions must be designed to minimise conflicts between different transport modes and encourage inclusive cycling and walking;

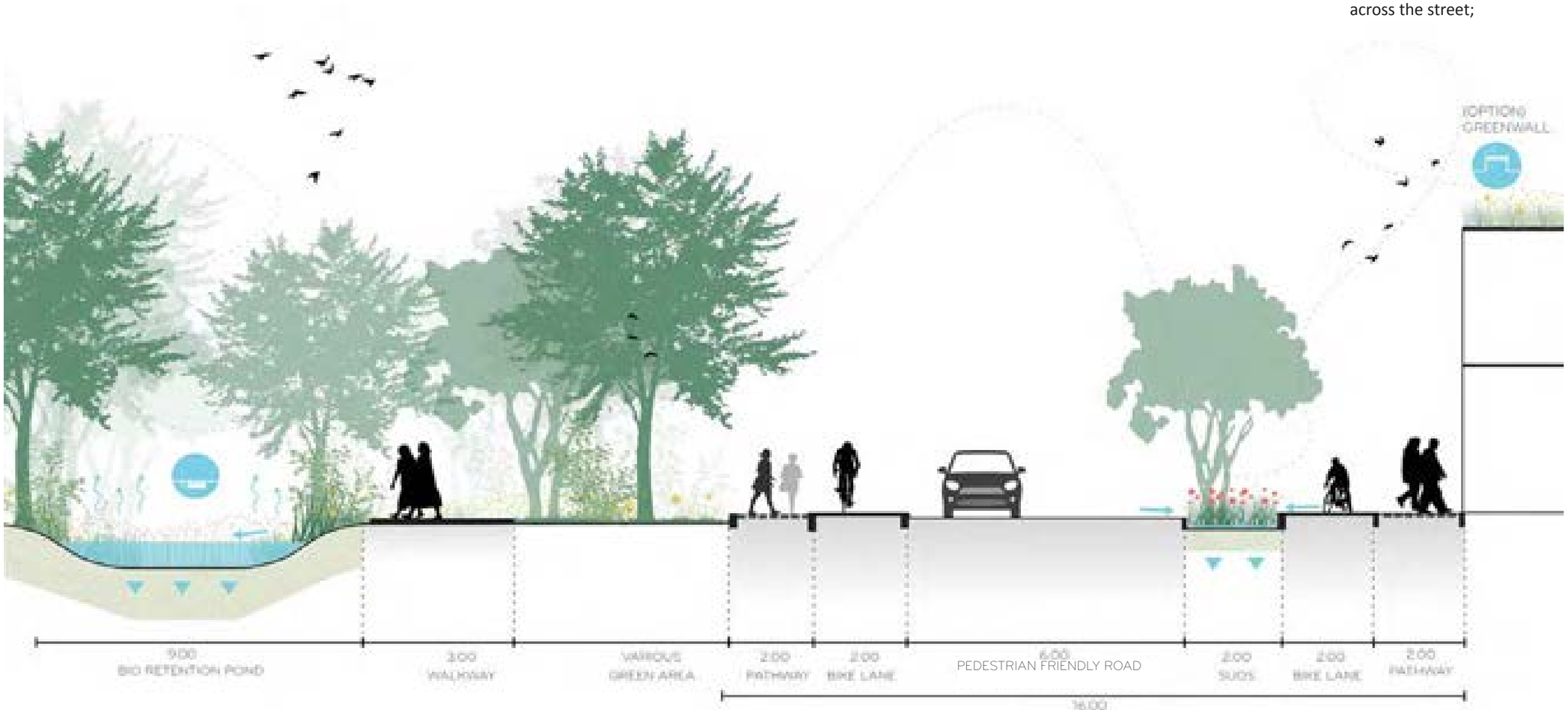


Primary Street (A) (total 20m, road 4.5m)

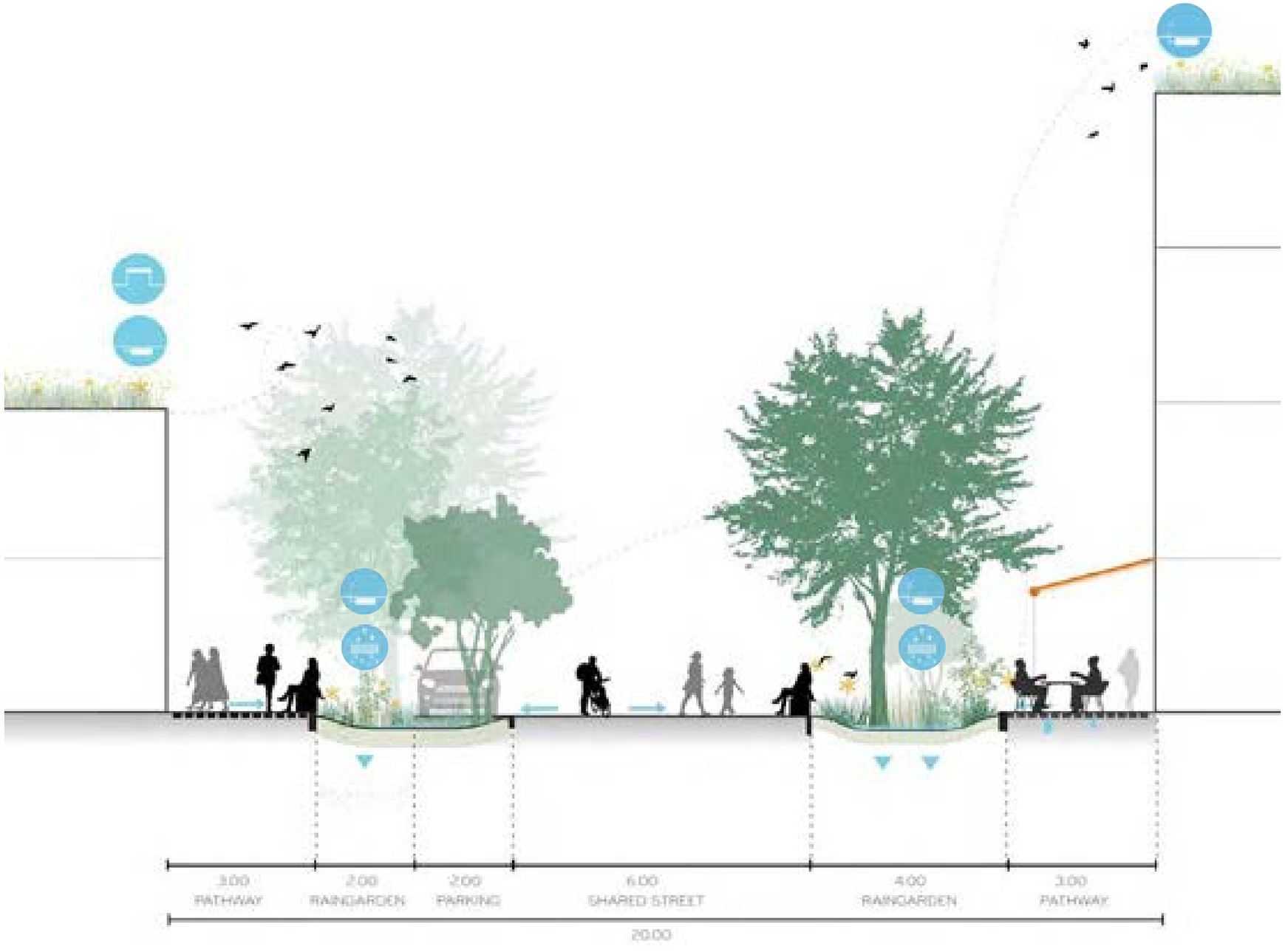


B. Primary Street between Linear Green Park sections

- This section of Primary Street must promote pedestrian priority through measures such as clear road markings or level and continuous shared surfaces;
- The vehicle carriageway should be of 6m width and encourage a slow speed environment while allowing cyclists to also safely use this carriageway;
- Bike lanes should be provided on both sides of the street and must be a minimum of 2m wide;
- Street parking must not be allowed on this section of the road, to avoid obstructing pedestrian movement across the street;



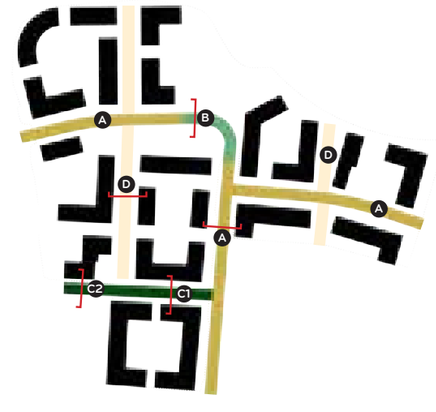
Primary Street between Linear Green Park sections (B) (total 16m, road 6m)

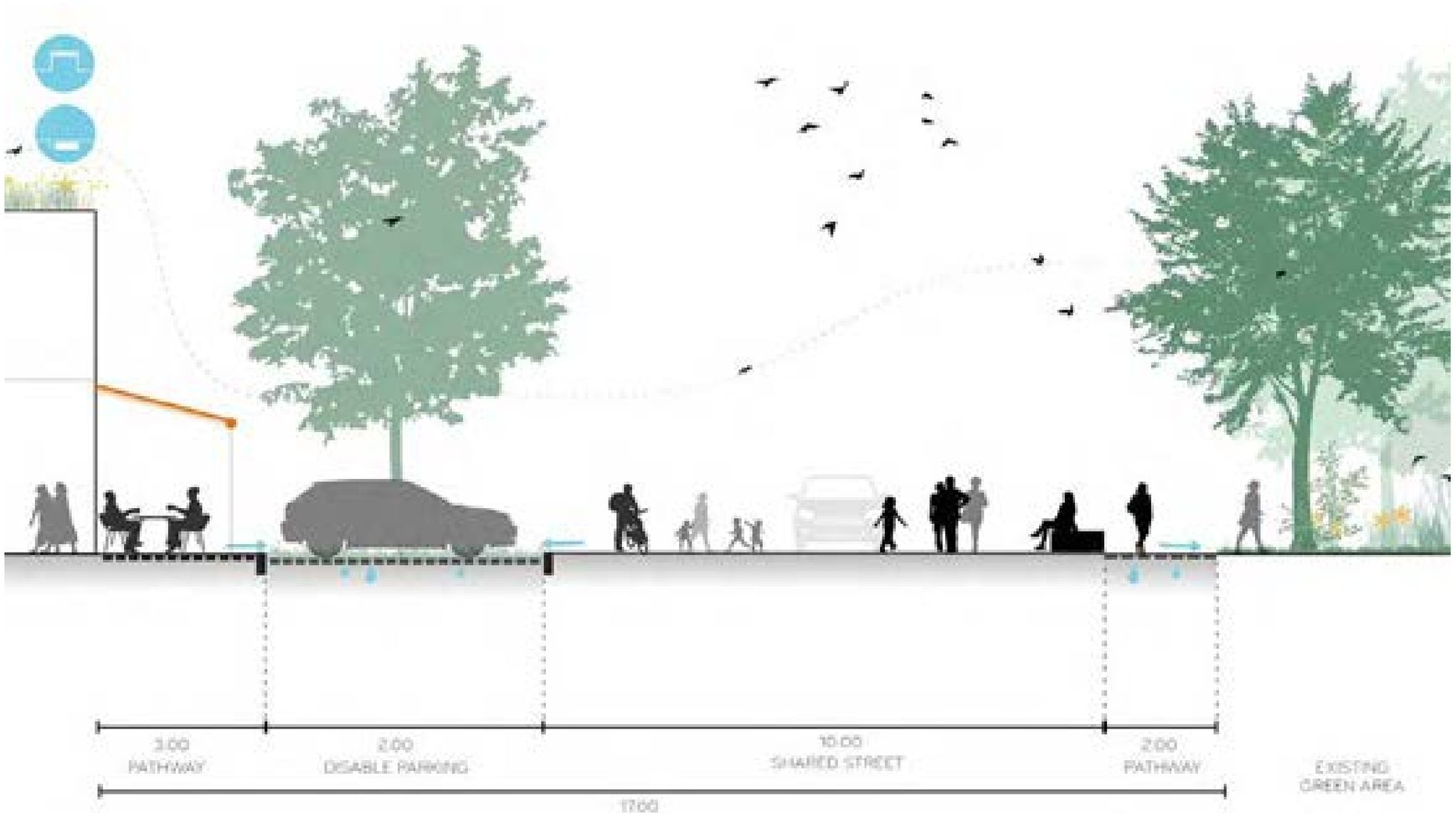


Community Street (C) (total 20m, road 6m)

Community Street (C)

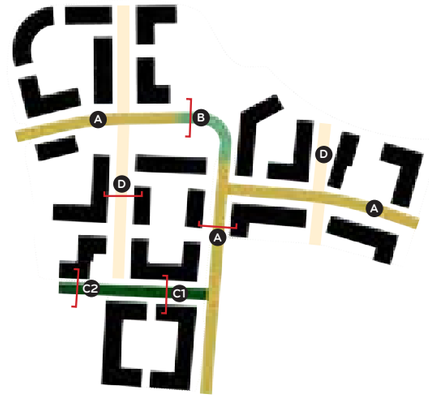
- The Community Street must promote a level of continuous shared surface approach to promote pedestrian priority;
- The Community Street must be a minimum total 17m wide;
- A notional vehicle carriageway space should be provided within the approximate centre of the street and be of 6m width, to encourage a slow speed environment while allowing cyclists to also safely use this carriageway. The vehicle carriageway can meander to also encourage slow speeds;
- A notional footway space must be provided along adjacent buildings and should be minimum 3m in width to allow for pedestrian movement, safe/easy access to and from building entrances, as well as retail and food and beverage spillout space;
- A 4m multi-functional landscape strips should be provided on either both sides or one side of the shared street and provide raingardens as well as occasionally provide parking spaces parallel to the street;

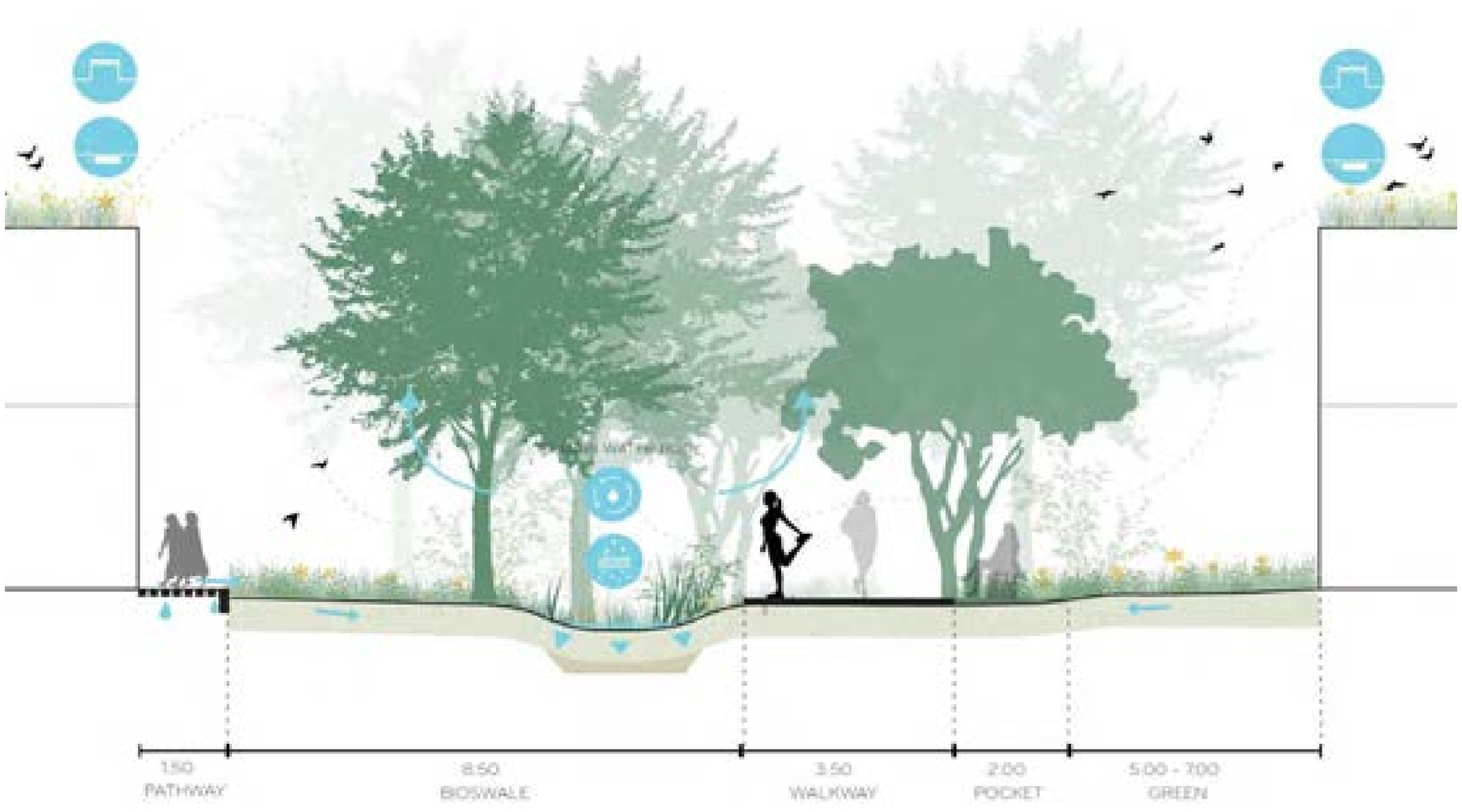




Community Street (C) (total 17m, road 10m)

- In front of the Community Centre the 4m multi-functional landscape strip must provide nose-in disable parking;
- When adjacent to The Green open space, the pathway must be provided adjacent to it and be a minimum of 2m wide;
- The footway serving the Community Centre must be generous and be a minimum of 3m wide and to provide opportunities for well-designed spill-out of active frontage activities where appropriate;





Linear Green Park (D) (total 21m, walkway 3.5m)

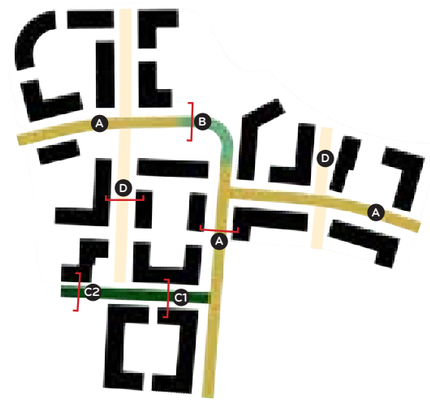
D. Linear Green Park

The Linear Green Park is the main green spine of the site and takes the form of a straight north-south connections between the existing Green open space and the open space to the north of the site.

The second north-south Linear Green Park connects the Park & Ride across Parcels 3 and 4 to the existing residential development on Parcel H4 (Bovis).

The connection between the Park & Ride and the main green spine follows the direction of the retained existing trees on site and frames the view from the Park & Ride to the food and beverage pavilion.

