6. Nature

6.1. Nature Strategy

'Connecting to Nature' means taking a landscape led approach to masterplanning and built development, identifying the key Green Infrastructure assets on a site and establishing the correct balance between open space and built form. Landscape, ecology and heritage are intrinsically linked to one another and should be celebrated within development proposals in order to provide engaging, sustainable places to live.

Development should enhance the natural as well as the built environment. Nature is essential for health and well-being, for biodiversity, shading and cooling, noise mitigation, air quality and mitigating flood risk as well as contributing to tackling the climate emergency. Nature is also central to the creation of beautiful places.' NMDC

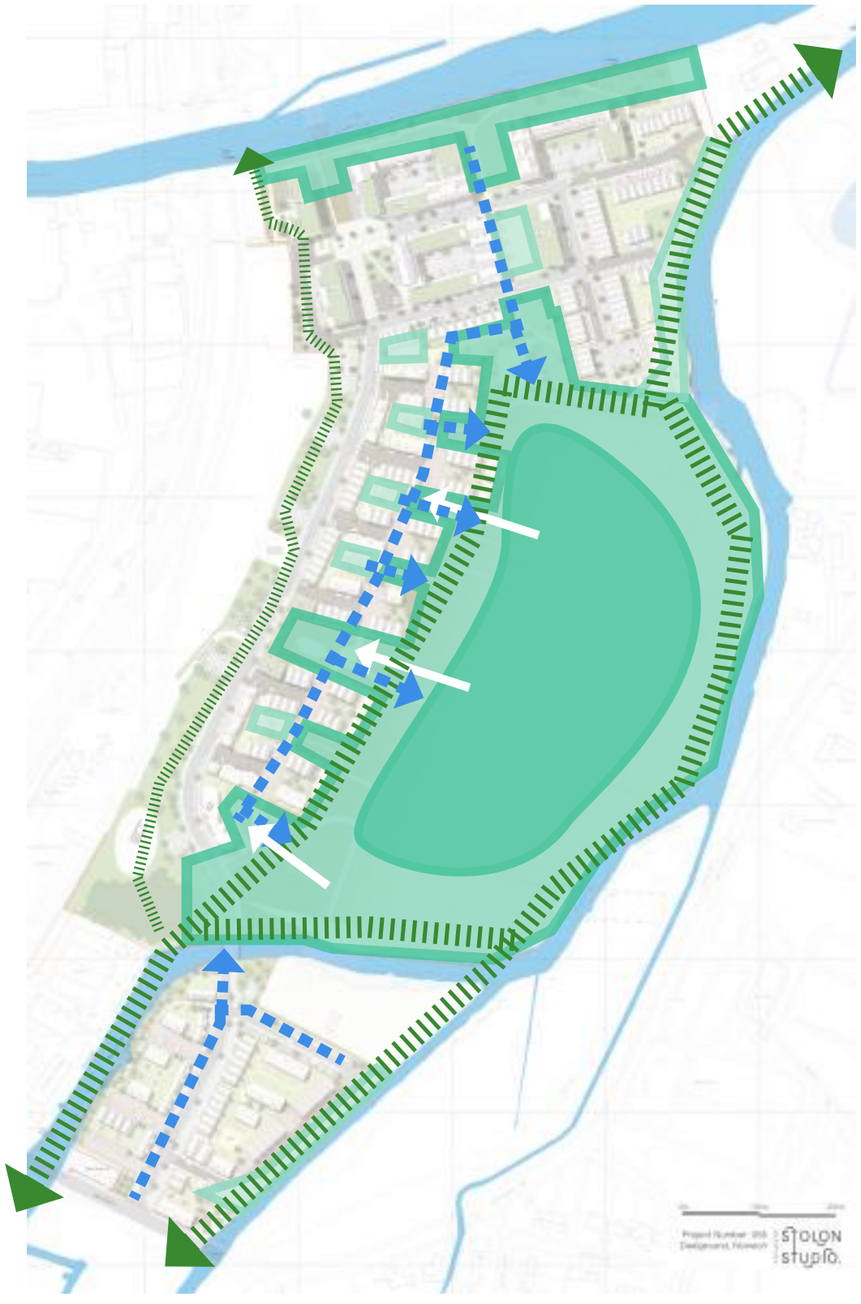
Nature is an important feature of the site. The extant consent for the site established a landscape led solution which embraces nature. This is to be realised through the character areas as indicated opposite. The strategy should seek to incorporate existing landscape features and enhance, where possible, with new features, incorporating:

- Ecological corridors through the development
- Blue/green corridors
- Diverse planting
- Tolerance to climate change
- Areas with public access
- Areas without public access

WENSUM EDGE
Nature is introduced through parks, pond areas, private and shared gardens, roadside swales, riparian habitat, Local Areas of Play and integrated SuDS.

THE VIEWS
Nature is introduced through an extension to the marsh habitat between development; through private and shared gardens, wetland basins, Local Areas of Play.

YARE EDGE
Nature is introduced through a network of green infrastructure, incorporating private and shared gardens, pocket parks, Local Areas of Play and integrated SuDS.



Indicative Landscape / Nature Strategy Plan

6.2. Green Infrastructure

Landscape Strategy

For the Wensum Edge the strategy is to enhance the landscape character of the river, and to weave areas of planting between and around the development. This will involve removing plants that have self-seeded on the old spoil site and replacing them with predominantly native species throughout the area.

Ensuring that existing green infrastructure is retained and enhanced for biodiversity and amenity is an important part of the landscape strategy on this site. The following landscape elements are prioritised for retention, protection and enhancement, where appropriate:

- Preserve riverside habitat on the Wensum and Yare
- Protect trees in good condition along river edges
- Protect marsh habitat

Similarly, the creation of new habitat areas on the site will play a vital role in the future success and sustainability of the development. The creation of the following range of habitats should be prioritised in order to create a distinctive and local sense of place, whilst enhancing biodiversity:

- Varied and dynamic mosaic of wetland habitats
- Swathes of species-rich grassland and wetland meadow
- Amenity grassland
- Seasonal wetlands, swales and channels forming part of the Sustainable Drainage System
- Permanent water bodies in safe locations
- Grass verges incorporating pollinator friendly species

Within built-up areas a large part of the land is private gardens that will also contribute significantly to biodiversity with native grasses, herbaceous planting, shrubs and trees.