- Footpaths are design 3.5m wide minimum and establish pedestrian priority
- Access to adjacent development is secured with dedicated footpaths
- A green buffer on the edges of site surrounds the development and has a minimum with of 5m
- The alignment of the footpath is designed to provide a dynamic experience of the park
- The park is divided into pocket green spaces for break out spaces in use by the commercial buildings
- Bioswales transfers excess runoff water towards the water main off the site
- Access of adjacent buildings must be located towards this space



Note: add precent image

Active Travel

- **Note**: reference NHS Healthy Towns to be added
- **Note**: eference to 6.1. and 6.2 Design Code to be added
- All new development must contribute to the creation of well-lit, direct and overlooked pedestrian and cycle routes, which provide inclusive access to all users;
- Streets within the LCEZ Northstowe must encourage walking and cycling to the key attractions in the local area as well as to important locations in the wider Northstowe area;
- ALl streets should enable safe and inclusive cycling wherever possible, through a range of reasonable measures including: separate cycle lanes, low-speed mixed use streets, limiting through traffic and associated cycle infrastructure;
- ALl new cycling infrastructure, including routes, lanes and crossings, must follow recommended guidance as set out in Local Transport Note 1/20;
- All pedestrian routes, including public spaces and streets, must be designed to be inclusive and accessible to all member of the community;
- Legible and consistent way-finding provision must be employed strategically throughout the streets and public spaces of the LCEZ Northstowe area to promote a legible, walkable environment;
- All built proposals should consider their townscape impact and contribution to natural wayfinding;

Junctions & Crossings

- Junctions within the LCEZ Northstowe must be designed in accordance with Manual for Streets and Manual for Streets 2 to be safe, convenient and attractive for all users;
- Traffic calming must be provided at key junctions and crossing points to promote safer pedestrian and cyclist movement;
- Dedicated cycle crossings must be provided where they form part of the strategic cycling links proposed;
- Hierarchy of squares / Types of junctions in Design Code: Principal squares, Secondary squares

Car Parking

- All proposals must comply with Cambridgeshire's adopted car parking standrds, int erms of maximum car parking provision;
- All street parking should be unallocated, except where required to effectively enable servicing and blue badge users;
- Street parking must not dominate the street scene, ensuring parking spaces are itnerspersed with regularly placed street trees and landscaping;
- Unallocated parking on streets must be designed in such a way to rpevent infringement on footways;
- Car club spaces must be provided where appropriate and at strategic locations;
- Parking on-site should be located at the backs of buildings, reducing the impact of parked cars on the adjacent public realm;

Cycle Parking & Micromobility

- All proposals must comply with Cambridgeshire's adopted parking standards, in terms of minimum cycle parking provision;
- Cycle parking should consider probision of spaces for non-standard bicycles such as cargo-bijes, recumbent tricycles, wheelchair cycles etc;
- Where appropriate levels of cycle parking cannot be provided within the footprint of the building, it can be provided externally but must be within 15m of the entrance of the building, be well-overlooked, covered and secure;
- Visitor cycle parking should be provided close to building entrances in well-overlooked locations;
- Visitor cycle parking should be provided and integrated throughout the public realm of the LCEZ Northstowe through Sheffield stands, and must not impede into the footway;
- Public cycle parking should be provided, where appropriate, for cargo cycles and cycle-based deliveries;

Servicing & Utilities

- On site parking must include provision for a minimum of 20% of parking spaces (in 2022), rising to 100% (from 2030) to have active charging facilities for electric cars;
- Services and utlities along streets featuring vehicle carriageways (as opposed to shared surfaces) should be located within a 2.5m wide service zone beneath footways;
- On shared-surface streets, services and utilities should be located in a 2m wide service zone below the shared surface;
- Waste and recycling storage facilities, when present in the public realm, must be designed so as to not unnecessarily clutter public spaces or detract from the overall appearance of development;
- All developments must provide adequate space within property boundaries or shared spaces for refuse and recycling facilities;
- All developments must be designed to enable all refuse and recycling collections to be made from the public street network;

Note: add precent image

Landscape Concept Diagram

NTS

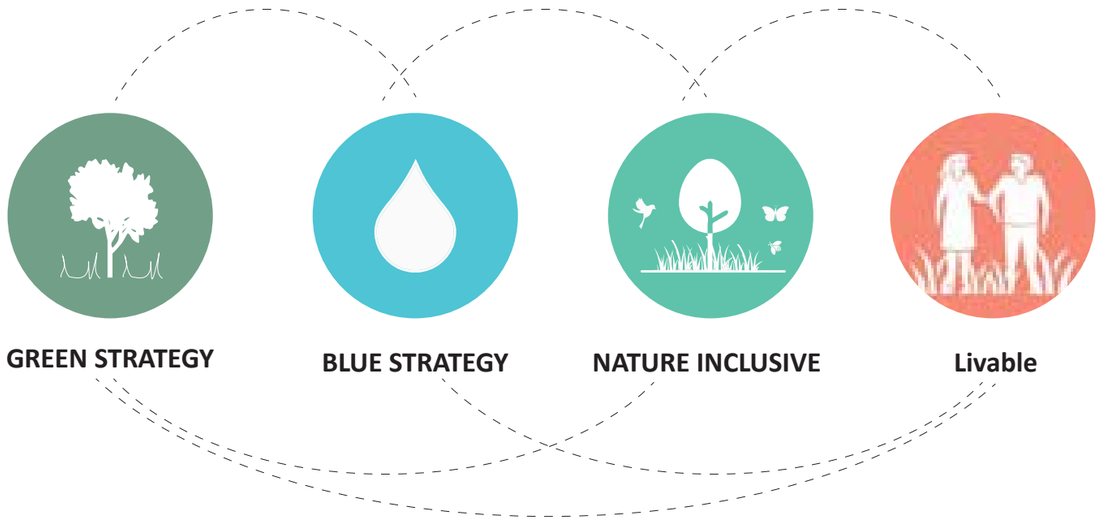
5.4. Public Realm & Landscape

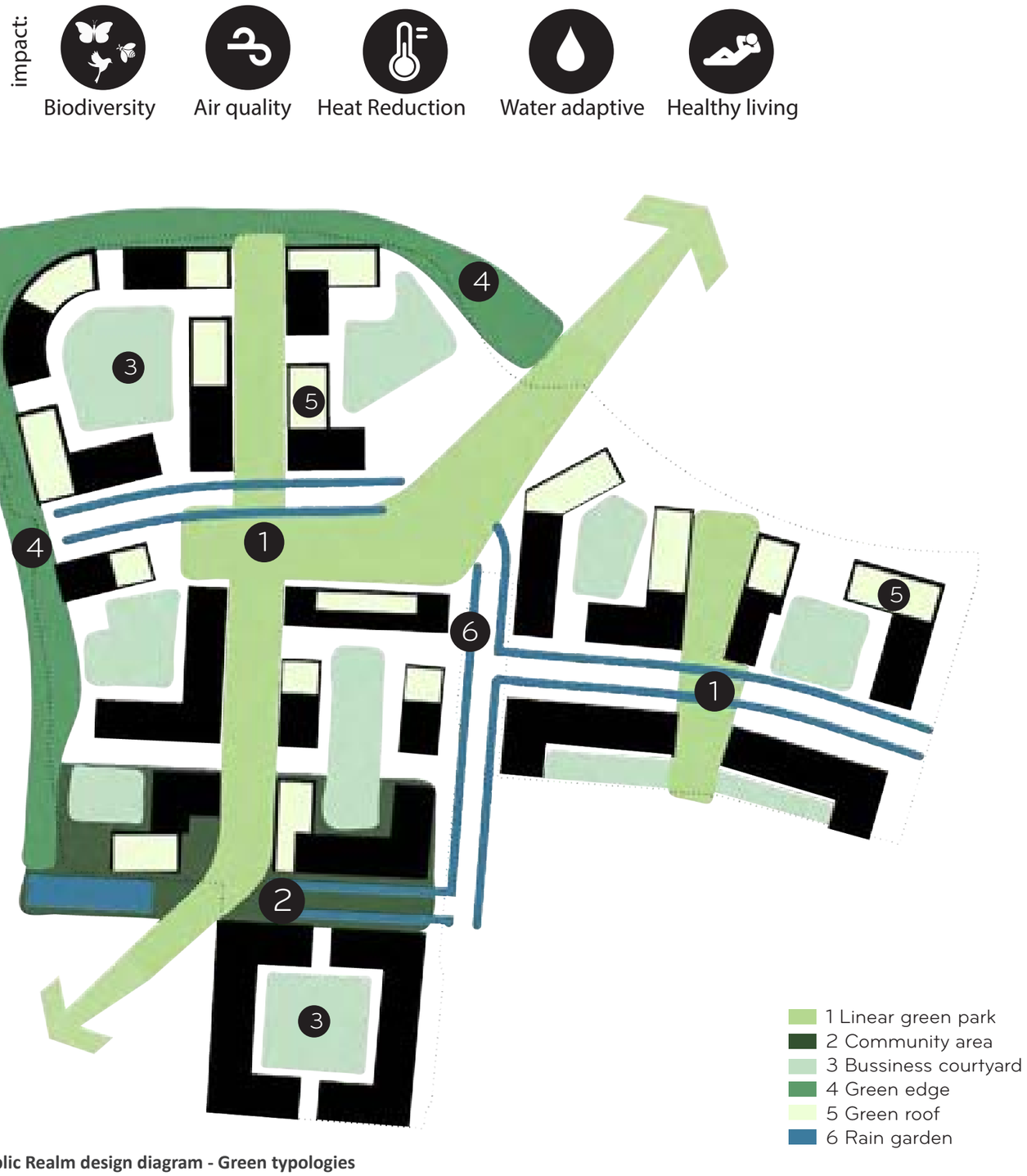
Landscape vision

The vision for the Enterprise Zone and Local Centre is to create an urban place in a landscape setting with high quality landscape and public green spaces. Minimizing car movement, and integrating cycle and pedestrian movement with green and blue infrastructure. The master plan sets out the principles to integrate the green, blue, nature inclusive concepts in the public realm creating a synergy for a healthy place to live and work.

The Public Realm and Landscape strategy is structured around four main themes:

- Green Strategy
- Blue Strategy
- Nature Inclusive
- Livable





Public Realm design diagram - Green typologies

Green Strategy

The green infrastructure follows the urban framework of the masterplan. Defining the green characteristics of the Enterprize Zone and creating a unique framework for the building and surroundings. The green link 'linear green park' will be the main green spine of the development, it will provide a safe and pleasant movement route, with informal recreation and places to stay. Green will also be integrated on the building roofs and courtyards. Streets will be planted with large scale trees and long planters with under-story planting structure and integrated water retention system.

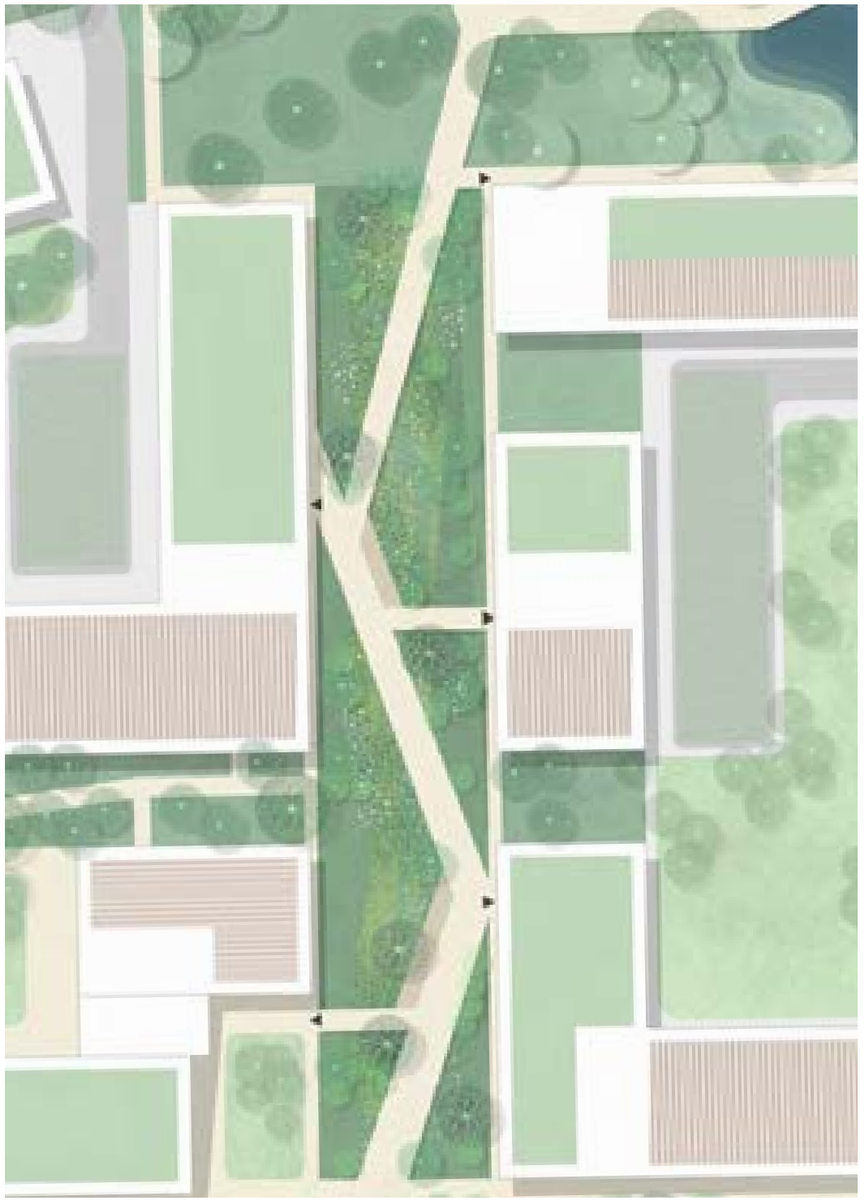
Linear Green Park

The linear green is the main green spine of the site, providing an informal recreational green space, quiet and safe movement zone and quality stay opportunities.

The green link provides the strategic pedestrian and cycle link into the site, to sporting active transport modes, and the main connection from the public bus and car parking area to the office building and community centre.

Landscape planting should give appropriate consideration incorporating wet and dry habitats and layered landscape structure, including medium, small trees, shrubs, perennials and grasses.

Landscape planting should give appropriate consideration of future climate change and resilience. Choice of vegetation and species and provision of adequate management should be considered in the design of all green and blue infrastructure.



Linear green park typology

1. WIDTH

Main path 3.5 - 4.0 m
Minor path 2.5 m

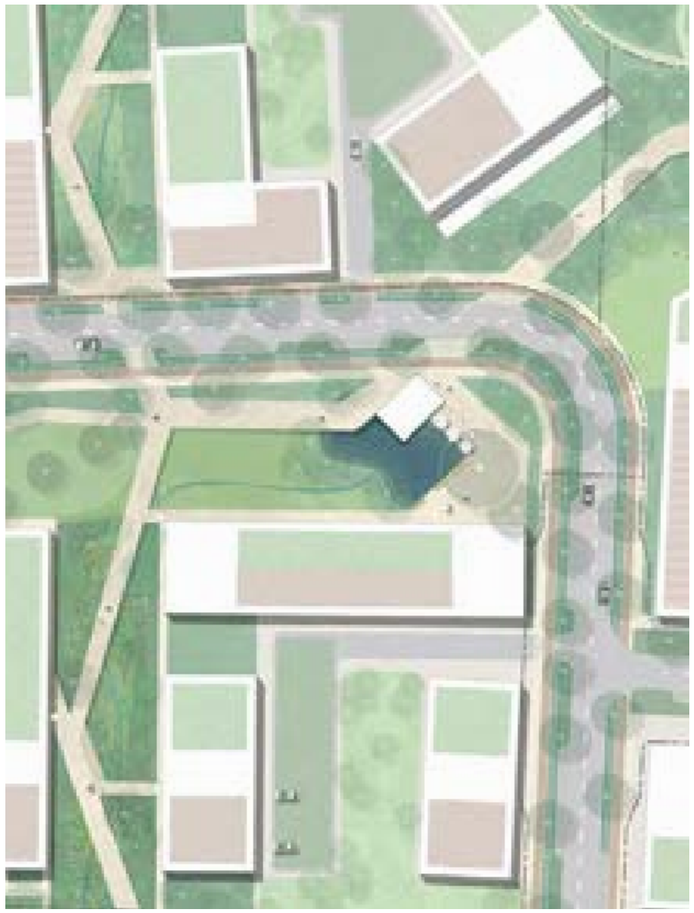
2. EXPERIENCE

Route deviates from facade for dynamic experience

3. PROGRAM

Pocket space integrated into the path

TOTAL GREEN AREA 4230 m²/7750 m²



Linear green - green pockets

Along the green link there will be a range of open green spaces, serving the development users. Creating places to stay and green buffer for the office developments.

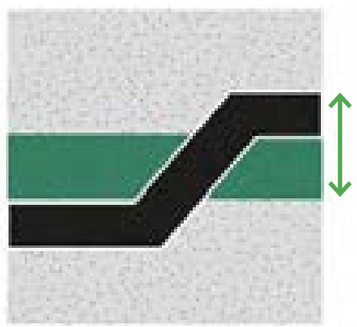
Open lawn area, providing break out spaces for users in sunny days. The open green will be surrounded by tree and shrub line, providing necessary shading and heat mitigation.

The multi functional area, will accommodate the attenuation pond and a small plaza surrounding the public pavilion.

Pocket spaces and terraces at the building edges will provide a green buffer between the public areas and building development. It will also provide opportunities for break-out spaces from the commercial buildings.

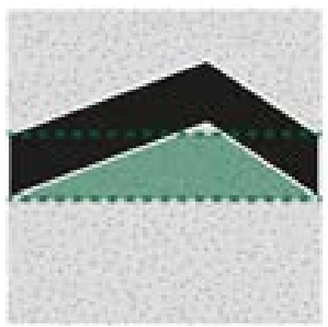
Variety of green spaces

The diagram and images above shows the variety off green spaces along the green link, the potential uses and there interaction with the building and public route.



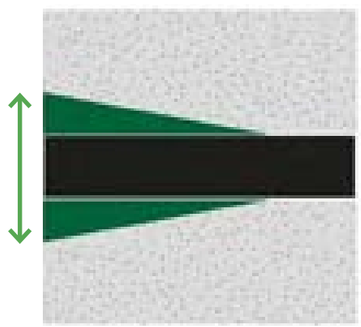
1. WIDTH

Variable width in range 4.0 - 6.0 m.



2. EXPERIENCE

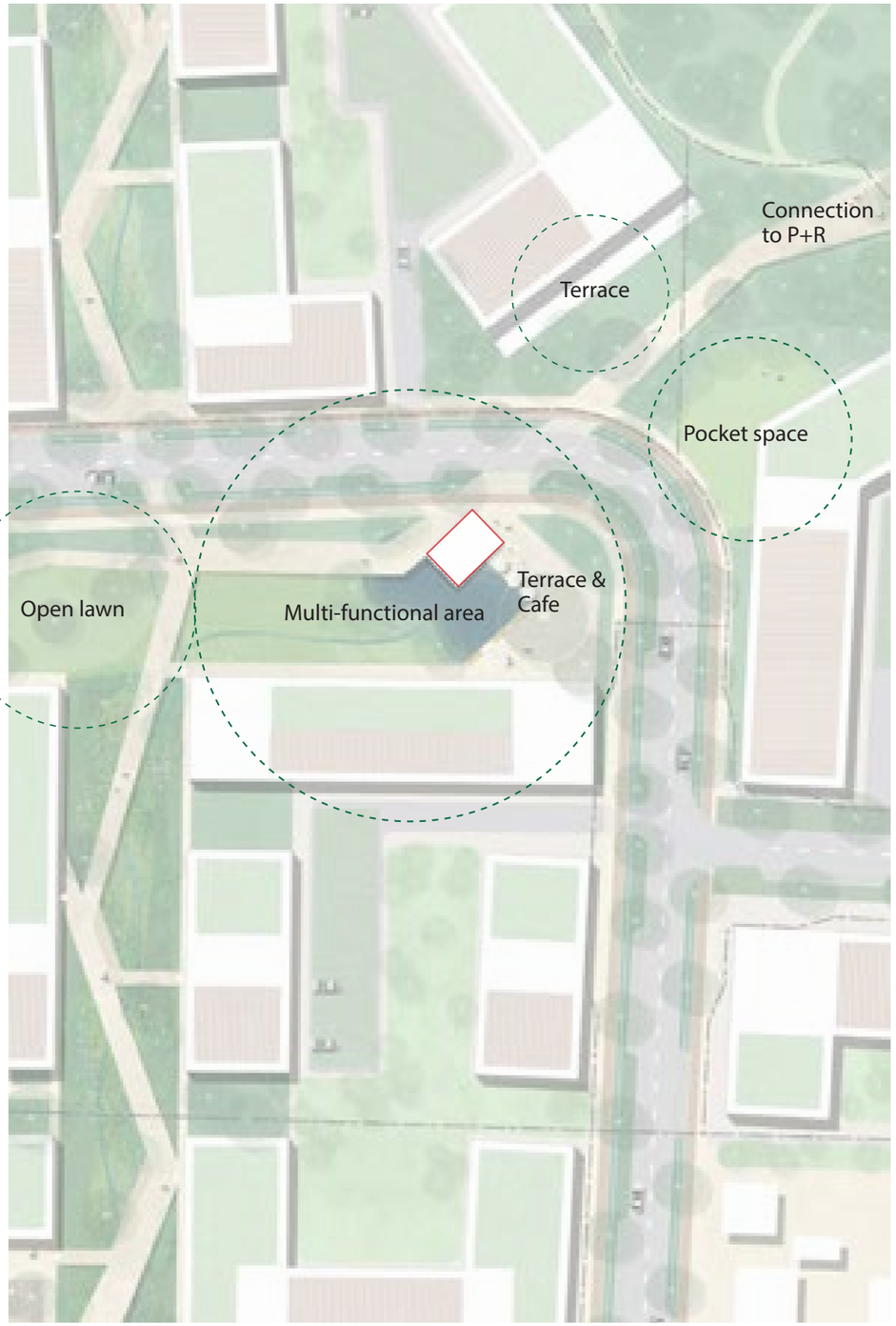
Route deviates from facade for dynamic experience



3. CONNECTIVITY

Enlarge the width when reaching the other side of the street to create entrance

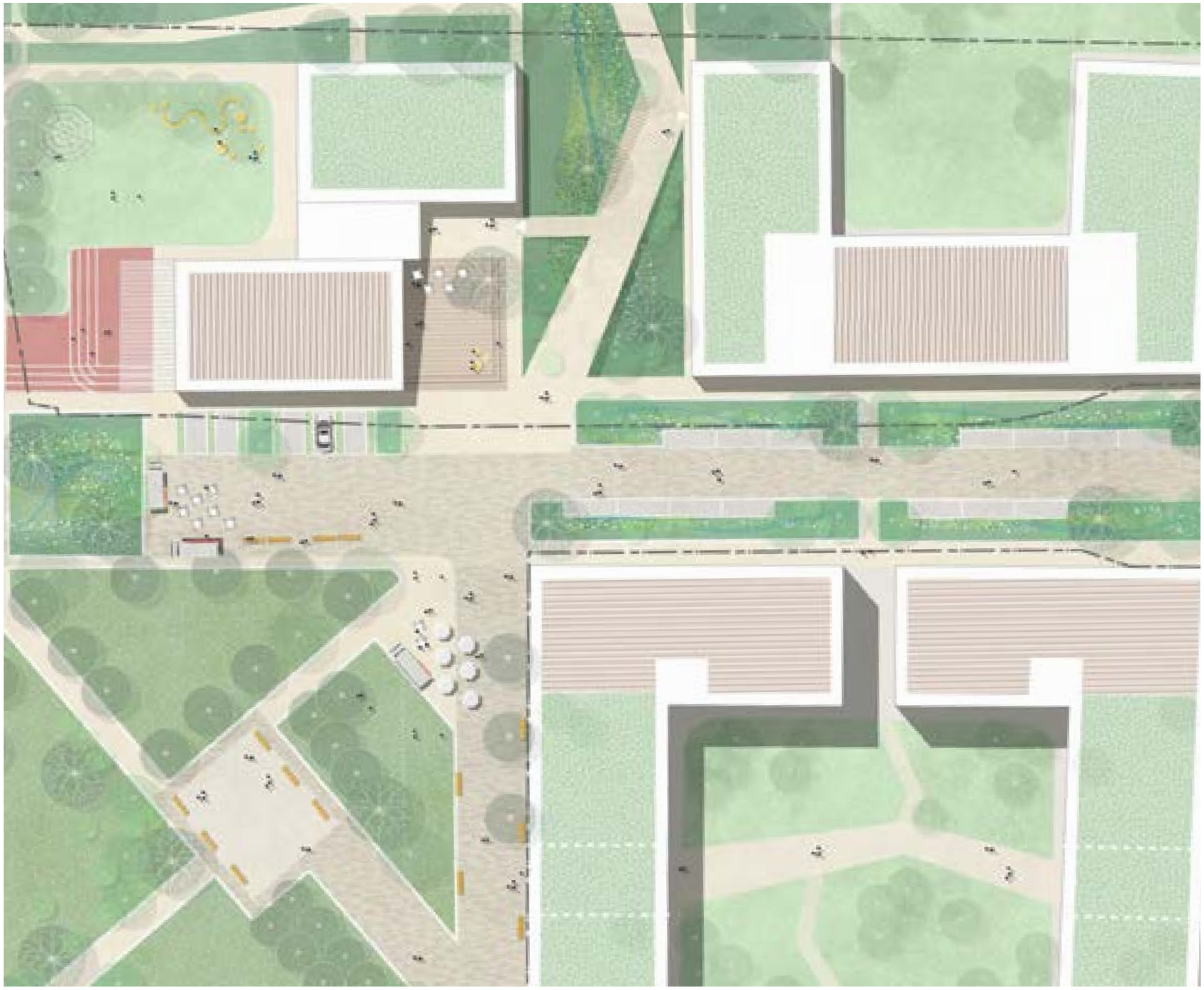
Linear green pockets typology



Linear green park programme - to encourage interaction

Precedent images for spatial quality of linear green park

Community Street Concept



1. WIDTH

Shared pathway 6.00 m

2. EXPERIENCE

Wide shopping street with green in the middle

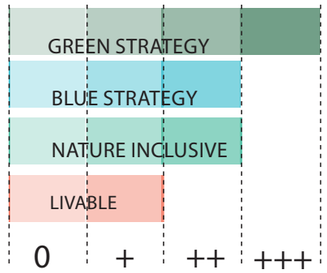
3. PROGRAM

Parking space integrated (for service and disabled parking)


Nine Elms Linear Park, UK


Nijverdal project, The Netherlands

Landscape synergy indicator



Ecological layers

Community Area/ Street

The centre of the local centre, retail and residential will be the ‘car lazy’, shared space street.

The green zones will organize the space, with integrated seating and coffee terraces.

The planting areas will integrate SUDS, providing sustainable ways to retain and move water.

The green will provide good buffer for the building with larger trees providing shade and heat mitigation. Sufficient volume of soil will be provided to trees and under-story planting. So they can mature to there full potential.

Blue Strategy

Due to climate change there is a growing demand to adapt the future development to incorporate integrated strategies to collect, store, clean and re-use water on site.

The blue strategy defines different measures for collecting, retaining, cleaning and re-using the water. The measures will be part of the buildings, in the roofs, façades and courtyards. The water will be collected in the green areas by small swales and street rain gardens. As much as possible water will be retained on site in the measured mentioned and the small attenuation pond and be used to water the plants. Over flow of water will be discharged in the eastern park water ponds, where extra capacity has been planed as part of the phase 1 master-plan.

Existing vegetation to be retained

Significant trees and hedgerows to be retained

Amenity vegetation on golfcourse

(from Planning background phase 1, DAS part 4&7)

Biodiversity

Existing Landscape: Semi-natural habitat

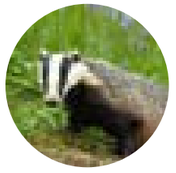
The diagram below shows the development zone in the context of the zone 1 existing landscape, and main fauna species to be found in the area.

Most of the area are associated with the development of the golf course with little ecological value. Limited amount of trees and hedgerows are predominant.

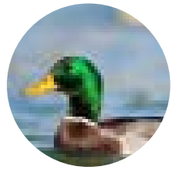
Existing habitats can be found along large numbers of ponds on the golf course including:

Scarce water beetles

Water voles

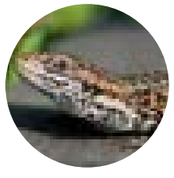


Badgers

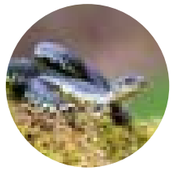


Waterfowl

Along the wet and semi improved grassland:

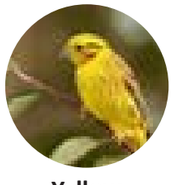


Common lizard

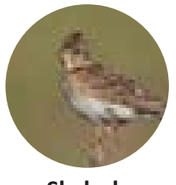


Grass snake

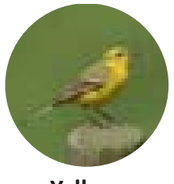
In the arable fields there are scarce breeding birds such as:



Yellow hammer



Skylark



Yellow wagtail

Landscape structure diagram

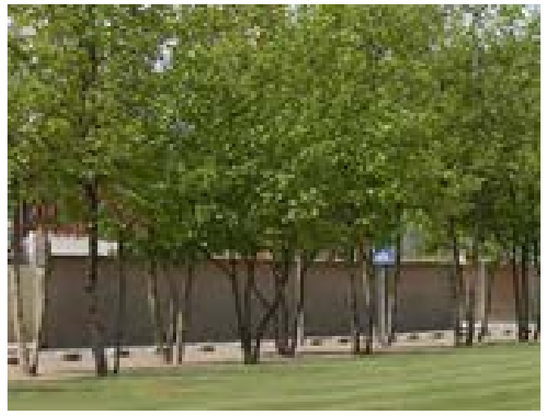
Layered Landscape Structure

Creating a layered landscape structure will ensure a good green environment through the whole year and mostly a good and varied green environment for the local fauna. The diagram below shows the seven layered of landscape to be incorporated in the development open spaces, planting schemes.

Formal street trees

Clump of park trees

Natural tree cluster



Multi stems trees

Medium to small tree cluster

Existing tree lines

Tree Planting typologies

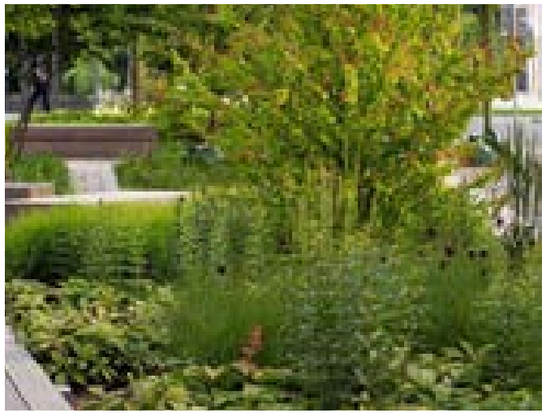
The diagram below shows the tree planting strategy for the development zone. A distinction is made between the space typology and tree planting type, in order to ensure that the proposed planting corresponds to the different characters of the public realm.

Main streets will be planted with large scale trees, in formal arrangement. The trees should have sufficient tree soil volume so they can develop to their full mature potential.

Along the green link a more informal and natural tree planting arrangement is proposed, with medium and small trees planted in tree clusters.

Along the development large trees will be planted in a natural arrangement, that will provide in due time a good buffer from main traffic infrastructure.

Amenity grass



Parkland (shrubs&grassland)

New Landscape Habitats

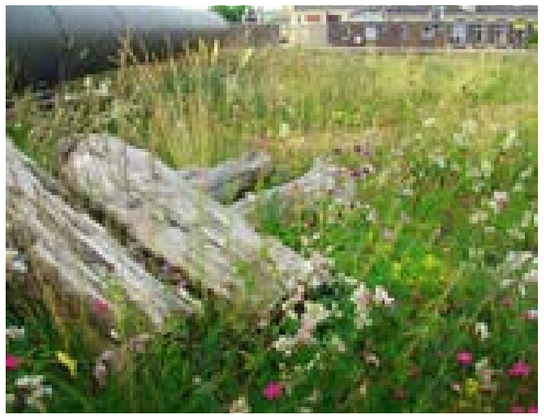
On the built environment, areas of biodiversity living roofs will be installed, with the objective to enhance the ecological value of buildings and nature inclusive principles.

Tree lines and clusters have been proposed along all roads and streets with local areas of ground flora. The planting of trees is considered an important part of the development fabric. Enhancing the functional connection to surrounding development green infrastructure.

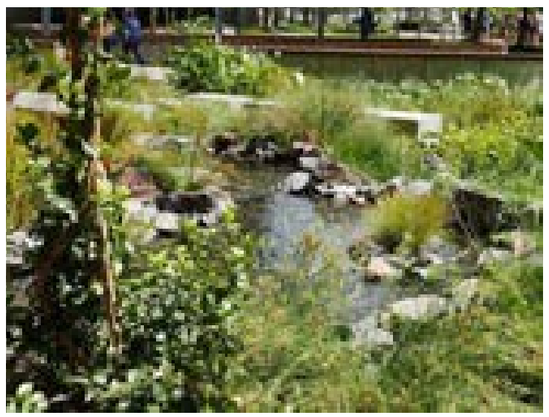
In terms of wildlife, the inclusion of hedges, trees, shrubs, grassland, wetland, and amenity planting will provide nesting and foraging habitat for local wildlife.

The ‘green link’ and ‘pocket parks’ will include open green areas and small attenuation pond, connected to the blue line running through the green link and street rain gardens, creating a rich zone of biodiversity.

High grass



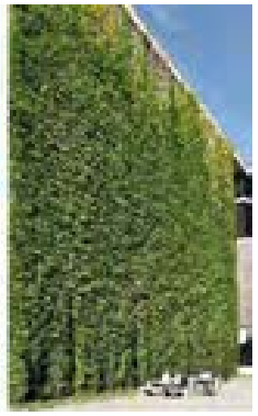
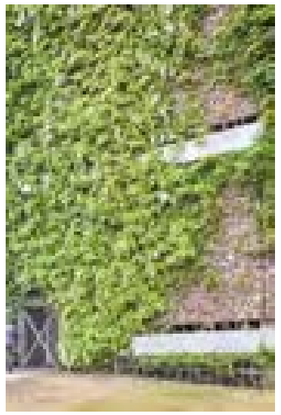
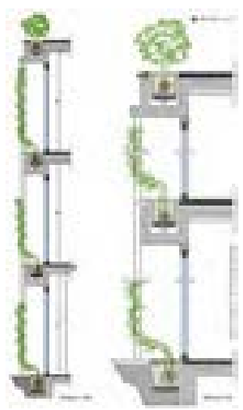
Biodiverse roofs



Wet habitat

Rain garden

Green Facade

Green/blue roof

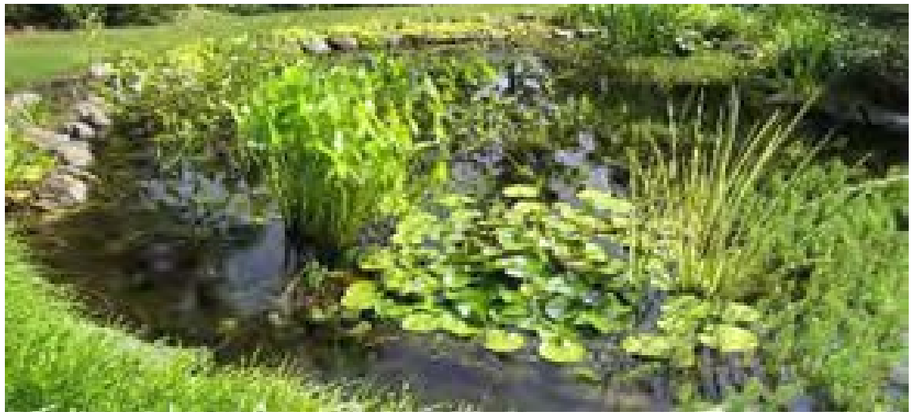

Insect and bird hotels

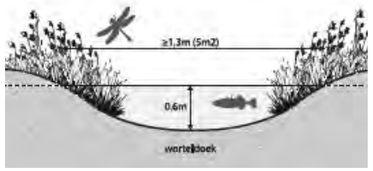


Nature inclusive in buildings

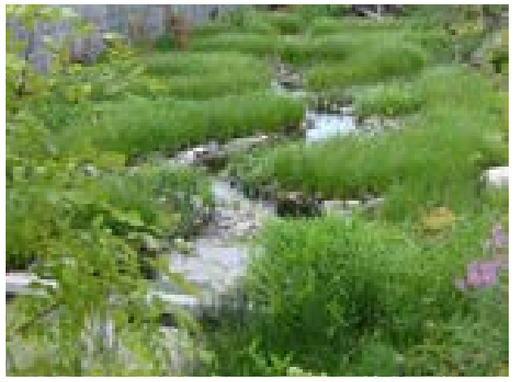
Different measures will be taken to integrate nature in the building, including roofs and façades. The living roofs will create new habitat for invertebrates and will provide foraging areas for various bird species. Bird nesting fixtures will be placed on or near the green/ biodiversity roofs to attract key species considered local conservation priorities. Vertical green elements will be installed along the facade as front facade garden or vertical green façades. Nesting facilities and insect hotels will be included in the appropriate location on facade depending on the species requirement, and site conditions

Retention Pond

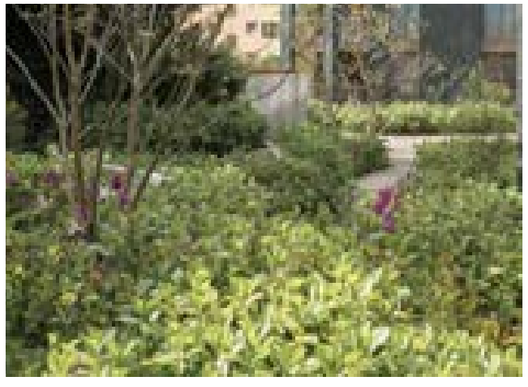




Water runoff by infiltration (green ditch)



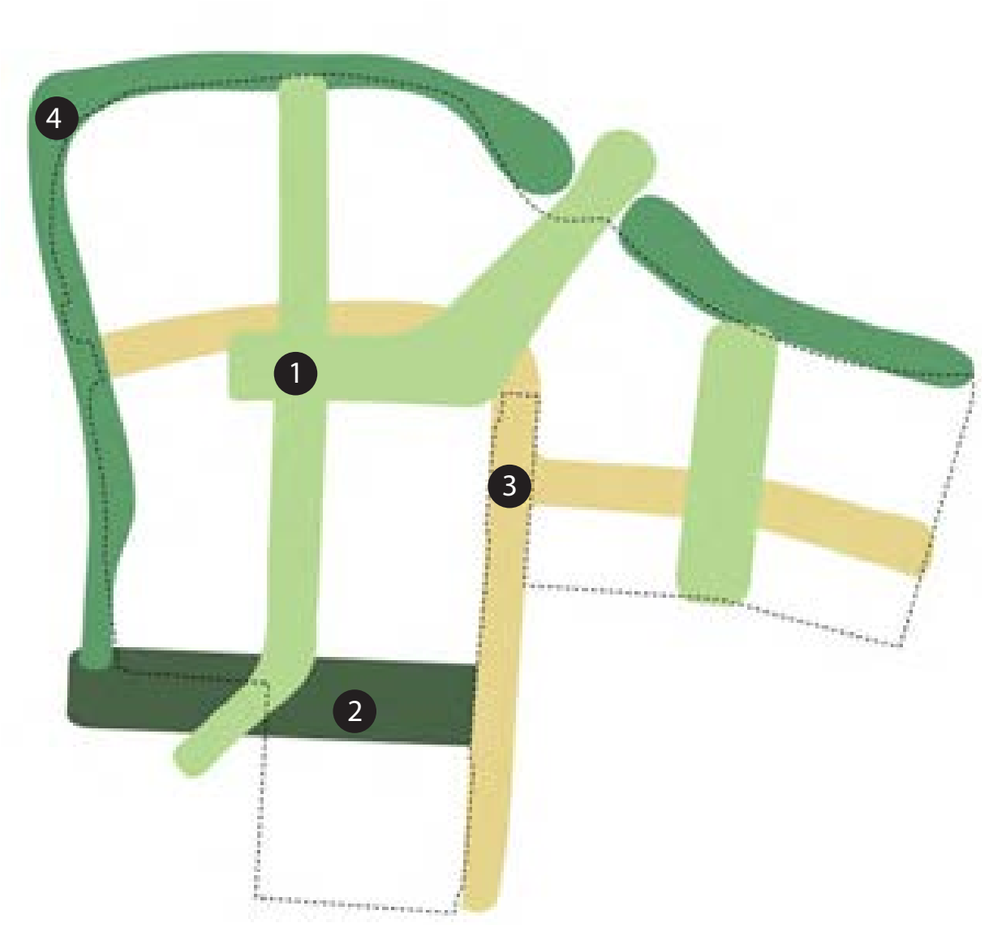
Flowery and diverse vegetation



Nature inclusive in the public realm

The public realm and landscape will be developed integrating principles for nature inclusive, enhancing the network for the local fauna. This will include different water elements, pond, Swale and water gardens, connected passages for invertebrates and seasonal green to provide for local fauna.