Informal Park Areas

Riverside Habitat

Street Planting

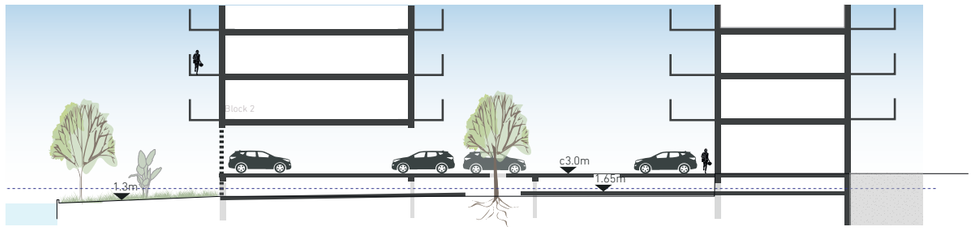
Marsh Habitat

Blue/ Green Corridors

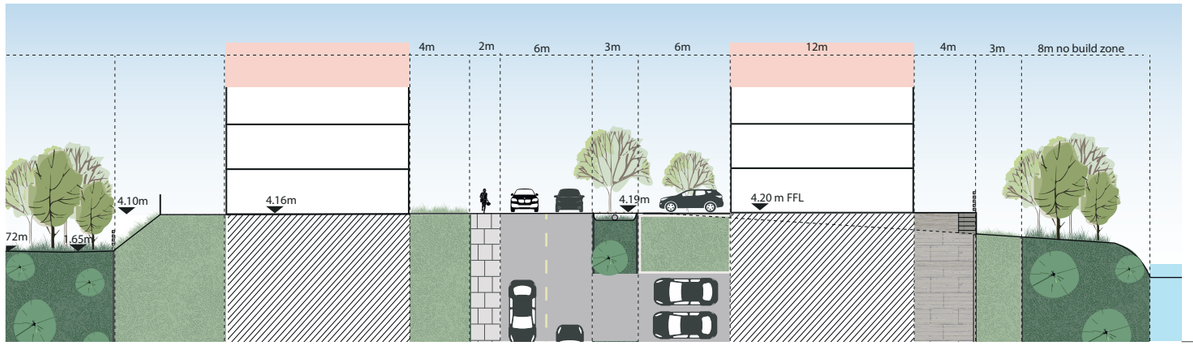
Private / Public Gardens

Indicative green Infrastructure Plan

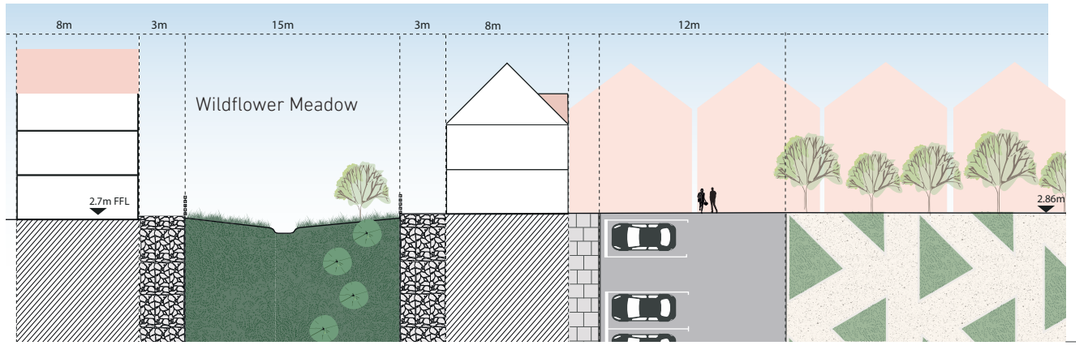
6.3. Nature Sections



Section 1



Section 2

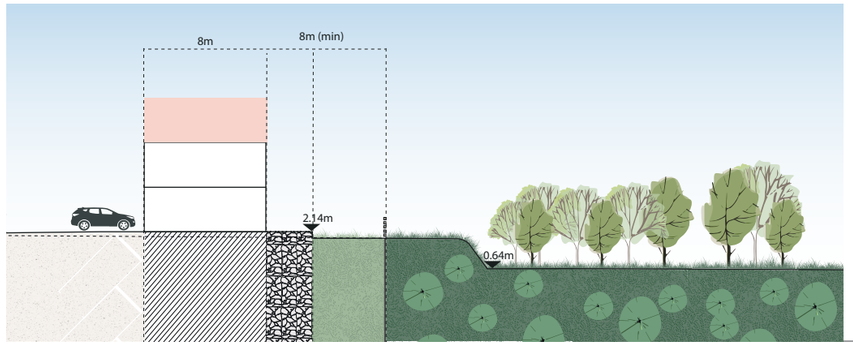


Section 3

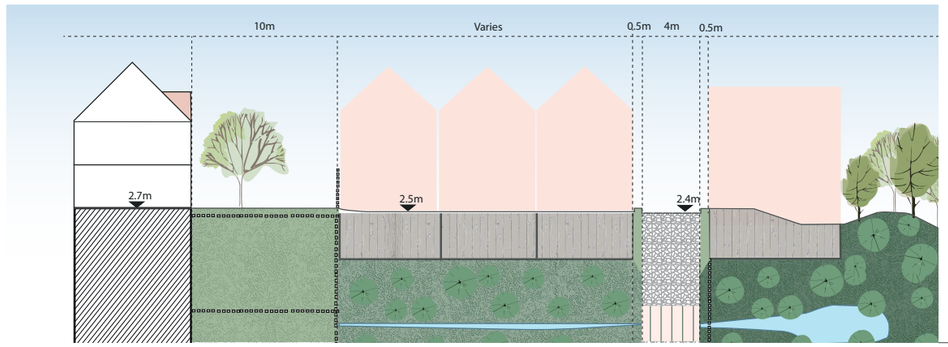
Indicative section/plans

Nature section locations

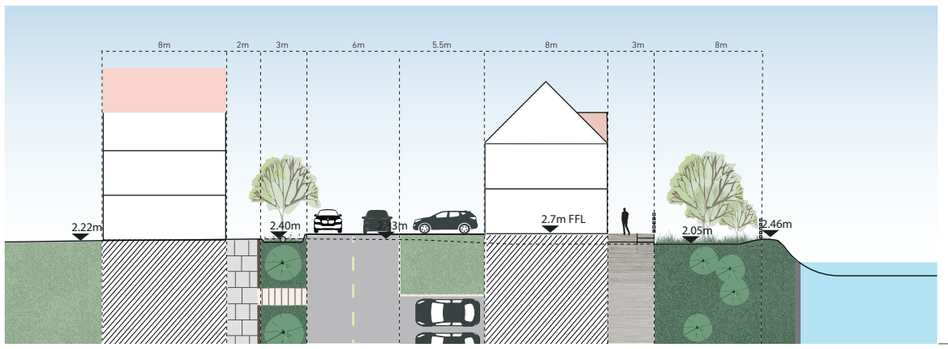
Nature Sections



Section 4



Section 5



Section 6

Indicative section/plans

Nature section locations

6.4. Open Space Strategy

Open space provision

The provision of open space and recreation must be in accordance with Norwich City Council and South Norfolk Council Local Plan. The 'Joint Core Strategy' (JCS) for these authorities, adopted in 2011, states the following with regard to Green Infrastructure and Open Space:

'The environmental assets of the area will be protected, maintained, restored and enhanced and the benefits for residents and visitors improved. Development and investment will seek to expand and link valuable open space and areas of biodiversity importance to create green networks. Where there is no conflict with biodiversity objectives, the quiet enjoyment and use of the natural environment will be encouraged and all proposals should seek to increase public access to the countryside.'