Landscape Planting and Maintenance diagram



Landscape type	Planting specifications	Maintenance requirement
1 Linear green		
2 Community street		
3 Primary street		
4 Green edge		

1
Linear Green

Robust green environment with grass land meadow. Medium size park tree with natural landscape atmosphere. With suitable plant selection, maintenance requirement is medium to low.

Perennial plantings:

- cut back perrenials 1x per year. Cut back evergreen perennials ca. 1x per 3 year.
- Weeding ca. 5-6x per year (depending on soil and rainfall)

Bioswale (perennials)

- Cleaning the non-planted area ca. 1x per year to ensure maximal water retention and waterflow : remove leaves and trash. For the rest it is the same as the perennial plantings

Bioswale (extensive grass/meadow)

- Cleaning the non-planted area ca. 1x per year to ensure maximal water retention
- Mowing the meadows ca. 2-3x per year (depending on soil and rainfall)

Retention pond / water runoff

- Cleaning the bottom ca. 1x per 3 years to ensure maximnal water retention.

Intensive grass at communal spaces

- Communal spaces are mowed ca. 23 x per year.

Shrubs:

- Pruning depending on the species, only if needed.
- No recurring actions if the right species are selected.

Trees:

- Pruning for safety (1x per 3-6 years)
- 1x per 3 years in the first 6 years.
- First 2 years establishment perios require irrigation in dry periods

General:

- Cleaning leaves that fall on the pavements 1 or 2 times in late autumn.

2
Community Street

Natural tree cluster along both sides of street with extended raingarden. The area requires relatively high maintenance for street safety and multifunctional use of the space.

Perennial plantings:

- cut back perrenials 1x per year. Cut back evergreen perennials ca. 1x per 3 year.
- Weeding ca. 5-6x per year (depending on soil and rainfall)

Bioswale (perennials)

- Cleaning the non-planted area ca. 1x per year to ensure maximal water retention and waterflow : remove leaves and trash. For the rest it is the same as the perennial plantings

Shrubs:

- Pruning depending on the species, only if needed.
- No recurring actions if the right species are selected.

Trees:

- Pruning for safety (1x per 3-6 years)
- 1x per 3 years in the first 6 years.
- After that 1x per 6 years
- Trees near streets with traffic need to have an eventuel drive-through height of 6 meters
- First 2 years establishment perios require irrigation in dry periods

General:

- Cleaning leaves that fall on the pavements 1 or 2 times in late autumn.

3
Primary Street

Row of mature trees with linear structure of rain garden along the road. Medium to low maintenance requires for safety.

SuD (perennials)

- Cleaning the non-planted area ca. 1x per year to ensure maximal water retention
- Same as perennial plantings

Trees:

- Pruning (1x per 3-6 years)
- 1x per 3 years in the first 6 years.
- After that 1x per 6 years
- Trees near streets with traffic need to have an eventuel drive-through height of 6 meters
- First 2 years establishment perios require irrigation in dry periods

Shrubs:

- Pruning depending on the species, only if needed.
- No recurring actions if the right species are selected.

4
Green Edge

High grass with mixture of multi stem trees. Robus green as a buffer to improve visual and sound quality in the project area. With native plant selection, maintenance requirement is low.

Perennial plantings:

- cut back perrenials 1x per year. Cut back evergreen perennials ca. 1x per 3 year.
- Weeding ca. 5-6x per year (depending on soil and rainfall)

Shrubs:

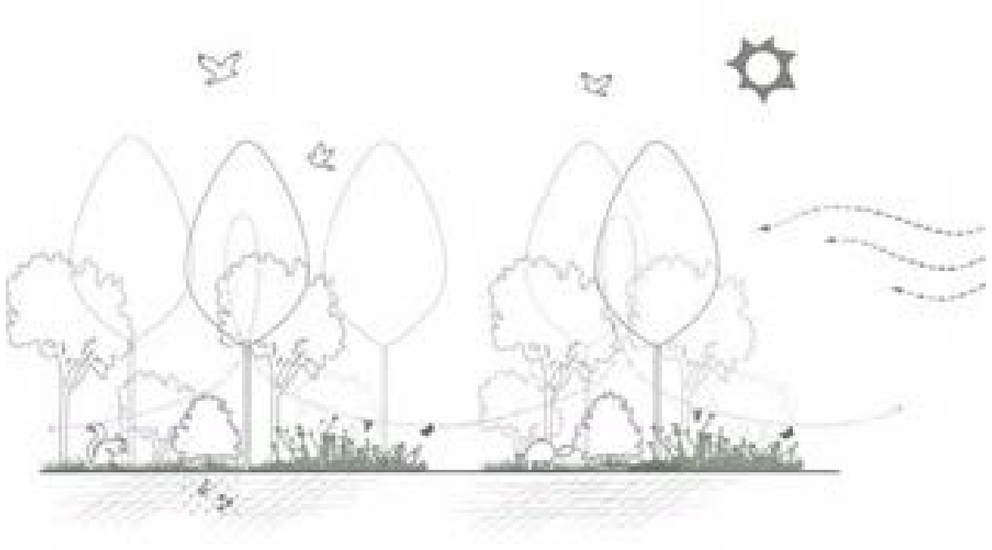
- Pruning depending on the species, only if needed.
- No recurring actions if the right species are selected.

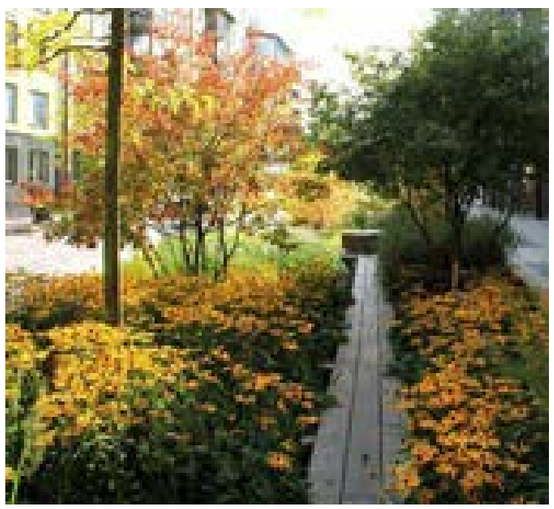
Trees:

- Pruning for safety (1x per 3-6 years)
- 1x per 3 years in the first 6 years.
- First 2 years establishment perios require irrigation in dry periods

General:

- Cleaning leaves that fall on the pavements 1 or 2 times in late autumn.





Landscaping precedent - Jaktgatan, Stockholm

Design Guidance

Network of Spaces

The LCEZ masterplan public realm strategy will deliver a series of well-connected green open spaces, forming a coherent network throughout the area and connecting to the wider Northstowe, notably The Green open space to the south and the Balancing Pond green space to the north of the site. A range of green spaces will be provided to ensure new and existing communities have easy and safe access to open spaces that promote health and well-being. The masterplan envisages both major public spaces serving the wider community, and local public spaces that serve adjacent developments.

- Each block in the LCEZ area must contain both a local green space provision and adjacency to at least one major green space;
- The major green space provided by the Linear Green Park must deliver high-quality and substantial green open space that is consistent in design and delivers measurable benefits in terms of biodiversity, sustainable urban drainage, air quality, health and well-being, inclusive amenity and facilitates social inclusion;
- The civic space provided by the Community Street area must deliver high-quality new public realm that balances hard landscaping with new green features and infrastructure, while ensuring the inclusion of sustainable urban drainage, improved tree cover and inclusive amenity that supports the health and well-being of communities;
- The local green spaces provided by the Business Courtyards must provide high-quality green open space that is safe and accessible to surrounding development. These spaces must deliver measurable benefits in terms of biodiversity, sustainable urban drainage, air quality, health and well-being, inclusive amenity, and facilitating social inclusion;
- All public spaces should be well-fronted by development and activated by active frontage and overlooking, avoiding blank frontages onto public spaces wherever possible;
- Landscape and public realm design must allow access for emergency and servicing vehicles where necessary. These routes should be fully integrated with the landscape design and should not compromise the integrity of the public realm;

Strategic Public Realm

The LCEZ area is structured around four strategic public realm elements which stretch across multiple character areas yet require an integrated and consistent approach.

Linear Green Park

The Linear Green Park provides a major green space

- The Linear Green Park must provide a consistent, legible, comfortable and attractive walking and cycling route between the Park & Ride and the existing Green open space;
- Pedestrian and cycling movement must be prioritised where the Linear Green Park intersects with vehicular movements on Stirling Road between Parcels 3 and 4 and at the bend of Link Lane;
- Where vehicle routes interesect the Linear Green Park, they must be designed for low-speeds, provide safe and generous crossing points, and prevent parking within the green space itself;
- The separate components of the Linear Green Park must exhibit a common design language and landscaping treatment that can flexibly adapt to change in local conditions (in terms of built form, activity, etc.)
- Landscape and public realm proposals throughout the green spine must contribute to the creation of a connected and itnegrated approach to sustainable drainge, through connected swales and SuDS;
- Public realm and landscape proposals within the green spine must prioritise the delivery of high-quality green spaces and planting in favour of large areas of hard landscape;
- Layered landscape structure
- Public realm and landscape proposals must accommodate identified key views, and allow longer views down the Linear Green Park, particularly from the P&R to the F&B pavilion, and towards the Green open space;
- Development adjacent to the Linear Green Park must front onto this major green space and is expected to be of a high design quality, reflecting the important of this major public realm;
- Building edges of developments adjacent to the Linear Green Park should accommodate green pockets and terraces of open lawn areas to provide opportunities for break-out spaces from the commercial buildings;
- Development along the Linear Green Park must be coherent, responding sensitively to context and transitions between character areas must be carefully designed as well-articulated and deliberate shifts in character.

Community Street

- The Community Street must deliver a legible and

inclusive pedestrian connection between Station Rd and Links Ln, linking the amenities of the Local Centre, the Green open space, the Community Centre, and the retail provision into a coherent, inclusive, accessible centre of activity;

- The Community Street must prioritise pedestrian and cyclist movement;
- Development adjacent to the Community Street must prioritise the delivery of active frontage to ensure this route is well-overlooked and activated;
- Lighting along the Community Street must endure the route is safe, particularly at night, as a crucial link between wider residential areas across the Local Centre;

Play Provision

- Play provision should comply with Government guidelines and local policy, and the requirement outlined in the Design Code 2014.
- Public realm and landscape designs should consider sites for imaginative play through integrated play features and natural landscape (i.e. boulders and landforms) alongside more conventional play equipment;
- Each proposed play space should be designed specifically for its location and with regard to surrounding uses, to suit different ages and abilities and encourage social interaction;

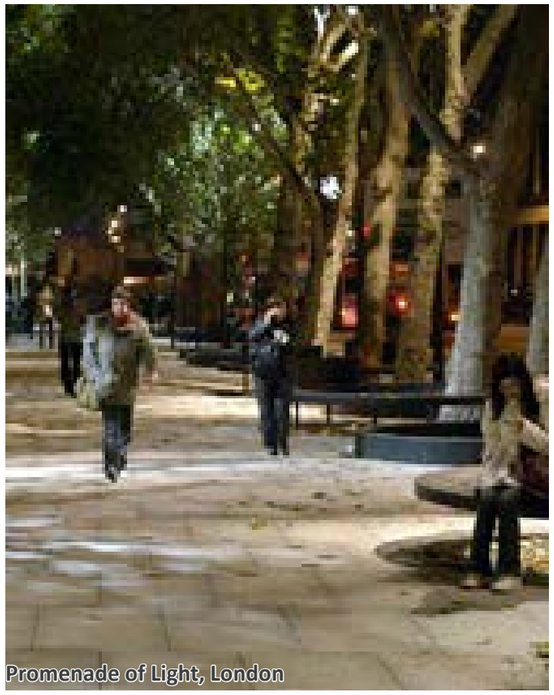
Space & Streets for All

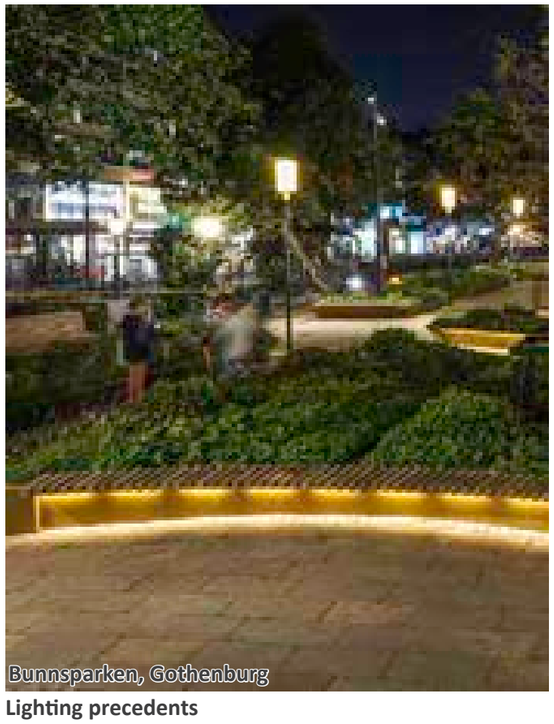
- Streets and public spaces must be designed to accommodate a diverse community of people, providing amenities and facilities for a range of ages and abilities, including for children, teenagers and the elderly, especially in Community Street area;
- Benches and informal opportunities for seating must be provided at regular intervals within streets and public spaces;
- Proposals for public sitting and street furniture must allow opportunities for integration of wheelchair users, including seating that provides arm and backrests;
- Public drinking fountains should be provided in all public spaces for the benefit of visitors and the local community;
- Public WCs to universal design standards should be included within major strategic green and civic spaces;
- Opportunities for the incorporation of gym equipment and other amenity equipment for elderly and disabled users, should be incorporated within major green and civic spaces;
- Major green and civic spaces must include provision for in-ground power outlet and associated infrastructure to enable the easy staging of a range of temporary events;

Street Furniture

- All street furniture choices must follow guidance included within the Design Code 2014
- Street furniture must be robust and of a contemporary and simple design, using a limited palette of materials;
- Areas of seating must be provided within all public spaces. Seating can form part of other structure (i.e. planters) as well as free-standing arrangements. More seating is always better than less in any space;

Activities for all - Mellemrummet, Copenhagen


Promenade of Light, London


Bunnsparken, Gothenburg

Lighting precedents

- Street furniture within major strategic green and civic spaces must be consistent and can feature bespoke items that best integrate with special landscape and public realm treatments;
- Street furniture must be located with enough space to ensure it can fulfil its function appropriately;
- Street furniture should be clustered to best enable social interaction while avoiding obstructions of pedestrian desire lines and satisfyinh public transport operational requirements;
- Street furniture placement must not clutter footwats unnecessarily and must mazimise unobstructed widths for comfortable pedestrian movement;
- Street furtnireu should be located to best responf to appropriate sunlight and micro-climatic conditions, such as seating areas being located on the 'sunnier side of the street';
- Signage should be located in a way that does not create clutter within the street or public space and should be places on buildings where possible;
- Street furniture should maximise opportunities to merge and combine components for dual functions where possible, i.e. signage on lamp-posts;
- Dog bins must be located within the major green open spaces where residents are most likely to walk their dogs;

Public Realm Materials

- All public realm material choices must follow the guidance.
- All public realm materials must be robust, of high-quality, and be sustainably sources and manufactured;
- Material choices and colours must be muted and of a restrained palette that complement and fo not detract from the wider built environment and landscape setting;
- Materials for footways must use smooth, non-slip surfacing to create streets that are safe and comfortable for all users. All hazard paving must comply with relevant British Standards;
- Material choices throughout the major green and civic spaces must be consistent to promote continuity of design and treatment; - see Design Code 2014

Lighting

- All lighting within the public realm must follow guidance included within the Design Code 2014
- All lighting must be designed to use high quality efficient lighting systems to minimise energy consumption and avoid light pollution;
- Lighting selection and palettes must be consistent across the entirety of a street, major green open space civic space, and character areas;
- All lighting must avoid adverse effects on ecological
habitat areas;

Community Street:

- Lighting choices should create attractive urban settings that also facilitate an improved night-time setting to best promote the evening economy;
- Lighting proposals within the Community Street area should include attractive amenity lighting to provide relevant focal points, including appropriate lighting provision to accommodate temporary events to take place;

Linear Green Park:

- All lighting must achieve an upward light ration of 0% to best protect fauna from the impacts of light pollution;
- All lighting strategies should ensure that all non-necessary lighting is turned off at an agreed curfew time to prevent negative impacts on fauna,
- Low level lighting solutions such as bollards or solar studs may be put forward as possible alternative for full lighting installation within the linear green park areas;

Courtyards:

- Lighting within the residential courtyard should be restrained and od a consistent palette;
- Low level light solutions such as bollards or solar studs may be put forward as possible alternative for full lighting installation within local green spaces;

Street Lighting

- The design of lighting on adoptable public highwats must comply with requirement from Cambridge / Cambourne Highways Department;
- Lighting within residential areas should be restrained and of a consistent palette;

Spaces for Nature

- Green edge is the main natural space to deliver biodiversity gains

Pedestrian paths precedent - Holland Park Villas

Forested cove precedent - Television Centre, London

- Planting should have a layered landscape structure that incorporates wet and dry habitats, including large, medium and small trees, shrubs, perennials and grasses.

Trees & Planting

- Planting and tree selection within the LCEZ should promote the resilience of biodiversity and climate change adaptation, following best practice guidance including the recommendations of the Forestry Research's Urban Tree Manual;
- Planting and landscape design should seek to create and enhance the different identities of the character areas and hierarchy of public spaces and streets as described in this design guidance;
- Planting selection must delver biodiversity and wildlife value, together with visual and seasonal interest, including evergreen species that provide year round interest;
- Proposed plant sizes and densities must deliver a vigorous and attractive visual appearance at time of planting and subsequently;
- Planting beds and verges must be designed to accommodate adequate growing medium for sustained healthy plant growth, and provide high-strength linear root barriers on either side to protect adjacent paving;
- Planting choices and design must enable the LCEZ to be resilient to the effects of global warming by enabling sustainable drainage, providing shade to reduce urban heat island effects, while ensuring drought tolerance through species selection;
- Tree and planting selections must avoid species associated with destructive diseases. A range of tree and plant species should be specified to mitigate against the effects of possible future pathogens;
- Existing trees must be protected where possible and incorporated into landscape and public realm designs. Where trees can not be incorporated, replacement tree planting must be provided to compensate for any net loss of trees within LCEZ;
- All new trees and shrubs should be planted at a spacing and density that allows them to grow to maturity without requiring regular pruning, and taking into account key views, visibility splays, signage and light fittings;
- All new trees should be plated as semi-mature specimens, where possible, for instant impact and to help reduce the risk of damage through vandalism or accidental damage;
- Tree placement and design must ensure suitable rooting area, medium, drainage, stability and coordination with surrounding built form to sustain tree growth into maturity and minimise maintenance;
- Trees should be planted in continuous rooting trenches where possible to enable roots to spread into the space between the trees;
- All new trees provided in hard surface areas must feature rooting areas that are load bearing to ensure structural integrity of the surface above while avoiding soil compaction;

Drainage&SuDS

- The surface water drainage strategy for the LCEZ is to promote resilience and adaptation to climage change based on SuDS (sustainable drainage systems) principles. SuDS seek to mimic natural drainage by storing runoff water and releasing it slowly, harvesting and using rain where it falls, allowing water to soak into the ground and conveying water slowly in a way that minimises flood risk and addresses pollution.
- Detailed design for surface water drainage throughout the LCEZ must comply with best practice guidance as described in the SuDS Manual C753, CIRIA;
- Proposed SuDS must consider the potential for pollution and contamination in runoff and address this accordingly;
- Opportunities for green roofs should be considered within all new development, where possible, and designed to address both sustainable drainage and biodiversity, and discharge appropriately to the wider network;
- Water drainage system must direct runoff towards the water pipe towards the main water collection
- All street types should prioritise the use of permeable materials and surfacing to best enable sustainable drainage of rainwater.

Planting strategies and biodiversity enhancement interventions

Working like nature

5.5. Sustainability

Development Principles (November 2019) by BNE - Urban Design Greater Cambridge Shared Planning

- a positive and attractive northern gateway to the future town

- an urban place with adequate landscape that provide green links, connections and places for people to enjoy

- integration of sustainable urban drainage solutions;

- provision for sustainable travel and innovative approaches to car parking, prioritising pedestrian and cycling links

- transition to net zero carbon

- holistic approach to sustainable development to be embedded from the outset

- non-residential buildings to achieve BREEAM 'excellent' with at least 10% of the buildings regulated energy coming from on-site renewable sources;

- at least 3 BREEAM Wat 01 credits related to water efficiency to be achieved

- Development to be climate resilient and buildings to be future proofed

- enhance health and wellbeing with reference to biophilic design and consideration of WELL Standards

Defining Sustainable Development

We propose to define sustainable development based on Kate Raworth's 'Doughnut Economics' concept.

This proposes that true prosperity is only achieved when certain fundamental social needs are met, without exceeding the ceiling of ecological limits.

The 'regenerative and distributive economy' is the area within which inclusive and sustainable development takes place. Here, the economy is seen to create social and economic value in a way that also preserves and regenerates the environment.

Our approach combines the Doughnut Economics concept and considers the United Nations Sustainable Development Goals to define a site-specific framework for sustainable development.

Vision and priorities

The integrated provision of the Employment Zone and Local Centre will bring economic activity, community infrastructure and a sense of place to Phase 1 of the Northstowe new town.

The development proposals will need to respond to the local site context and in particular aspirations for Net Zero Carbon development, embedding circular economy principles and challenges around water stress in the Cambridge area.

They will also be aligned with national and local policies to deal with the challenge of climate change, loss of biodiversity and bring of opportunities to build social value, pathways into new careers and opportunity for the wider region.

Supporting Themes

We propose to frame the response to sustainable development into the four adjacent themes.

A vision is proposed for each theme, aligned with the aspirations of the development and with a focus on addressing the specific challenges and opportunities of the site.

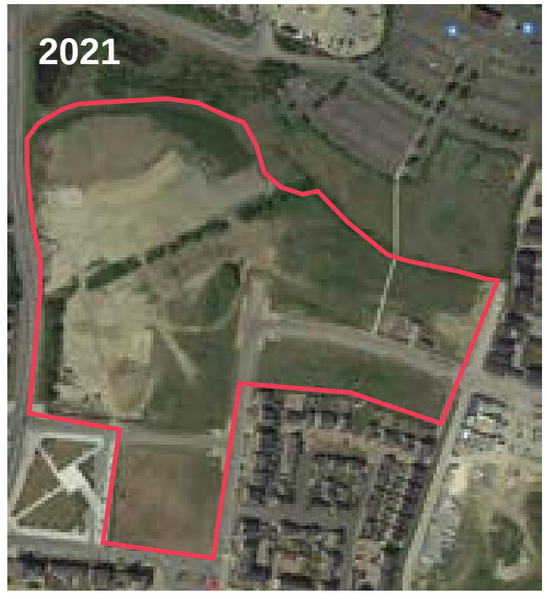
Each theme is covered in the following sections.

1. Environment and Resilience - exemplar resilience to climate change and enhancement of biodiversity with minimum impact of the environment;

2. Carbon and Resources - a Net Zero Carbon development with minimum water footprint, embedded in a local and national circular economy;

3. Health and Wellbeing - a place where people work and meet in a comfortable, safe and healthy environment;

4. Transport and Mobility - an accessible place which prioritises active travel and low carbon transport;



Hydrological features and Environment Agency flood map

1. Environment and Resilience

Vision: Exemplar resilience to climate change and enhancement of biodiversity with minimum impact on the environment.

- Resilience to climate change
- Sustainable drainage and flood risk mitigation
- Achieve Biodiversity Net Gains
- Mitigate impacts of development on environment

Requirements

		Relevant policies	
		SCLP 2018	**GCLP**
	Integrate measures to enable adaptation to climate risks including flooding and overheating.	CC/1, CC/9	CC/DC
	No increase in off-site flood risk, management of stormwater peak discharge within wider masterplan.	CC/9	CC/FM
	Integrated approach to water management using SuDS to manage water at source and on the surface using features with multiple benefits, enhancing biodiversity and amenity.	CC/7, CC/8	CC/FM
	Adequate provision of foul drainage and control of pollution from stormwater runoff.	CC/7	
	Conserve and enhance biodiversity integrated with green infrastructure provision achieving at least 10% Biodiversity Net Gain, aiming towards 20% in line with aspirations of GCLP emerging policies.	NH/4, NH/6	CC/DC, BC/BG, BC/GI
	Mitigate and manage potential watercourse or groundwater contamination, as well as light, air and noise pollution. (Ground contamination is not understood to be an issue).	SC9, SC/10, SC12	WS/HS

Outline sustainable drainage and climate resilience strategy

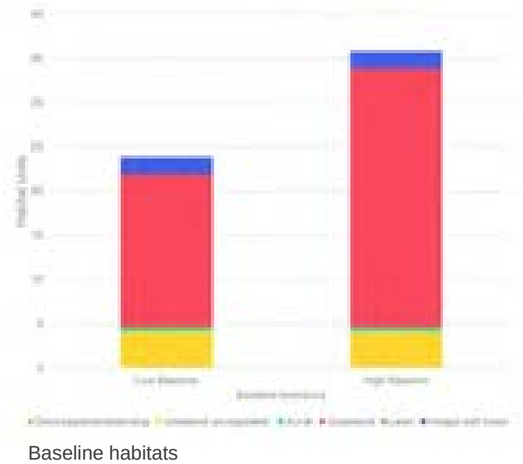
The site is in the drainage catchment of the Cottenham Lode –a tributary of the Great Ouse running to the East of the site. The site is not shown to be at risk of fluvial flooding on the EA flood map or any of the Strategic Flood Risk Assessment (SFRA) flood maps, but the Cottenham Lode is subject to severe fluvial flooding, some of which has been alleviated by the construction of fluvial flood defence.

The site and the wider area are relatively flat. The EA and SFRA flood maps identify a risk of surface water flooding to low points on the site, which are typical of the relative drainage challenges associated with low-lying and flat areas.

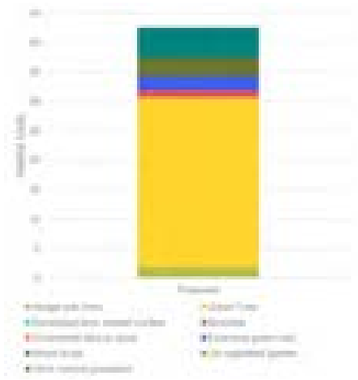
The Phase 1 drainage strategy included within the outline planning application, proposed attenuating surface water runoff into large ponds within the Water Parks to the East of the site, before discharge into the Cottenham Lode. This is designed to achieve zero discharge when the Lode is flooding and pumping of surface water flows when water levels recede. We understand that provision has been made within that system and the Phase 1 surface water pipe and open swale networks to deal with stormwater runoff from the site.

In developing a sustainable drainage strategy, the most sustainable route for disposal of stormwater runoff has been considered. The site is underlain by River Terrace deposits which could potentially offer good opportunities for infiltration drainage. This will however be limited by shallow groundwater levels.

Opportunities for infiltration drainage from shallow systems such as porous pavement systems and shallow swales will be maximised, and the majority of stormwater runoff will be taken to the attenuation ponds within the Water Parks.



Baseline habitats



Proposed habitats

We understand that there are no requirements for controlling peak discharge from the site, but surface water runoff within the site will be collected in a system of raingardens and bio-swales integrated within the landscape and enhancing biodiversity.

Retention ponds are also proposed as part of that system, opening the opportunity to harvest rainwater in a material and carbon efficient way using smart technology as discussed in Section 3.

Surface water runoff will be managed at source in line with best practice (CIRIA C753). This will include green roofs, porous pavements, raingardens and swales integrated with the green infrastructure, the proposed car park and the development plots. These measures will also help control pollution at source.

Extreme events and allowance for climate change (1:100 year +40% event) will be considered in the development of the surface water drainage system in line with the requirements of the National Planning Policy Framework (NPPF). Building finished floor levels will be set above 1:100+40% controlled flooding levels.

The maintenance of the surface water drainage system will be embedded in the long-term management plan of the infrastructure, including the green infrastructure.

Further details on the blue infrastructure are included within the Landscape Strategy .

Building massing and layout will be optimised for climate resilience, to ensure excellent levels of internal and external comfort are maintained. Buildings will be designed for future adaptability and flexibility. Light

coloured finishes, green infrastructure and sustainable drainage features will help achieve high levels of external comfort. This is further discussed in Section 4.

Outline green infrastructure strategy

The site was predominantly agricultural land with a small extent of golf course. A commercial building has occupied the site for a relatively short period, before being demolished. At present the site is undeveloped, with unmanaged grasslands and shrubs, and remaining hedgerows.

The site does not fall within any ecological designation or nature conservation areas.

No recent ecological surveys have been carried out, but the history of the site and available information included within the outline planning application suggest that the site has limited ecological value.

Green infrastructure provision within the masterplan will aim at enhancing biodiversity, mitigate the impact of the development on existing habitats and contribute to climate resilience.

Biodiversity will be enhanced within the development site with the provision of green roofs, planting and soft landscape, sustainable urban drainage systems, retention of the existing hedgerow and following nature inclusive design principles. This will aim to create an integrated and inter-connected biodiversity network, linking to habitats beyond the redline.

Seasonal planting and green space will provide useful summer shading and prevent overheating, contributing to a comfortable external microclimate.

Further details on the green infrastructure, planting and nature inclusive design approach are included within the Landscape Strategy.

The green infrastructure strategy will aim at achieving at least 10% Biodiversity Net Gain, aiming towards 20% in line with aspirations of GCLP emerging policies.

A preliminary assessment of what biodiversity net gain may be achievable has been carried out based on best available information on the site baseline and current masterplan proposals using the DEFRA Biodiversity Metric 3.0. Refer to Appendix B for details of the assumptions underpinning the assessment.

The initial assessment shows significant sensitivities to the assumptions about the ecological value of the existing habitats. It will be critical to carry out the necessary ecological surveys to confirm the baseline.

Biodiversity Net Gains of 10 to 20% would be achievable with the current masterplan. The palette of necessary interventions to achieve this will depend on the baseline condition.

Further enhancements, such as intensive green roofs and additional hedgerows will be required if the existing ecological value of the site was found to be relatively high.

2. Resources and Carbon

Vision: A Net Zero Carbon development with minimum water footprint, embedded in a local and national circular economy.

Net Zero Carbon Development
Embed circularity from the outset
Exemplary water conservation

Requirements	SCLP 2018	GCLP
Envelope performance requirements to achieve 15-20KWh/m^2 for annual space heating demand.	CC/3,CC/1	CC/NZ
Energy Use Intensity (EUI) no more than: 55kWh/m^2 for offices and community facilities; 110kWh/m^2 for light industrial facilities; and 35kWh/m^2 for residential buildings (LETI, RIBA 2030).	N/A	CC/NZ
All-electric energy strategy using low carbon heat sources.	CC/3, CC/1	CC/NZ
On-site renewables to meet total operational energy.	CC/3	CC/NZ
Achieve 600-750kgCO2/m^2 in whole life embodied carbon (RIBA 2030).	CC/1, CC/6	CC/NZ
Potable water consumption of at least 55% reduction from BREEAM baseline.	CC/4, CC/1	CC/WE
Monitor and report energy, water and waste consumption .	CC/1, CC/6	CC/NZ
Embed circularity on the design from the outset minimising waste at all stages.	CC/1, CC/6	CC/CE
Set ambitious waste diversion and recycling targets.	CC/1, CC/6	CC/CW, CC/CE

Outline strategy for achieving a Net Zero Carbon development

Our approach to developing a Net Zero Carbon strategy for the project will consider embodied, operational and end of life carbon emissions. The Net Zero Carbon strategy would be closely integrated with other aspects of sustainable development including place making, health and well-being, climate resilience and biodiversity described in other sections.

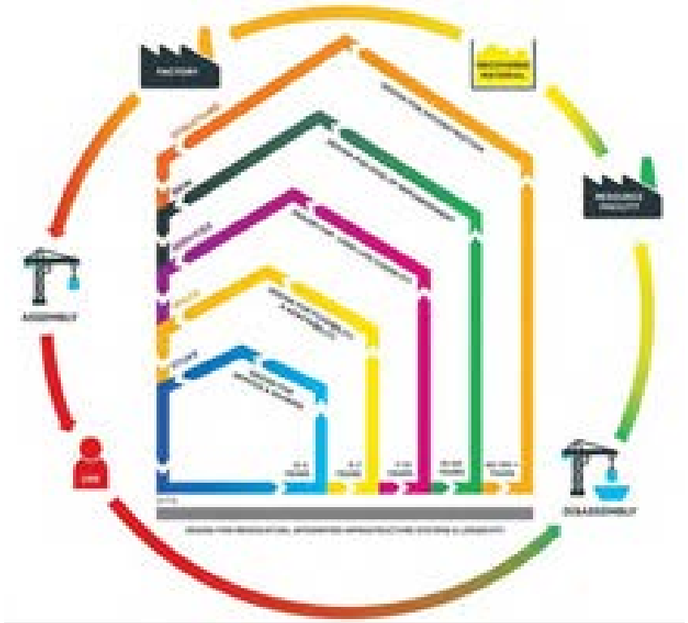
Reducing energy demand through effective passive design measures will be a key first step of this approach. Building massing, orientation and facade treatments will be optimised to respond to the local microclimate, maximising opportunities for energy efficiency and passive design, good levels of natural light and thermal comfort within buildings.

Envelope efficiency measures adapted to each building type will be proposed to achieve the envelope performance and Energy Use Intensity requirements.

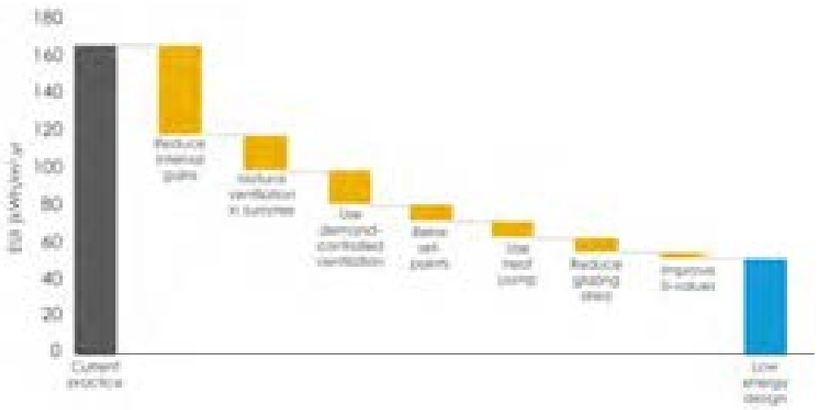
An electricity-led solution, based on highly efficient heat pumps combined with on-site renewables will be developed for the Employment Zone and Local Centre.

The proposed development, and its integration with existing facilities, with the resulting mix of different building use and occupancy schedules offers a significant opportunity to consider potential synergies between different building types to recover waste heat from specific buildings for domestic hot water or space heating use in other buildings, using an optimised ambient loop system (“5th generation district heating”). This provides benefits of carbon reduction and reducing peak loads on the heat network.

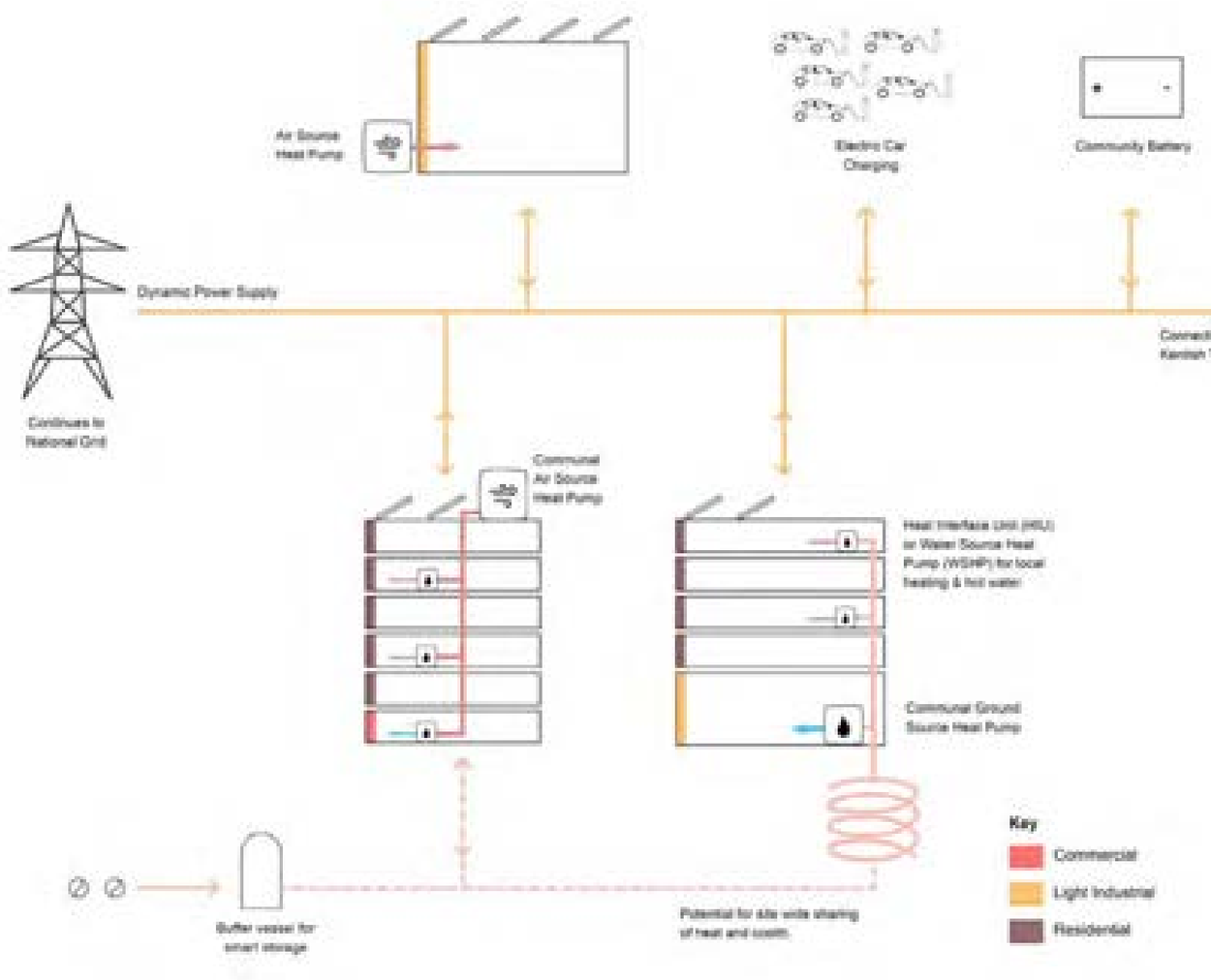
Consideration will be given to integrating that system with the proposals for future phases of the Northstowe development.