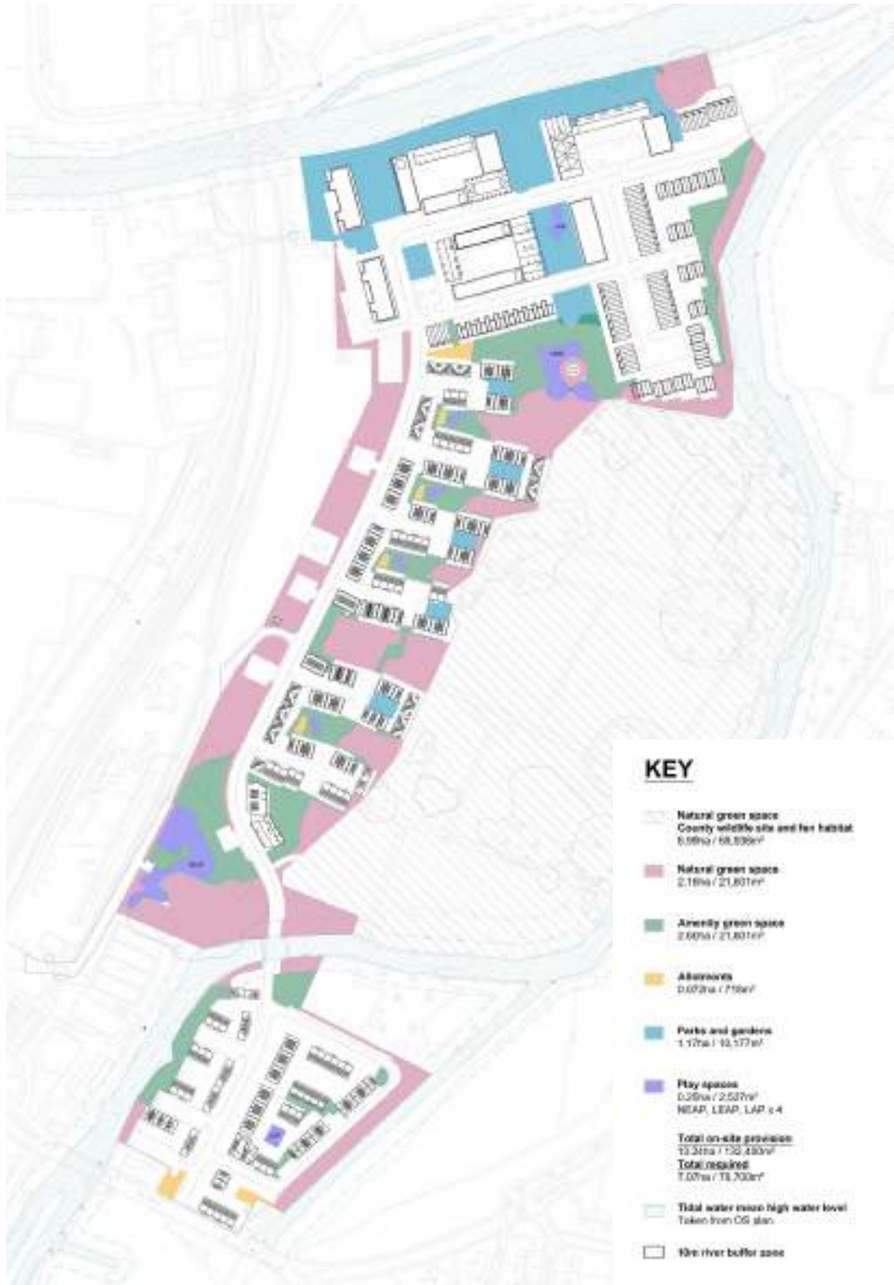
Further to the JCS, the Norwich City Local Plan 2014, and 'Open Space Needs Assessment 2007' set out more detailed guidance on the required provision of open space, play and recreation for new developments to achieve.

With regards to Green Space, the assessment clearly explains that contributions will be required in a number of forms, and specifically sets out how the provision of each form is calculated and should be achieved. There is, however an understanding that not all developments can achieve all forms of required open space within their red line boundary (for example, sports pitches), therefore the exact provision and type of open space to be provided at the May Gurney and Deal Ground site will need to be agreed with the relevant local authorities during the Reserved Matters stage.

The baseline open space typologies minimum provision requirements per 1000 residents, as set out under Norwich City Council Local Plan Policy are as follows:

- 0.62ha of Parks and Gardens
- 2.46ha of Natural and Semi-natural Green Space
- 1.0ha Informal / Amenity Space
- 0.16ha Provision for Children and Young People
- 1.01ha Outdoor Sport
- 0.44ha Allotment and Community Gardens

The diagram opposite illustrates how open space is allocated..



Open space principles

The design of the public open spaces should reflect their character, function and location. They must be durable, safe and accessible and capable of long-term sustainable management without undue cost to the community. Open spaces should link coherently into existing tree groups, retained hedgerows and other green infrastructure and should promote legibility. The spaces should respond to their riverside context, reflecting the transition from 'urban to country' by being more formal in character in the city facing Wensum Edge, and more relaxed and informal in the Yare Edge and The Views where the site becomes more rural.

10 Key Design Principles:

1. Boundary: Consideration needs to be given to whether the space is fenced and gated without interrupting wildlife networks.

2. Entrances and Spaces: Access points and paths should be conveniently located on desire lines for walking and cycling with key focal points of interest for community recreational activities and meeting points as part of a legible and walkable neighbourhood.

3. Surveillance: Open spaces should be overseen from surrounding buildings, streets and public spaces.

4. Activity: Sufficient space, including minimum buffer zones, should be provided for sports pitches and play areas to avoid conflict with other uses and residential frontages.