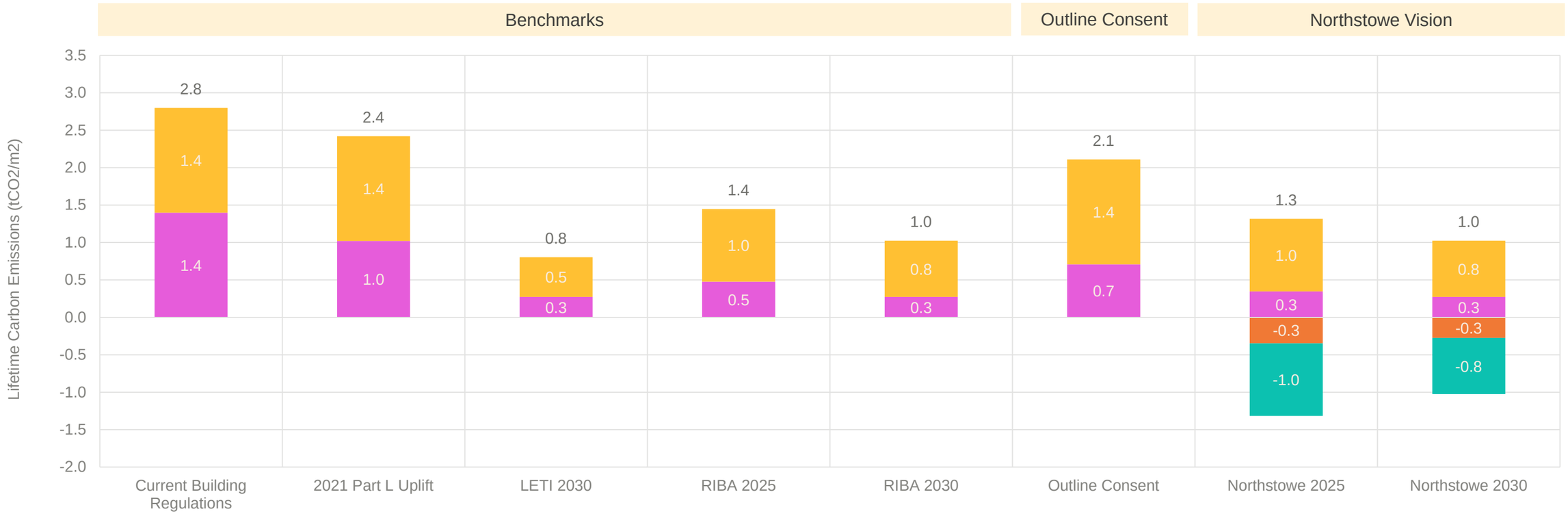
Circular economy principles



Opportunities to reduce energy consumption in non-residential buildings (LETI Climate Emergency Design Guide)



Example of 5th generation district heating system and integrated power networks



Current Building Regulations	2021 Part L Uplift	LETI 2030	RIBA 2025	RIBA 2030	Outline Consent	Northstowe 2025	Northstowe 2030
• Gas to provide heating • No renewables • Based on Compliant New Build • Embodied – 1400 $kgCO_2/m^2$ (RIBA BAU)	• 27% reduction on Current Building Regulations • Gas to provide heating • Embodied - 1400 $kgCO_2/m^2$ (RIBA BAU)	• Space heating /cooling of 15 kWh/m^2 • EUI of <55 kWh/m2.a • Fossil fuel free • Grid Intensity 105 gCO_2/kWh • Embodied - 530 $kgCO_2/m^2$	• Space heating /cooling of 15 kWh/m^2 • EUI of <75 $kWh/m^2.a$ • Fossil fuel free • Grid intensity 85 gCO_2/kWh • Embodied - 970 $kgCO_2/m^2$	• Space heating /cooling of 15 kWh/m^2 • EUI of <55 $kWh/m^2.a$ • Fossil fuel free • Grid Intensity 105 gCO_2/kWh • Embodied - 750 $kgCO_2/m^2$	• 10% reduction from Part L 2021 • Fossil fuel free • Grid Intensity 105 gCO_2/kWh • Embodied –1400 $kgCO_2/m^2$	• Space heating /cooling of 15 kWh/m^2 • 0.25m^2 of PV per m^2 GIA • EUI of 55$kWh/m^2.a$ • Fossil fuel free • Grid Intensity 105 gCO_2/kWh • Embodied - 970 $kgCO_2/m^2$ • Emerging Greater Cambridge Local Plan ambitions	• Space heating /cooling of 15 kWh/m^2 • 0.25m^2 of PV per m^2 GIA • EUI of 55$kWh/m^2.a$ • Fossil fuel free • Grid Intensity 85 gCO_2/kWh • Embodied - 750 $kgCO_2/m^2$ • Emerging Greater Cambridge Local Plan ambitions

Lifetime Carbon (60 years) for commercial spaces per m^2

On-site renewables will be integrated with smart technologies. This includes roof mounted photovoltaic (PV) panels integrated with green roofs, as well as introducing PVs on the existing park and ride facilities and proposed car park.

Advanced renewable solutions will also be considered such as solar tiles and photovoltaic cells embedded in the building fabric, smart management of electricity loads, advanced battery storage and integration with electric vehicles to reduce peak loads on the electricity grid.

Once operational carbon has been reduced through the above measures, it is estimated that embodied carbon would represent circa 70% of the whole life carbon footprint of the development. Approaches to minimise embodied carbon are discussed in the next section.

The diagram on the next page illustrates how a route map to net zero carbon would be defined for the development with reference to current building regulations and industry standards.

Inevitably on a project of this type carbon offsetting or insetting will be required to achieve Net Zero Carbon. Offsetting approaches will include contributing to tree planting schemes, off-site renewables schemes or retrofitting of existing buildings. Insetting initiatives could include contributing to funding initiatives to minimise embodied carbon within the supply chain, for example supporting a shift to low carbon concrete.

Estimated capital cost uplift

The diagram of the previous page illustrates whole life carbon impact for the following scenarios:

• Development compliant with the outline planning consent for the Northstowe new town without aiming to achieve Net Zero Carbon.

• Buildings that would be built by 2025

• Buildings that would be built by 2030

The uplift in capital cost against Part L 2021 baseline for the Outline Consent and Northstowe 2030 scenario have been estimated based on UK Green Building Council (UKGBC) guidance (Building the Case for Net Zero, 2020), standard cost of renewables and standard costs of offsetting residual carbon.

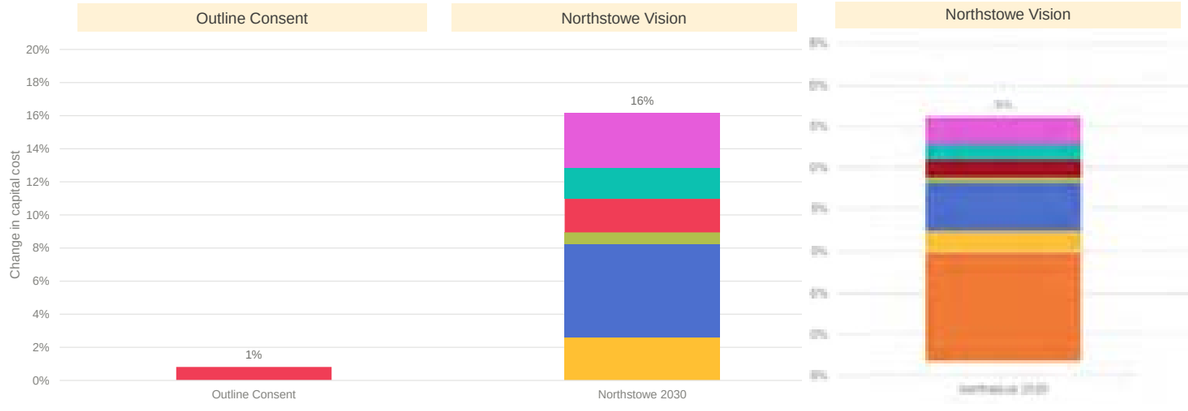
The UKGBC guidance suggests a significant risk factor. Without the risk factor, the construction cost uplift on Part L 2021 baseline is estimated as +13% for the Northstowe 2030 scenario. The net uplift against the Outline Consent Scenario is estimated as +12%.

Estimated capital cost uplift (60 years)

Whole life costs have also been estimated for the Northstowe 2030 scenario.

Interestingly, if the developer was to retain ownership of the buildings, the 2030 scenario would be broadly neutral in terms of whole life costs, against Part L 2021 Baseline.

The net whole life cost uplift is estimated as +3%, but this includes the design risk factor from the UKGBC guidance.



- Minor improvements to fabric/systems/materials to achieve 10% reduction for Building Regulations
- All electric energy strategy
- Standard steel frame with composite floor slabs
- U-value of 0.2 and infiltration of 5 $m^3/h/m^2$
- 80% glazing ratio, U-value of 1.4, G-value of 0.32

- PV cost associated with offsetting on-site operation energy (1,200/KW, Greenmatch)
- Offset costs of £64/tonne (World Bank)
- Air source heat pumps
- Steel frame with CLT floor slabs
- BMS to provide mixed mode cooling via chilled beams and openable windows
- External shading
- U-value of 0.15 and infiltration of 1.5$m^3/h/m^2$
- 40% glazing ratio, U-value of 1.2, G-value of 0.28
- Exposed ceiling and services

- PV cost associated with offsetting on-site operation energy (1,200/KW, Greenmatch)
- Offset costs of £64/tonne (World Bank)
- Air source heat pumps
- Steel frame with CLT floor slabs
- BMS to provide mixed mode cooling via chilled beams and openable windows
- External shading
- U-value of 0.15 and infiltration of 1.5$m^3/h/m^2$
- 40% glazing ratio, U-value of 1.2, G-value of 0.28
- Exposed ceiling and services
- Electricity unit cost of 15p/kWh and gas unit cost of 3p/kWh

Circular economy and sustainable construction

An approach built on circular economy principles will be adopted to minimise the overall environmental footprint and embodied carbon of the development. This will include:

• Lean design and specification, informed by a whole life approach.

• Minimise use of virgin materials and set an aspirational target for percentage of reused and recycled materials used on site.

• Lightweight construction and optimised foundation systems. Promote timber construction and Design for Manufacture and Assembly (DfMA) with a preference for off-site and prefabricated components.

• Pared back material palette that is low waste and low maintenance, avoiding any unnecessary finishes.

• Review enhanced fabric solutions against embodied carbon impacts.

• Reduce lifecycle impacts of MEP solutions and technology sourcing.

• Design for flexibility and future change of use, disassembly and end of life following circular economy principles.

This diagram illustrates the embodied carbon associated with different structural systems for building construction. Minimum embodied impact is achieved with timber construction, which in turn would also reduce the embodied impact and whole life cost of building foundations.

Considering the building types and heights within the Employment Zone and Local Centre, there is a significant opportunity to maximise timber construction.

Exemplary water conservation

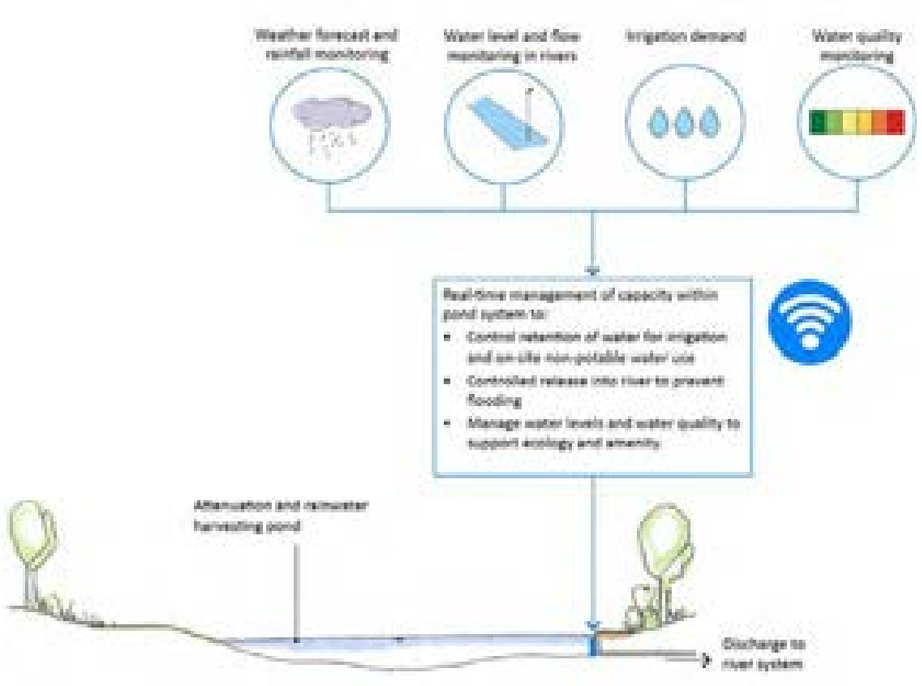
Cambridgeshire is one of the UK's driest and fastest growing regions. Climate change will likely increase the stress on water resources, and it has been identified as crucial to carefully manage these resources.

Exemplar levels of water efficiency are proposed. This will include the specification of efficient water fittings, metering, leak detection as well as use of drought resistant native planting with no permanent irrigation requirements beyond the establishment period.

In addition, to achieve the required 55% reduction in potable water demand use, smart rainwater harvesting technology will be used for non-potable water supply to buildings.

This novel technology, such as the Aqua Storm Control from Aqua-Lity, is based on real-time management of the drainage attenuation capacity. A smart management system takes a feed from the weather forecast and controls in real-time the retention of water in dry periods for use in buildings, or its release in anticipation of a storm to free up the attenuation capacity.

This smart technology removes the need for a dedicated rainwater harvesting tank and allows harvesting rainwater in a material, carbon and cost-efficient way. This technology has been successfully implemented in the US and mainland Europe for over a decade and is being applied in the UK to a growing number of projects.



Smart harvesting of rainwater

Materials and carbon benefits

3. Health and Wellbeing

Vision: A place where people can work in a comfortable, safe and healthy environment.

- Design with nature and wellness
- Comfortable buildings and public realm
- Create social value

Requirements	SCLP 2018	GCLP
Adopt biophilic design principles and integrate with landscape strategy.	SC/12	GP/QP
Design quiet and secluded spaces for mental health.	HQ/1	GP/PP
Exemplar levels of daylight, thermal comfort, air quality and acoustics within buildings.	SC/12	GP/QD
Provide comfortable public realm spaces.	HQ/1	GP/QD, GP/QP
Undertake early-stage microclimate modelling to maximize opportunities for comfort in integration with energy strategy.	HQ/1	GP/QD
Enable spaces that are inclusive, promote engagement, interactions and inspire innovations.	HQ/1	GP/PP, WS/IO

Design with nature and wellness

The development of building proposals and external areas will create a healthy environment, built on biophilic principles and achieving high levels of comfort. Research has shown that exposure to natural elements (daylight and plants) is linked with health and helps relieve stress and mental fatigue.

A variety of spaces across the proposed development will encourage interactions and innovation and also quieter spaces that allow occupants to recharge.

The approach to the design of public realm and external spaces will aim at creating sheltered sunny spaces, maximising passive and urban cooling techniques to minimise the urban heat island effect.

The infrastructure for active travel will be integrated within the public realm design, enhancing ease of navigation and identity.

Comfortable buildings and public realm

To complement the energy and climate resilience strategies a set of comfort criteria for buildings and external spaces is proposed to ensure energy efficiency is balanced with excellent levels of thermal and visual comfort, as well as air quality and noise mitigation.

The adjacent table sets out a framework to ensure excellent levels of comfort buildings are achieved in buildings and external spaces taking guidance from industry best practice.

An integrated design to achieve the Net Zero Carbon aspirations and high level of internal and external comfort will be achieved through early use of parametric 3D environmental modelling tools. This approach will help define building massing and orientation, facade treatments, shading strategies as well as planting strategy and landscape design.

An example of this approach is illustrated on the adjacent images.

Themes	Objectives	Requirements
Comfortable buildings	Achieve excellent daylight and sunlight levels	Achieve 'low' to 'medium' levels of Spatial Daylight Autonomy, sunlight and views as set out in BS EN 17037. Absolute minimum based on UK Annex criteria.
	Mitigate risk of overheating in Naturally ventilated buildings for current and future Climate	Pass overheating criteria set out in CIBSE TM52 for non-residential buildings
	Achieve excellent control of internal noise	
	Achieve excellent air quality within buildings	
Comfortable public realm	Achieve excellent and sunlight access to the public realm, green spaces, play spaces and communal external amenity areas. Control high levels of solar radiation in the height of summer.	70% of open spaces and 50% of courtyard spaces should receive at least 2 hours of direct sunlight on 21st March, and over 4 hours for play spaces.
	Control local wind speeds	Control local wind speeds and turbulence avoiding the creation of wind canyons and wind hotspots. Wind speeds at ground level should not exceed 2.5m/s for areas with frequent outdoor seating, 4m/s for areas with occasional sitting, and 6m/s for areas with standing.
	Mitigate urban heat island effect	Mitigate the urban heat island effect through material selection, incorporation of urban greening, blue infrastructure and use of wind to flush heat.

Internal and external comfort criteria


WALK CYCLE ENJOY

4. Mobility and Connectivity

Vision: An active place which prioritises active travel and low carbon transport.

- Prioritise pedestrian and cycle modes
- Encourage shared mobility journeys
- Promote low carbon transport solutions

Requirements	SCLP 2018	GCLP
Provision of safe, comfortable, inclusive and well-connected cycle infrastructure and pedestrian routes, to support 15-minute neighbourhoods.	TI/2	I/ST
Permeable development with ease of movement for all users and access to amenities including play.	HQ/1	I/ST
Minimise car access and minimise car parking within public realm and development.	TI/3, HQ/1	I/ST, I/EV
Demonstrate how sustainable travel and air quality improvement opportunities have been maximised through a Transport Assessment and Travel Plan.	TI/2, SC/12	I/ST
Facilitating direct and attractive connections to bus stops and cycleway.	TI/2	I/ST
Provide new and active forms of transport with mobility as a service, provision of rapid electrical charging points for e-bike, scooters and electric cars.	HQ/TI/2, SC/12	I/EV

The Mobility and Connectivity strategy for the Employment Zone and Local Centre will aim at prioritising people over cars.

This focuses on creating a compact, walkable 15-minute neighbourhood with good access to local amenities, and that deliver health and wellbeing benefits to the local community. The Local Centre will be designed to encourage ease of access to all destinations surrounding it via sustainable modes.

Reliance on the car will be reduced. The car parking strategy will acknowledge current demand and will provide for those who genuinely need it whilst providing the flexibility and mechanism to reduce or repurpose parking over time with behavioural changes and advances in technology.

Vehicle access will be limited by closing off Stirling Road from Station Road. Speed will be limited in at entry points for cyclists and pedestrians, including opportunities for stopping-up and carriageway narrowing where appropriate and sensible.

The 10 points of the Healthy Street Indicator will be implemented.

Home deliveries will be facilitated to discourage car borne trips to retail destinations, for instance through the provision of delivery lockers in the Local Centre.

Home working and study will be facilitated, to reduce peak hour travel. This includes the provision of fast broadband and designing new homes so that there are spaces which can be used for home working and study.

Bus use will be encouraged, creating an attractive, direct corridor from the proposed Local Centre to the Longstanton Guided Busway stop to maximise use of this service.

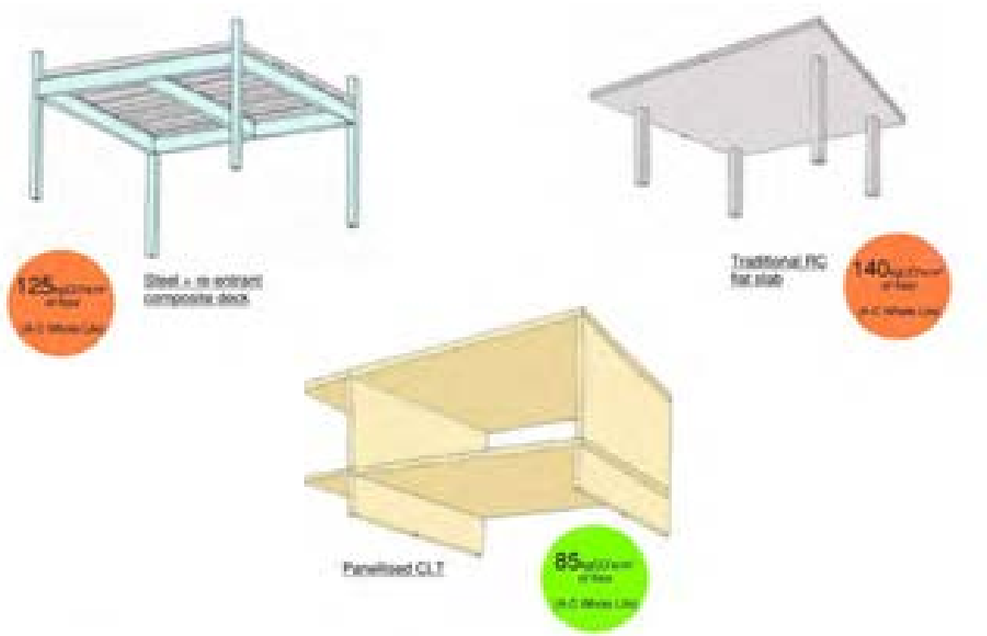
The electrification of transport will be supported by providing a network of high-speed charging points.

Excellent walking and cycling routes will be created as part of the green infrastructure network and interconnected with existing infrastructure. This will aim at providing ease of movement for all users and access to amenities.

Ambitious cycle parking targets are proposed and accessible cycle parking with battery charging will be provided to encourage cycling as a primary mode.

The use of mobility as a service and e-mobility services will be encouraged through embedded digital connectivity and supporting new technologies such as e-scooter for example.

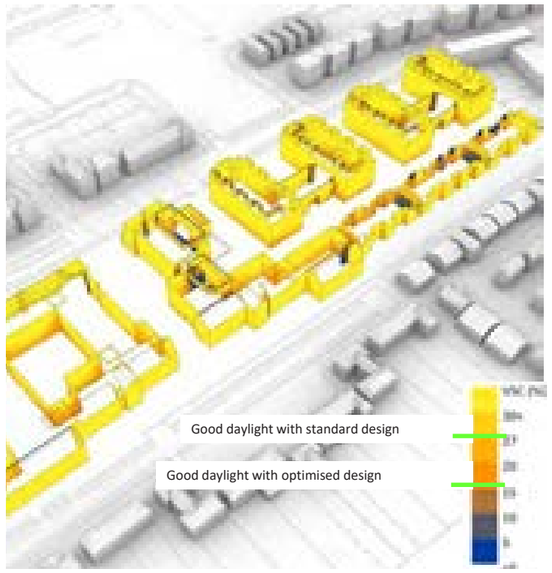
This strategic framework should be read in conjunction with the Transport Strategy for further details.

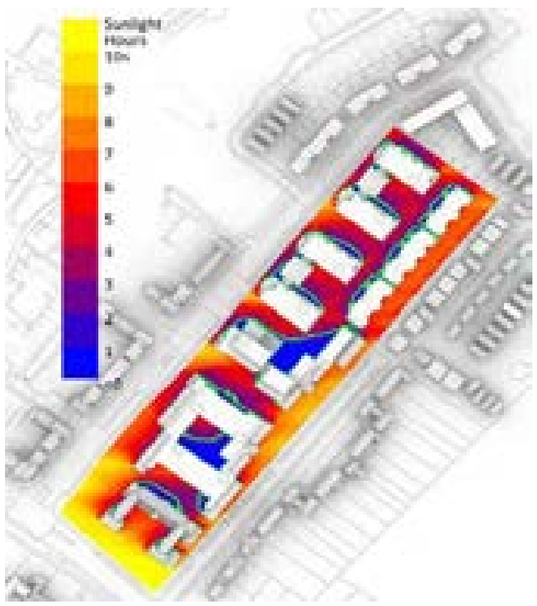


Embodied carbon of different building structure solutions

Timber construction (WWF headquarter office left, and light industrial building on the right)

Sustainable drainage source control measures





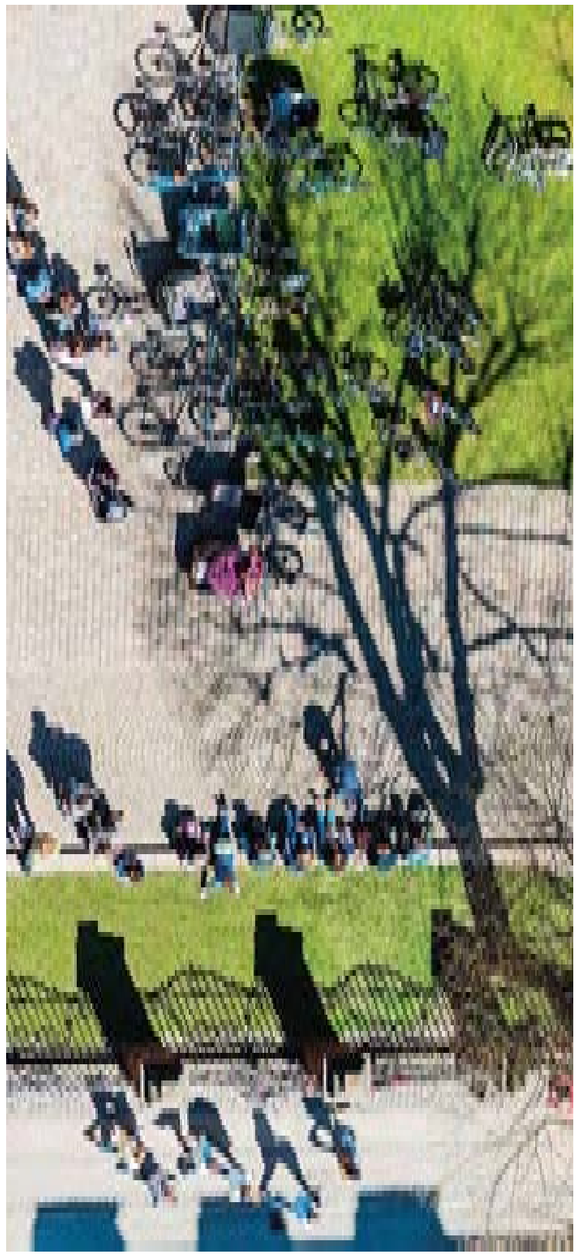
Design Guidance

Environment & Resilience

- All developments and proposals must adhere to Susdrain's SuDS principles in considering how water and run-off is addressed; must have an integrated approach to water management using SuDS to manage water at source and on the surface using features with multiple benefits, enhancing biodiversity and amenity;
- All developments and proposals must achieve at least 3 BREEAM Wat 01 credits related to water efficiency;
- All proposals must consider how to minimise potable water consumption, through rainwater harvesting, grey-water recycling, and the specification of low flow fixtures and fittings;
- Detailed landscape and planting designs should specify drought resistant planting, where appropriate, to reduce the need for irrigation;
- Detailed public realm designs should ensure that all pavements and hard surfaces are fully permeable with appropriate supporting vegetated sustainable drainage infrastructure;
- Sustainable drainage systems for surface water must be designed to deal with expected future weather events trends as a consequence of climate change appropriately, in line with the requirements of the National Planning Policy Framework (NPPF);
- Proposals must have adequate provision for foul drainage and must consider the most sustainable route for disposal of stormwater runoff, most of which to be taken to the attenuation ponds within the Water Parks;
- Landscaping proposals must form an integrated system of raingardens and bio-swales to control surface water runoff and enhance biodiversity;
- Surface water must be managed at source, in line with best practice CIRIA C752. This should be attained through green roofs, porous pavements, raingardens and swales integrated with the green infrastructure, but also in car parks and development plots;
- All developments should consider the incorporation of green roofs and/or green-walls designed to bring meaningful enhancements to biodiversity and minimising surface run-off;
- The long-term management plan of local infrastructure, including the blue and green infrastructures, must include the maintenance of the surface water drainage system;
- Landscaping proposals must include predominantly native species, or non-native with proven wildlife value, within the landscape proposals to provide local fauna with foraging resources;
- Public realm and landscaping proposals should maximise provision of green open space and infrastructure to address urban heat island effects through the incorporation of urban greening, blue infrastructure and use of wind to flush heat;
- Seasonal planting and green space should be designed to provide summer shading and prevent overheating, contributing to a comfortable external microclimate;
- Management plans for new green open spaces must prioritise sustainable alternatives to chemical pesticides, herbicides and fungicides;
- All proposals must conserve and enhance biodiversity integrated with green infrastructure provision achieving at least 10% Biodiversity Net Gain, aiming towards 20%, in line with aspirations of GCLP's emerging policies. Proposals should use the DEFRA Biodiversity Metric 3.0 to assess the biodiversity net gain achievable on site;
- All proposals for artificial lighting in the green open spaces should be kept to a minimum and must incorporate sensors to target an Upward Light Ratio (ULR) of 0;
- All proposals must comply with guidance note 08/18 'Bats and artificial lighting in the UK - Bats and the Built Environment;

Carbon & Resources

- All proposed developments must provide a whole life carbon assessment as part of any detailed major planning application and demonstrate a meaningful reduction in embodied carbon in key building elements working towards LETI and RIBA 2030 targets. The assessment will be undertaken in line with guidance provided by RICS: Whole life carbon assessment in the built environment (2017);
- All non-residential buildings must achieve BREEAM 'excellent' with at least 10% of the buildings regulated energy coming from on-site renewable sources;
- All building proposals must achieve 600-750kgCO2/m2 in while life embodied carbon, in line with the RIBA 2030 targets;
- Envelope efficiency measures of all developments must be adapted to each building type to achieve envelope performance of 15-20KWh/m2 for annual space heating demand and Energy Use Intensity requirements of no more than 55kWh/m2 for offices and community facilities, 110kWh/m2 for light industrial facilities, and 35kWh/m2 for residential buildings;
- The operational energy of all proposed developments must be met by on-site renewable energy sources;



- All development must provide on-site renewable energy sources integrated with smart technologies, such as roof mounted PV panels integrated with green roofs, as well as introducing PVs on the existing park and ride facilities and proposed car park
- Advanced renewable solutions must be considered such as solar tiles and photovoltaic cells embedded in the building fabric, smart management of electricity loads, advanced battery storage and integration with electric vehicles to reduce peak loads on the electricity grid;
- Developments must consider synergies between different building types and existing buildings or facilities in order to recover waste hear from specific buildings for domestic hot water or space heating use in other buildings, using an optimised ambient loop system;
- All proposals must ensure that potable water consumption is reduced by at least 55% from the BREEAM baseline through the specification of efficient water fittings, metering, leak detection and the use of smart rainwater harvesting technology for non-potable water supply to buildings;
- Proposals should consider the integration of smart water management and rainwater harvesting such as the Aqua Storm Control provided by Aqua-lity;
- Developments must embed circularity in the design from the outset to minimise waste at all stages of the building's life;
- All proposed developments must maximise the use of existing resources and materials, and minimise waste generated during demolition and construction processes through the implementation of the 'waste hierarchy' with 100% construction waste to be diverted from landfill, with a minimum 80% to be recycled;
- Materials must be sourced responsibly and in a manner that minimises environmental impact as evidence through third party certification and/or via producers that operate ISO14001 environmental management systems;
- The design of all developments must minimise the use of virgin materials and set an aspirational target for percentage of reused and recycled materials used on site. All developments should have a lean design and specification, informed by a whole life approach;
- All developments should prioritise lightweight construction and optimised foundation systems, and should promote timber construction and Design for Manufacture and Assembly with a preference for off-site and prefabricated components;
- The proposed material palette of all developments must be pared back, low waste and low maintenance, and avoid any unnecessary finishes. Enhanced fabric solutions must be reviewed against embodied carbon impacts;
- All proposed developments should follow the xxxxx Code of Practice to maximise the reuse of any excavated materials (included contaminated arisings) on and off-site;
- Specified timber products must target 100% use of responsibly sourced Forest Stewardship Council (FSC) or Programme for the Endorsement of Forestry (PEFC) certified timber products with full chain custody;
- Landscape and planting designs must prioritise species that minimise the need for pesticides and fertilisers;
- Landscape and planting designs must avoid the use of peat and promote composts to PAS 100 standards and which are compliant with the Compost Quality Protocol (CQP);
- All new developments, landscaping and public realm interventions must minimise the use of materials with high Global Warming Potential (GWP) - such as HFCs.
- All developments must provide sufficient internal and external space for storage and segregation of recyclable, compost-able materials and waste.

Health & Wellbeing

- All developments must follow the WELL Standards for biophilic designs to enhance health and wellbeing;
- Parametric 3D environmental modelling tools should be used to assess the environmental performance of the massing, orientation, façade treatments, shading strategy of proposed buildings;
- All developments must aim to provide excellent levels of thermal and visual comfort, as well as air quality and noise mitigation;
- Developments must be designed to pass the overheating criteria set out in CIBSE TM52 for non-residential buildings;
- All proposals must achieve 'low' to 'medium' levels of Spatial Daylight Autonomy, sunlight and views, in line with standards BS EN 17037.
- About 50% of courtyard spaces within perimeter blocks and 70% of open spaces proposed should achieve at least 2 hours of direct sunlight on 21st of March. Play spaces should receive at least 4 hours of direct sunlight on the same day;
- All development must avoid the creation of wind canyons or wind hotspots. At ground level in areas

WWF Headquarters

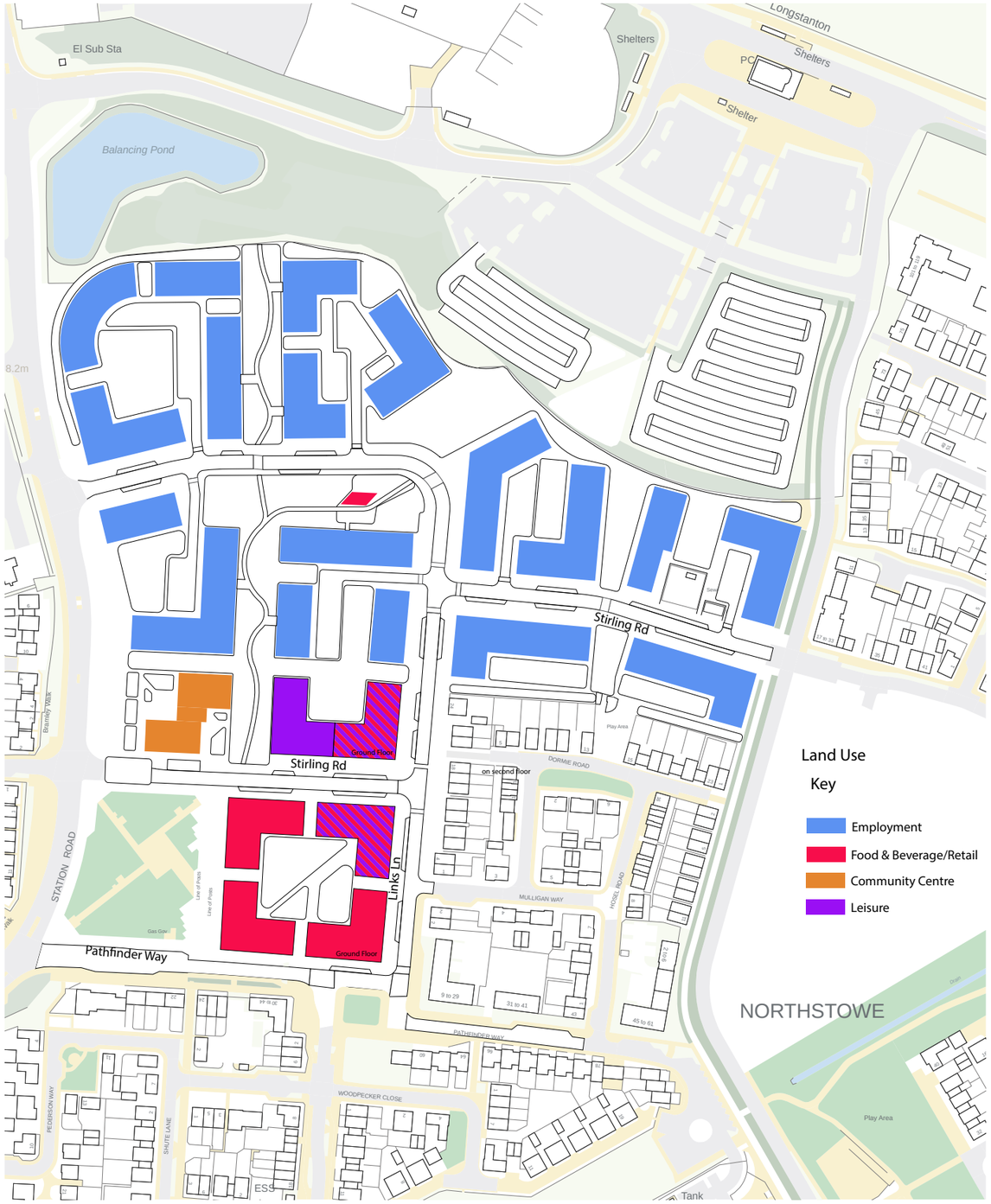
with frequent outdoor seating wind speeds should not exceed 2.5m/s. In areas with occasional sitting wind speed should not exceed 4m/s;