5. Recreation: Green Infrastructure and green road corridors should include recreational opportunities such as 'play on the way' and sustainable drainage benefit planted swales and rain gardens to provide an attractive streetscene.

6. Maintenance: The design of the space should take account of maintenance and adoption requirements.

7. Ecology: A multi-functional network of green spaces should wrap and permeate the development with biodiversity enhancements and sustainable drainage as the principal drivers for design.

8. Access: Public open space should be accessible and welcoming to everyone and contribute to the character of the street scene.

9. Lighting: Should be considered for well-used footpaths and games areas but should avoid light spillage that causes nuisance and harms wildlife.

10. Productive Landscape: Should consider small-scale community orchards, growing gardens, kitchen gardens and foraging trails as well as formal allotment provision.

Biodiversity focused open space


Leisure links


Sustainable drainage streetscene


'Play on the way'

6.5. Play Strategy

Play and Recreation

Play is hugely important in the physical, emotional and social development of children and young people. It is widely recognised that the natural environment is a key source for sensory stimulation. The play areas within the May Gurney and Deal Ground development have the opportunity to embrace and integrate a unique environmental context, providing site specific experience and enjoyment.

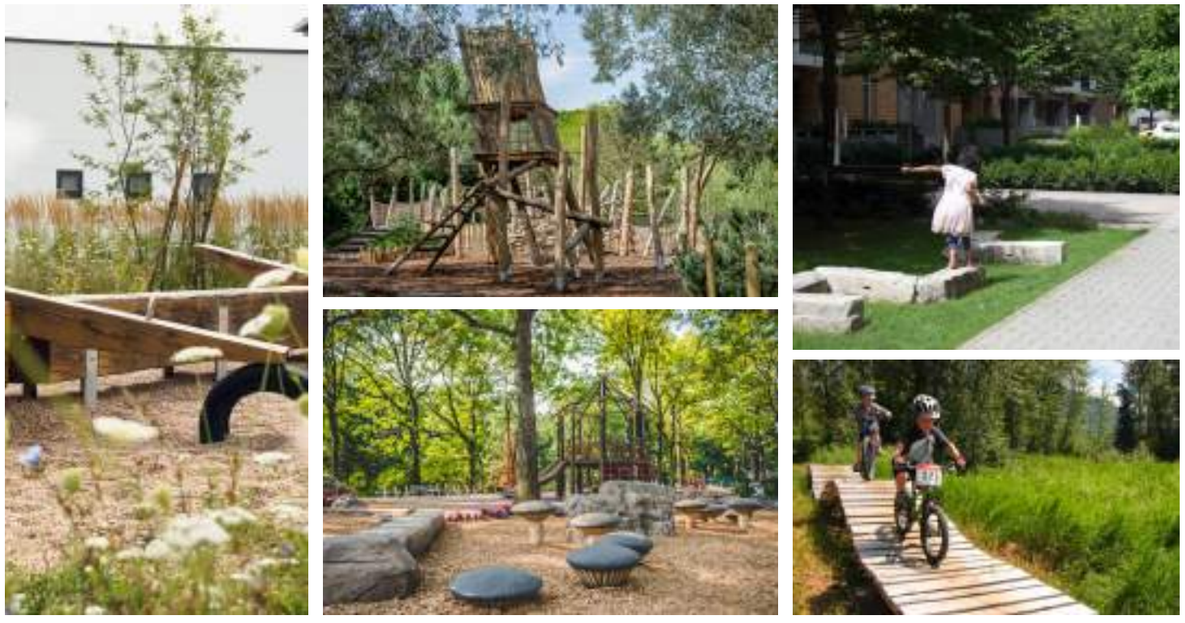
Norwich City Council Local Plan stipulates that a distance of 240 metres (straight line), or about 5 minutes (often accompanied) walking time is felt to be appropriate for provision aimed at the pre teen age group. A straight line distance of 720 metres (about 12 minutes walking time) should be largely acceptable for older children and their parents.

Designated and informal play spaces must be created in accordance with the Norwich City Council 'Open space needs assessment' 2007, the South Norfolk Council 'Guidelines for recreation provision in new residential developments' 2018 and other local authority standards. These must be integrated into the design of the open spaces, within a safe walking distance of all homes and must include NEAPs, LEAPs and LAPs. Current 'Play England' standards should be adhered to in the design of these designated play spaces.

	Local Area for Play (LAP)	Local Equipped Area for Play (LEAP)	Neighbourhood Equipped Area for Play (NEAP)
Minimum activity zone	100m²	400m²	1000m²
Minimum buffer zone	5m	20m	30m
Actual walking distance	100m	400m	1000m
Straight line distance	60m	240m	600m

Local Policy and Play England guidance for designated play provision

Precedent Images: Integrated play with landscape and open space provision



Precedent Images: Play materials and sense of place

Play Strategy

Play and Recreation Provision

YARE EDGE

A central LAP is provided within the heart of the residential parcel, with appropriate buffer distances to frontages, but with good surveillance from these residences. This location is within the 100m radius for all dwellings. A NEAP is proposed on the north side of the River Yare that will provide for older children.

THE VIEWS

LAPs are located within the residential parcels, with appropriate buffer distances to frontages, and maintaining good surveillance from these residences. The central pedestrian spine interacts with these areas as well as providing play trail or 'play on the way' opportunities.

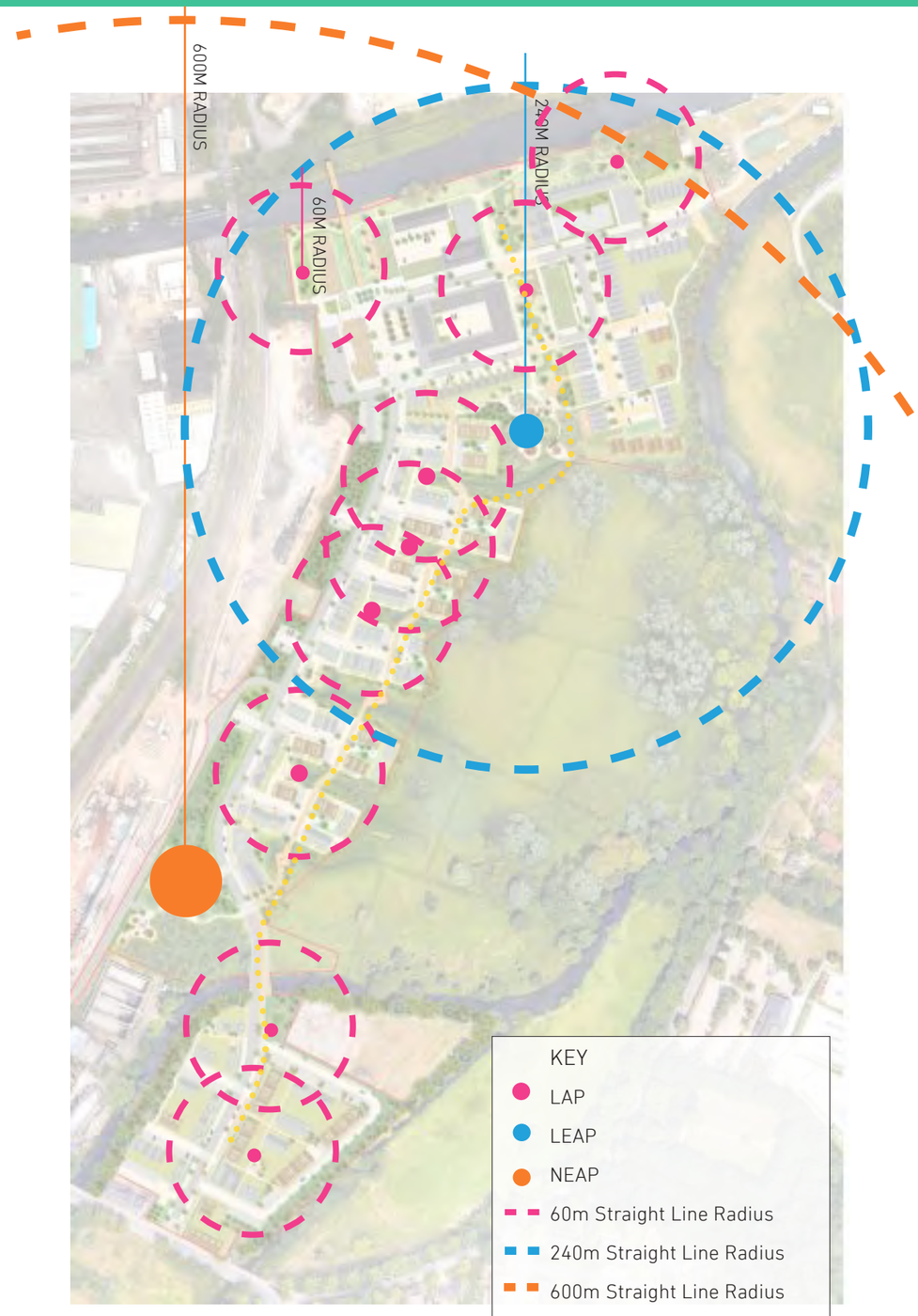
One NEAP is required for the development. This has a buffer of 30m between the activity zone and habitable rooms. The equipment provides a multitude of play opportunities irrespective of ability. Buffer planting around the park allow the children to experience scent, colour and texture.

WENSUM EDGE

One LEAP is required in The Wensum Edge, this is centrally located for accessibility and to provide a local focal point.

Within the Wensum Edge 3 LAPs are required. These are located in communal gardens, parks and green streets.

Precedent Images: Play materials and sense of place



Play Strategy

Play and Recreation Principles

10 Key Design Principles:

1. Play spaces should adhere to best practice guidance provided by RoSPA, Fields in Trust and Play England.

2. Play areas should deliver a range of experiences that suit all ages and abilities for cross generational appeal. Areas should - where the setting and use is appropriate - ensure the inclusion of play experiences for toddlers.

3. All play spaces should be accessible via multi-user routes. Active and safe journeys from home to play space should form part of the overall play strategy.

4. Informal play opportunities should be integrated into multi-user routes and include 'Play on the Way' opportunities along key pedestrian routes.

5. Play spaces should provide adequate seating, be well surveilled and should be enclosed by landscape features where possible (rather than fencing) that are sensitively integrated into areas of open space.

6. Where appropriate, play spaces should also include SuDS features, hedgerows and tree planting to complement adjacent land uses and tie into the wider Green Infrastructure strategy.

7. Formal play provision should be supplemented by opportunities for self-led wilderness play such as den building and also informal 'doorstep' play opportunities close to dwellings.

8. Play spaces should respond to the individual character of their setting - including heritage assets - offering unique play experiences and stimulating spaces to promote imaginative play.

9. Play spaces should typically have a natural theme using robust, timber-based equipment and landscape features and should not be low-cost 'off the shelf' equipment.

10. To aid wayfinding, play spaces should have features that children can easily relate to, making them recognisable and easily identifiable. Wayfinding features could include distinctive colours, landmark play pieces, unique materials, public art or clearly articulated themes.

The proposed play areas are described in the following pages.

6.6. Play Areas, Yare Edge and The Views

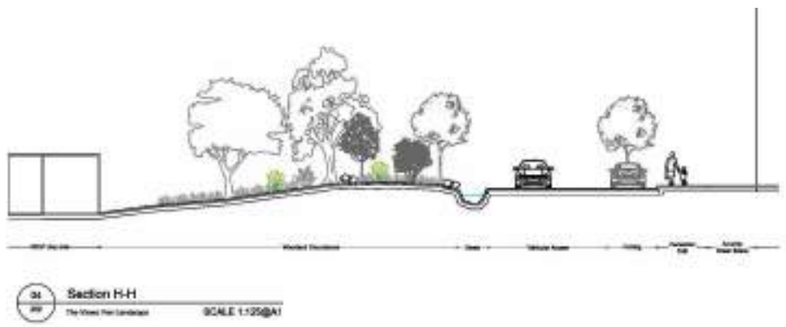
1. A LAP is provided within the Yare Edge as indicated opposite. The area is larger than the minimum 100 sqm required and includes some play equipment and planting. It also provides space for SuDS in extreme events.

2. A NEAP is provided within the Views. This is the least sensitive part of the site for nature and the most affected by noise. Therefore, it is ideal for lively children. The NEAP is shaped around existing trees, drainage ditch (not pictured) and road. The land level is lowered to provide compensation for flooding in extreme events. The means that the play areas including the MUGA are retained by sloped banks. This should create a playful characteristic, and may help to reduce some of the noise transmission and - see plan and section. The other play areas weave around the areas of existing trees benefiting from the shade they provide and relation to nature.

3. A series of play spaces are provided throughout the Views. These are in each shared garden. These are very multi-functional providing a place for play, socialising, visual amenity, planting and food growing and an area of rain garden for SuDS.

1. Plan of LAP in Yare Edge

2. Plan of NEAP and MUGA



Section through MUGA

3, Plan of shared gardens

6.7. Play Areas, Wesnum Edge

Wensum Edge provides a unique opportunity for city living with nature on the doorstep. The location and industrial heritage combined with existing landscape features coalesce into a public open space that is vibrant, diverse and full of character.