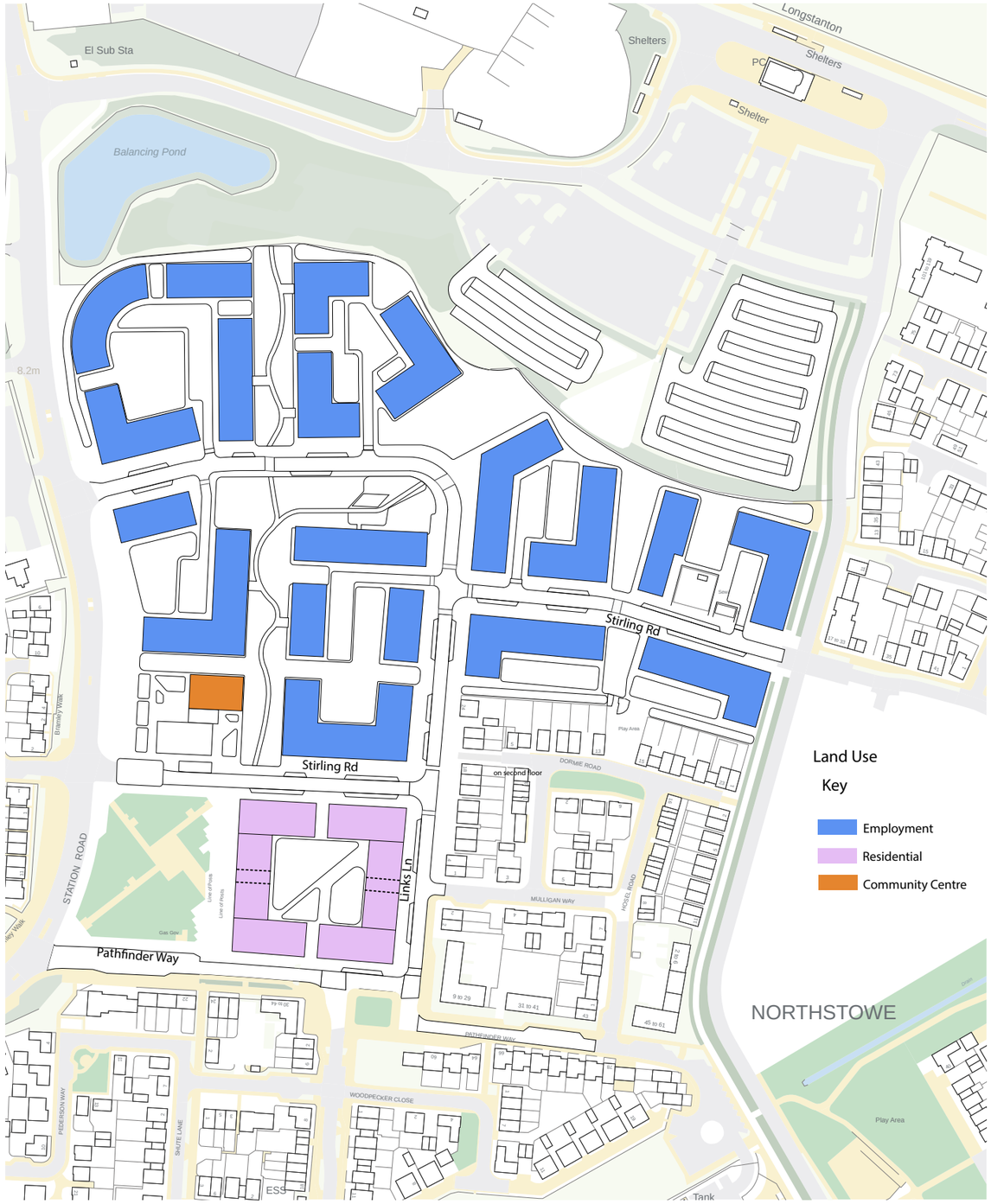
Transport & Mobility

- All developments must accommodate sustainable travel modes prioritising pedestrian and cycling links and should consider innovative approaches to car parking;
- All proposed developments must demonstrate the maximisation of sustainable travel and air quality opportunities through a Transport Assessment and a Travel Plan;
- Car access and car parking provision should acknowledge current demand but must be minimised within the public realm and throughout the development;
- Car parking must provide future flexibility through mechanisms to reduce or repurpose parking areas over time in response to behavioural changes and advances in technology;
- All developments should contribute to the provision of safe, comfortable, inclusive and well-connected cycle infrastructure and pedestrian routes, to support 15-minute neighbourhoods;
- Access to Sterling Road from Station Road should be closed to limit vehicle access and to provide a safer pedestrian and cycling environment to the north of The Green;
- All developments must implement the 10 points of the Healthy Street Indicator;
- Public realm design must facilitate home deliveries in order to discourage car trips to retail destinations, for instance through the provision of delivery lockers in the Local Centre;
- All new developments must contribute and support the creation of an attractive, direct link from the proposed Local Centre to the Longstanton Guided Busway to maximise use of this service and encourage bus use;
- New and active forms of transport must be provided with mobility as service, provision of rapid electrical charging points for e-bikes, scooters and electric cars;
- The Local Centre must be designed to be highly accessible and encourage ease of access to the wider area via sustainable travel modes;
- Use of mobility as service and e-mobility services must be encouraged through embedded digital connectivity and supporting new technologies such as a e-scooters;

Landuse Distribution Diagrams

what scale?





Design Code 2014 (p.135)

The Employment Zone of approximately 5ha is intended to become a positive and attractive northern commercial gateway to the future town.

The proposed mix of Employment comprises:

- B1 (office), B2 General Industrial: 3.28ha;
- B8 Storage and distribution: 0.36ha;
- Household Waste and Recycling centre: 1.25ha;

B1 employment must be located next to the southern residential edge (parcels 3 & 4).

Any B2 ad B8 uses should be located next to the Household Waste Recycling Centre.

A landscape buffer should be provided for trees on the frontages of B2 and B8 uses.

The Local Centre sits within Identity Area 'Mixed-use centre', with those buildings that face directly onto the Green also sitting within Identity Area 'T1 Spine (formal)'.

The land identified for the Local Centre is 1.2ha.

The local centre comprises:

- Ground floor retail of up to 1500sqm (net) and should be visible from the B1050;
- In addition, there is potential for further 450sqm commercial retail/leisure/food&drink/community/health and other appropriate uses;
- Suitable car parking for retail commercial. Additional on-street parking to be provided around the square;
- A potential informal MUGA (although one has now been provided in Pioneer Park).

5.6. Uses & Amenity

Within the immediate catchment of the site there is a small range of existing amenity. This includes existing prior provision within Longstanton, as well as within the early delivery of some critical social infrastructure within both Phase 1 and Phase 2 of Northstowe. Overall across Northstowe there will be two Local Centres and one Town Centre.

The LCEZ site itself is envisioned to be the first local provision of amenity in Northstowe, which will be complemented by further provision as part of subsequent masterplan phases.

Current residents of Phase 1 Northstowe have access to the Pathfinder C of E Primary School which also includes a community hall, the completed education campus located north of the future Northstowe Town Centre, and the small local centre in Longstanton. Requirements for any other amenities that are still outstanding within Northstowe are generally met by the Cambridge City Centre provision.

Vision

The LCEZ site is envisioned to become a positive and attractive northern commercial gateway to the future town, and a new Local Centre that complements the amenity provision across Northstowe, that concentrates and supports complementary activities and is accessible to a catchment area of approximately 600m.

Office, commercial or light industrial uses are prioritised around the Longstanton Park & Ride, establishing a central business district that supports sustainable urbanism through the principles of transit-oriented development. This Employment Zone will also have a food and beverage pavilion strategically located on the link between the Longstanton Park & Ride and the Local Centre through the Linear Green Park.

Further retail, food and beverage uses are prioritised around the Green open space to support the creation of a new Local Centre. The prioritisation of leisure uses around the Green open space promotes the creation of appropriate clusters of amenity.

A Community Centre is also being provided, as required by S106 agreements.

Design Code 2014

The LCEZ Masterplan proposal generally follows the use distribution guidance of the Design Code approved in 2014, with the exception of the mixed use building on Parcel 6 which introduces a residential element on the higher floors of the development.

The location of a Household Waste Recycling Centre on site is still being debated. Different options have been developed, with and without the Recycling Centre (the area originally designated for a Recycling Centre has been converted to Employment use, and incorporated into the Employment Zone in this option).

Design Guidance

- All retail and leisure uses must be located in the parcels around the green, with the exception of the food and beverage pavilion at the top of the Linear Green Park;
- To allow synergies between uses, Stirling Rd must prioritise pedestrians and follow the Community Street typology guidance outlined in section xxxx
- Residential provision should be included above retail uses in the Central Block to support the Local Centre;
- Active frontages are desirable along all publicly accessible streets and public realm spaces. An active frontage use ranges from retail and food and beverage uses, through office/workspace activities with clear windows offering views into workspaces, to quieter streets/spaces where main entry doors to workspace courtyard areas or community areas and other uses may be the busiest activities.
- No residential uses are permitted at the ground floor levels;
- Active frontages must be provided around the Green open space and the Community Street (Stirling St) at the Local Centre, as well as along the Linear Green Park in the Employment area;
- The Community Centre must be provided adjacent to the Green open space, and include recreational space and active frontages;
- Provision should be made for land to store 5th generation district heating backup storage units;

Employment Zone

Land use	**sqm (GEA)**
Office or light industrial	53,859

Local Centre

Land use	**sqm (GEA)**
Community Centre	1,760
Retail	4,984
Office	3,154
Residential	14,783
TOTAL	**76,940**

Local Centre & Employment Zone Catchment

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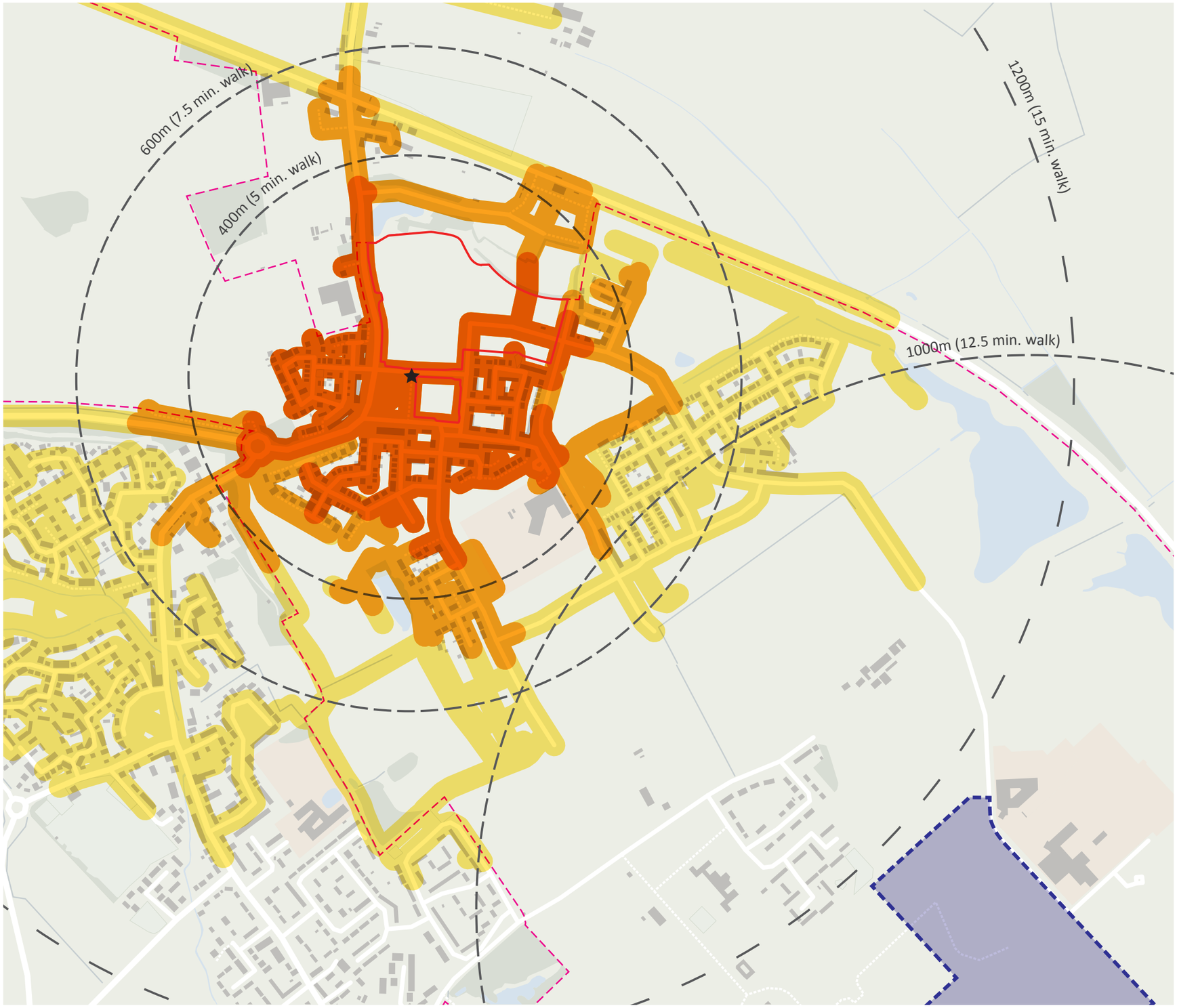


Key:-

- Site Boundary
- Northstowe Boundary
- Proposed Town Centre
- 400m (5 min. walk) Service Area
- 600m (7.5 min. walk) Service Area
- 1200m (15 min. walk) Service Area
- Start Point (measurement)

N

0 200m 500m

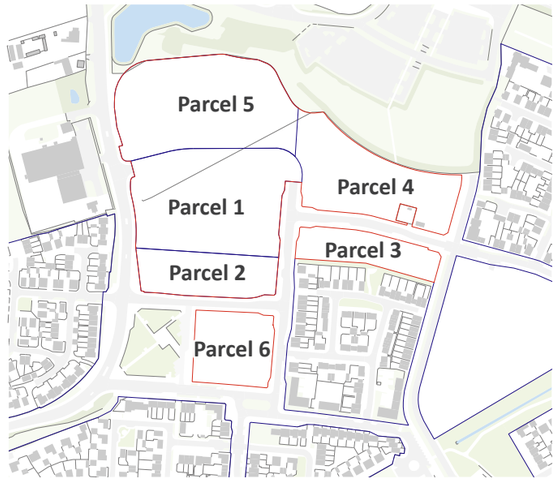
Design Code 2017 p.135 Identity Areas

N

Design Code 2014 on Identity Areas (p.135)

The Local Centre sits within Identity Area ‘Mixed-use centre’, with those buildings that face directly onto the Green also sitting within Identity Area ‘T1 Spine (formal)’.

T1 Spine (formal) marker building, landmark building, Building group / composition to be designed as unified whole, Internal vista along Station Rd



Parcel Subdivision - NTS

5.7. Character Areas

The LCEZ Northstowe comprises two main, distinct character areas that are defined in the 2014 Design Code as "Identity Areas", and which are preserved by this masterplan as follows:

- Employment Zone - comprises Parcels 1, 3, 4 and 5
- Mixed-use Local Centre - comprises Parcels 2 and 6

The character of the Local Centre is determined in large part by the existing Green that has been already built.

The character areas proposed seek to build on some aspects of the existing area, while acknowledging the opportunities that strategic redevelopment brings, to create new environmental relationships within and between substantially redeveloped areas.

boundaries between these character areas are especially blurred in the public realm, and the two are knit together by the cohesive character of the Linear Green Park that runs north-south to connect the two Character Areas

The creation of distinct character areas within the LCEZ area helps to structure the masterplan and define the interconnection between different parts

View to the north across the Green

Community Street entry viewed from the east

Design Code 2014 on Mixed use Centre (p.174)

The opportunity for a landmark feature, such as a clock tower associated with the community building should be considered, up to 25m high.

A high level of building enclosure should be achieved around the public space.

Civic buildings (such as the community building) must be distinctive buildings of architectural merit. The potential to increase scale and massing should be considered through interesting roof profiles or similar feature elements.

Design Code 2014 on T1 Spine (formal) (p.136-138)

Building group around the Green to be designed as unified whole;

Marker / landmark buildings terminate vista along approach to space, such as the internal vista along Station Rd;

High level of enclosure around public squares and the approaches to them;

Consistent building rhythm on streets approaching Local Centre;

Buildings close to the local centre should be built with higher ground floor to ceiling heights to provide flexibility of change of use;

Mixed-use Local Centre Character Area

The Mixed-use Local Centre area is defined by the already provided Green open space, and will form an important local activity centre to the north of Northstowe with a cluster of amenities that include a Community Centre, retail, leisure, commercial and residential uses.

The design of the Community Centre and its associated recreational space is informed by the S106 requirements agreed in 2014 for community facilities as part of the granted Phase 1 Outline Planning Consent.

Built Form

- Building heights at the Local Centre should be variable, and respond to location, context and use;
- The Community Centre building should be 1-2 storeys in height, the taller element to provide sufficient height for a hall;
- The Central Block building, located to the east of the Green open space on Parcel 6, should be a perimeter block with gaps on the northern and southern sides to allow north-south circulation but also increase sunlight and daylight access into the courtyard. These gaps should be about 10m wide;
- The height of the buildings comprising the Central Block should be variable. The building facing the Green should be 4 storeys generally and 5 storeys at the corners. The building facing residential should be 3 storeys generally and 4 storeys at the corners;
- The Central Block upper floors should be set back from the building line for private terraces on outer elevations;
- The Central Block should provide roof terraces for residents on the roof of the top floors between the taller corners;
- In light of the predominant 3 storey height across the LCEZ, the Central Block building should have a 'shoulder datum' at 3 storeys on both eastern and western sides;
- The design of Community Centre cycle storage and bin storage must be integrated with the Community Centre building;

Movement & Access

- The Local Centre must be a pedestrian priority area, with main vehicular access routes along its sides on Station Rd, Pathfinder Way and Links Lane;
- The pedestrian movement network must be designed to connect the Green open space directly to the Park and Ride through the Linear Green Park;
- Internal courtyards must provide ongoing routes for pedestrians and cyclists and not form dead-ends;
- To facilitate access to the Local Centre from Mulligan Way and viceversa, the block to the east of the Green must have two single or double openings strategically located for access from the Green into the block's courtyard, as well as from the courtyard towards the residential parcels to the east;
- The main entrance of the Community Centre must face the Linear Green Park, while the gated entry for children and scouts must be located on the Green side;
- The Community Centre vehicular requirements should follow the Local Plan policy and reflect a reasonable expected requirement, acknowledging the need to promote active travel;
- The location of Community Centre parking should consider the need for people to unload effectively, especially groups who set up or run events in the Local Centre;
- The Community Centre must be provided with 10 parking spaces, in line with the S106 agreement;
- The Community Centre must also provide 5 disabled parking spaces, as required by the S106 requirement. These must be provided on the Community Street;
- The Community Centre must provide cycle storage as as per Local Plan, including for non-standard bicycles. This should be located along Community Street where possible;

T1 Spine (formal) design guidance

View of the Linear Green Park

View from the entrance of the Linear Green Park from the north

Design Code 2014 on Employment Zone

- The Employment Zone sits within Identity Area 'Employment', with the eastern edges of parcels 4 and 3 also forming part of Identity Area 'T1 Spine (formal);

- Access to the residential units on the upper floors of the block on Parcel 6/Central Block must be provided from cores within the courtyard, rather than from the outer facades of the block;
- The business courtyard inside the Central Block should accommodate bike storage;
- Central Block service access from the courtyard?

Public Realm & Landscape

- Robust green framework
- Business courtyard within the Central block to the east of the Green - mixed with residents?
- Provide connected public realm - business courtyard connected to Green open space, connected to Community Street, connected to the Linear Green Park

Sustainability

- The Community Centre building must accommodate green roofs, as well as Photovoltaic panels on the roof of the higher section;
- The Central Block roof must be green and have PVs, as well as accommodate plant;

Uses & Amenities

- Activity fronts on The Green and The Community Street
- Only one courtyard "business courtyard", in the Local Centre block, with generous two storey? openings for pedestrian and cycle access
- Community Centre active frontage - Community Lounge/Cafe with spillout on the green area that blends into the Linear Green Park
- Central Block retail, food and beverage uses at ground floor
- Central Block mix of units between one, two and three bedroom flats
- Central Block residential provision to be about 118 units
- Flexible ground floor spaces with active frontages that face directly onto the Green open space or the Community Street

Employment Zone Character Area

Definition:
- Northern commercial gateway to Northstowe, flexible building uses within robust public green framework

- To provide access to lake and greenery to north

- This area is defined by the diagonal vista of trees preserved which also frames access to the F&B at the top of the Linear Green Park

- This area is designed with most flexibility

- Access to office/ employment buildings to be provided /linked to the Linear Green Park pathway - active frontages

Public Realm & Landscape

- Robust green framework
- A key new green route between the Park and Ride and the existing Green open space, including the Linear Green Park and pocket green spaces along the way, must be provided using inclusive access arrangement and comfortable pedestrian and cycling access

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