1 & 2. The river front and the blue/green channel create opportunities for play on the way, as well as convenience of local residents.

3. A LEAP is to be created at the centre, set within amenity landscaping and wrapping around one side of the listed Bottle Kiln. This in turn is separated from the play area on a raised (existing) earth mound and surrounded by a swale which provides a wet fence and extends the ditch system.

One of the most fun features is the bridge over the swale to the climbing area.

Existing trees are retained. These provide separation and screening around the kiln and shade.

The layout and planting has been designed to maintain separation and screening from surrounding residents, yet convenient access.

1. Plan of play on the way within the riverside

2. Play areas within the blue/green channel

3. Plan of Bottle Kiln Park

Destination play area

Heritage references

6.8. Water Strategy

Working with Water

Too little, too much. This development is affected by too much water as peak rainfall is increasing with climate change and too little water as average rainfall is declining across the region.

The solution to river flood-risk is central to the proposal. Land levels are to be raised in parts and lowered in others. This creates development areas safe from flooding and that could be safely accessed even in the event of a flood. The lowered areas create open space between development for amenity, landscape, views and an extension to the marsh habitat.

The sustainable drainage scheme (SuDS) proposed in the outline application has been completely redesigned. It now provides a scheme inline with current (2023) guidance, with near green-field run-off rates across the whole site, including the existing areas that are/were concreted, and allowing for a higher increase in rainfall. The scheme will now improve the existing situation and improve the Outline Planning Consent (OPC) scheme, reducing run-off rates considerably and using this to recharge the Marsh.

Water butts will provide rainwater harvesting to each house. Communal rainwater harvesting will be provided to support irrigation of planting in the associated landscape.

The Wensum Edge is located between two rivers, and to the north of a fen marsh. The condition of the marsh is deteriorating due to insufficient groundwater recharge.

The aim of the water strategy is to provide betterment to the marsh without causing a detriment in relation to flood risk, and in order to create a sustainable environment for new development.

The buildings have been set back from the waters edge (more than the OPC) to give space to the river for ecology, flood, shading and outlook and to be designed to latest flood resilience standards.

Water is directed towards the marsh to replenish the ditches and habitat. A new ditch created around the Bottle Kiln to provide a 'wet fence' and habitat for bats food source. Further ditches are created through and around the Views to increase the habitat.

The water strategy has been designed using the most up to date hydrology and based on a comprehensive understanding of the site.

An example of the water strategy used in the Wensum Edge is given opposite.

Water strategy to be read in conjunction with FRA

6.9. Flood Risk

Flooding is a natural occurrence. Designing with the natural rhythms of water can help to manage flood-risk without the need for unsightly, expensive defences - which in turn can push flood water into other areas.

Areas that are liable to flood can also be havens for nature or public amenity. By re-profiling the land, flood-water can be directed towards areas for nature, particularly the marsh, and other areas raised to provide safe platforms for development.

The majority of the site is outside the 1 in 100 year (1%) flood extents. Some areas, particularly in the north, are within the area liable to flood in a 1 in 100 year (1%) event and parts of this area are within the area liable to flood in a 1 in 30 year (3.3%).

Sequential Approach

A sequential, risk-based approach to the location of development – taking into account all sources of flood risk and the current and future impacts of climate change, was carried out for the OPC. This established the acceptable development use and permitted areas and was agreed with the LA and the Environment Agency.

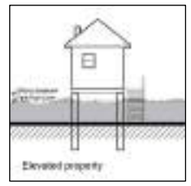
The accepted solution was to raise land levels and finished floor levels above the 1 in 100 year flood level including allowing for climate change, and to reduce land levels elsewhere on site to provide compensation (additional floodplain) for the loss of floodplain where levels are raised.

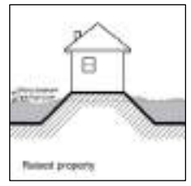
This flood mitigation proposal has been updated in accordance with the latest (RMA) design and tested using the latest modelling, based on the latest flood data and assessments for climate change,. Full details of the flood risk and the mitigation strategy are provided in the detailed Flood Risk Assessment.

Flood risk strategy

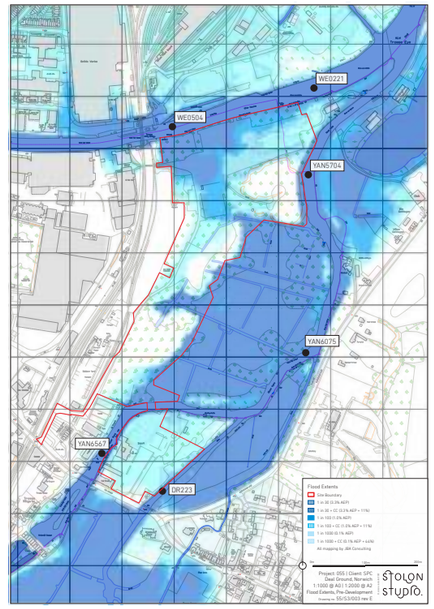
The approach to managing flood-risk incorporates a number of measures:

- Raise land levels above the flood level, where necessary to provide a safe development platform for buildings and access
- Raise buildings above flood level on columns, where not possible to raise land levels.
- Lower land levels to create space for water during flood
- Extend swales between development to aid flood flows
- Set finished floor levels set above the 1 in 100 year flood level including allowance for Climate Change and at least 300mm
- Set all car parking above the 1 in 100 year flood level
- Create flood void to help flood flows during flood
- Nature rich open spaces, designed to store water in a flood
- Sustainable Drainage (SuDS) to absorb rain water on site including additional allowance for Climate Change and direct water back to marsh





Source: Metric Handbook



Flood Extents Pre-Development, JBA

6.10. Flood Risk

Raising and lowering land raising levels

Large parts of the site (within the red line) are above the 1 in 100 year flood level. However, the land rises and falls irregularly creating pockets of land that are below this level and would need to be raised to prevent flooding. These areas of land would be raised above the flood level for buildings and safe access and egress. Other areas of higher ground currently above the 1 in 100 year flood level would be lowered allowing them to flood. See plan opposite. These would be used for ecology and amenity and contributing to the character of the area.

The compensatory storage provided through the development provides an increase in the flood capacity.

Flood flow channel (source: JBA)

Flood Flows

Flood water on the site flows from the River Yare North over from the River Wensum eastwards overland. In the event that there were to be a very large flood the flood flows from both rivers would connect.

The structures nearest the rivers - bridges and buildings - have been designed to maintain these flood flows through the creation of voids underneath. This is common practice. A bridge near/over a river it is usually supported on piers rather than on a raised embankment. This allows flood water to pass below the deck level and wildlife. The ground floor of a building is often suspended above ground, with a raised slab or beam and block floor, particularly in areas of clay heave.

Land running North to South at the centre of the Wensum Edge is to be remodelled to improve flood flows between the River Yare and the River Wensum. The flood flows are not substantial but when modelled without this connection it showed small increases in flood levels, which would not be acceptable. This creates the opportunity for a blue/green corridor running through the heart of the development, with space for habitat play and amenity. See plan opposite.

Land raising and lowering (source: JBA)

Flood risk

Finished Floor Levels

The finished floor levels for all dwellings are to be set above the 1% (100yr) flood level including allowing for climate change (CC) and freeboard. Ideally this should also be above the 0.1% (1000yr) +CC flood level.

Car parks should be above the 1 in 30 + CC year flood level but may be located where the ground level is lower than the finished floor levels. The LLFA has asked that any car parking linked to development (ie not puplic car parking) should be above the 1 in 100 year + CC flood level

Flood Voids

A flood void is a space below a building where water can flow under the floor level without the development flooding. Some of the buildings, closest to the River Wensum will incorporate a flood void to maintain flood flows. This follow the same approach approved in the OPC. The velocity of the flood is low therefore the voids can be screened off with mesh, louvres or open brick work, like a garden wall. This can add to the character of the buildings, see section opposite.

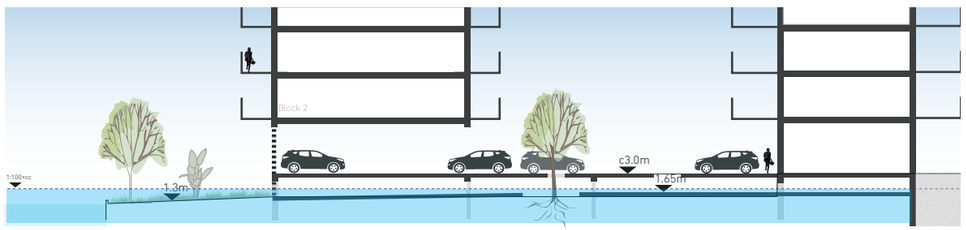
Flood Modelling

The plan opposite shows the modelled extent of flooding once the development is completed. This shows that through the measures proposed the extent and risk of flooding is largely decreased across the site.

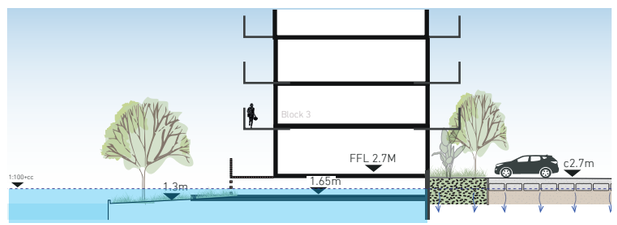
SuDS

Sustainable drainage systems (SuDS) are intended to manage stormwater run-off by mimicking natural drainage rather than discharging into the sewer. Measures include infiltration, attenuation and passive treatment. The OPC relied on below ground attenuation with a pumped outlflow at controlled run-off rates to reduce pre-development run-off. Since then policy has changed such that new development should achieve green-field run-off rates, including allowing for climate change. The SuDS scheme should prioritise source control (such as green roofs and permeable paving) and encourage treatment measures (such as filter strips, attenuation basins). This is described further on the following pages

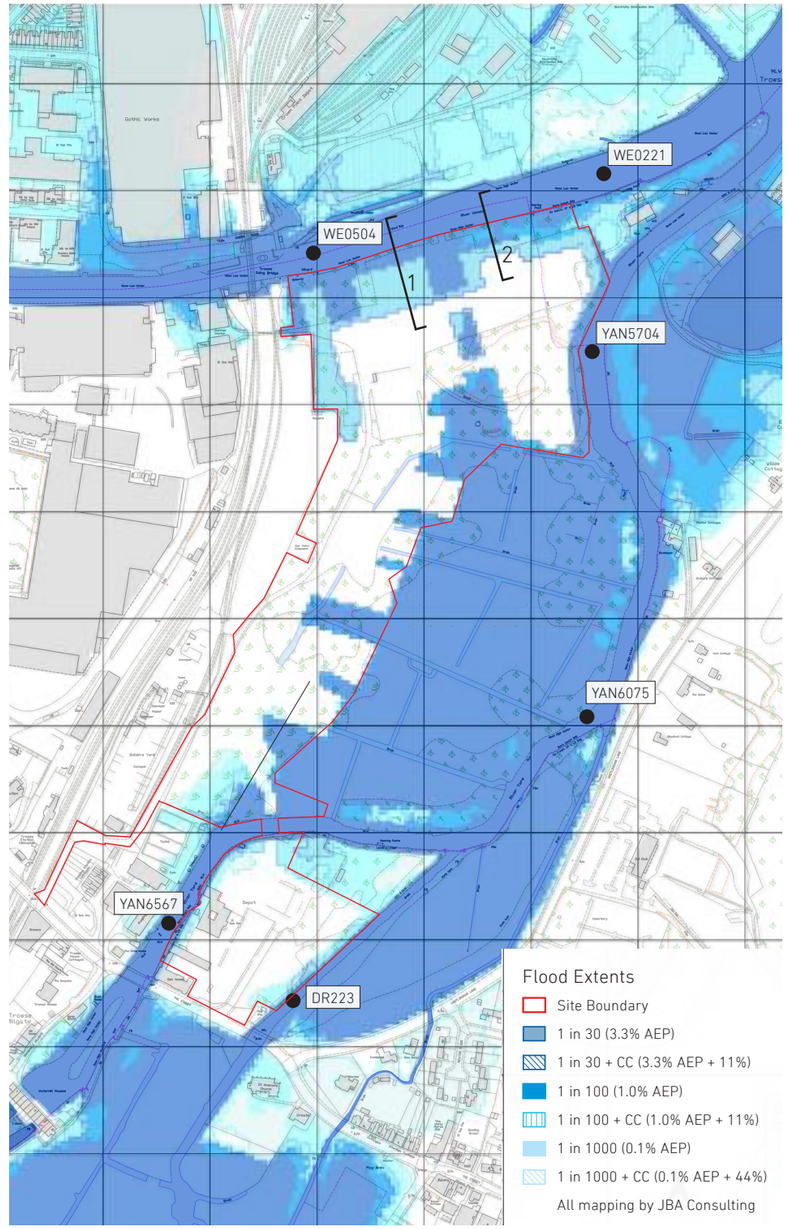
The SuDS measures provided through the development reduce rainfall runoff across the site, helping to reduce flood risk to the wider area.



1. Section showing flood void



2. Section showing flood void



Flood Extents Post Development, JBA

6.11. Sustainable Drainage System (SuDS)

Sustainable Drainage Systems (SuDS) are surface water drainage systems that seek to minimise the impact of development on the quantity and quality of surface water drainage. Beyond this core function, they should be designed to maximise amenity and biodiversity value (within the constraints of the setting).

These features should form part of the landscape proposals to ensure an integrated approach that enhances character. Features will generally be dry apart from when allowing water to infiltrate following rainfall. Where appropriate, proposals should seek to multi-purpose areas that will contribute to the overall 'usable' amenity landscape during dry conditions.

Options for introducing areas of permanent water have been considered where appropriate in aesthetic or habitat creation terms.

Whilst the technical design of the SuDS is as per the drainage engineers design, the developed proposals for SuDS have been a multi-disciplinary exercise, incorporating:

- A strong landscape and urban design to guide the form and shape of the SuDS
- Architects to ensure that the SuDS and landscape contribute to the character and identity.
- Drainage engineers with the expertise to ensure the proposed design will provide effective drainage
- Ecologists to provide advice on how to maximise the biodiversity value

Further details and calculations are provided within the FRA.

6.12. Sustainable Drainage Strategy

SuDS approach

Sustainable drainage has been designed in line with a SuDS management train of:

- Source control
- Site control
- Regional controls

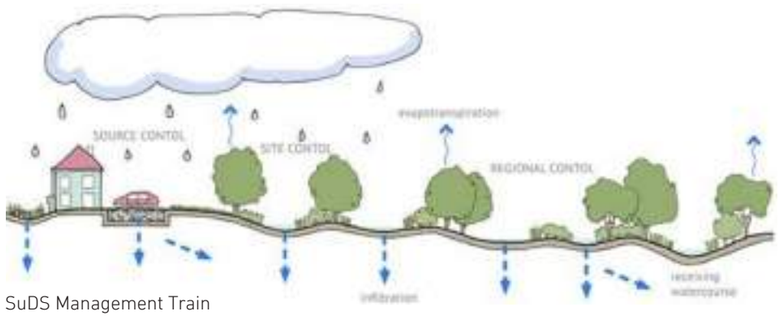
SuDS features used include:
- Living roofs
- Basins /ponds
- Rain gardens/planters
- Filter strips, rills, swales
- Street trees
- Permeable surfaces /Tanked systems
- Beanie blocks, used for conveyance only where absolutely required

Infiltration devices were not used to potential for ground water.

Added Value

SuDS features have been used to add biodiverse habitats and wetlands, or opportunities for informal play. A range of solutions across the site.

- Integrated SuDS 'train', not standalone ponds.
- Permanent water features
- Platforms to give safe access to the waters edge.
- Tall emergent vegetation in areas subject to frequent shallow inundation.
- Creation of habitats through appropriate planting.
- Piles of dead wood near ponds to enhance ecological habitat.
- Marginal, aquatic and reed species to frame and soften pond edges.
- Native tree and shrub planting to provide habitat connections and shaded areas.
- Visual amenity for residents and wider public.
- Signs, access and markers to support education



SuDS Management Train


Permeable paving


Street trees


Green Roof


Swale


SuDS signage


Permeable Paving


Urban planting

6.13. Biodiversity Strategy

The biodiversity strategy has been applied over the whole site as follows:

- Conserve and protect existing ecology e.g. through retention and protection of important habitats and trees, where possible.
- Introduce favourable management to the CWS fen habitats to reverse the recent decline in condition.
- Control public access into the fen through appropriate footpaths to minimise disturbance.
- Improve opportunity for new habitat through creation of new swales.
- Provide Green infrastructure such as wildlife corridors, linking population and habitats.
- Provide bankside vegetation along the River Wensum corridor.
- Extend fen habitat between development parcels to draw the existing fen into the built development.
- Create a multi-functional open space, most notably 'Kiln Park', to provide public open space and biodiversity benefits.
- Translocate fen and notable plants into suitable receptor areas where losses are unavoidable.
- Provide green and brown roofs where appropriate.
- Re-use the existing bottle kiln for bat roost.
- Provide faunal enhancements within open space and built development, including bat and bird boxes, hedgehog cut-outs and bee bricks.
- Control / eradicate invasive plant species.

Riverside Habitat

Marsh Habitat

Semi-Natural Parkland

Swales

Urban Riverside

Biodiversity strategy to be read in conjunction with ecology reports

6.14. Open Space + Connected Habitats

Green Open Spaces and Green/Brown Roofs

A number of residential buildings within the Wensum Edge development areas could support green/brown roofs. The roofs should be designed for the benefit of biodiversity and will provide additional supportive habitat for a range of invertebrate and bird species.

Connective habitats/Green Infrastructure

The development proposals should be carefully designed to maximise benefits for biodiversity, incorporating connectivity of the retained and newly created habitats throughout the site. The swale areas which connect to the retained fen habitat, should draw wetland habitat through to The Views development and in places directly abut the boulevard tree planting along the vehicular access road within the west of the site. In addition, the connective habitats of the riparian corridors of the River Yare and River Wensum should be enhanced and managed through an appropriate habitat management scheme. This network of green spaces within the development, in addition to the provision of green/brown roofs, should ensure that a comprehensive Green Infrastructure scheme is in place providing multi-functionality through the provision of recreational spaces, ecosystem services and biodiversity benefits.

Wetland Habitat / Landscaping

The new landscaping scheme should involve creating new wetland areas within the site in the form of swales. The landscape scheme may also include planting a range of native tree/shrub species along the River Wensum, vehicular access road, railway corridor and also within parkland areas.

Connected habitats

Precedent wetland habitat meets development

Play provision in a natural setting

Semi-natural planting

Swale integration

Planting precedent

Contextually appropriate planting

6.15. Species Analysis

Bats

The retained kiln within the Deal Ground site will be renovated, as part of the proposals and the opportunity will be taken to enhance the structure for the benefit of roosting bats. This should include the incorporation of bat bricks and roughened wooden timbers within the internal structure and the placing of metal grilles over entrances to the kiln to minimise disturbance by people. Connective lines of vegetation/habitat should ensure that flight lines to the kiln remain to encourage discovery of the kiln by bats. In addition, a number of bats boxes (differing types) could be erected within the site to provide a net gain in roosting opportunities for bats at the site.

Birds

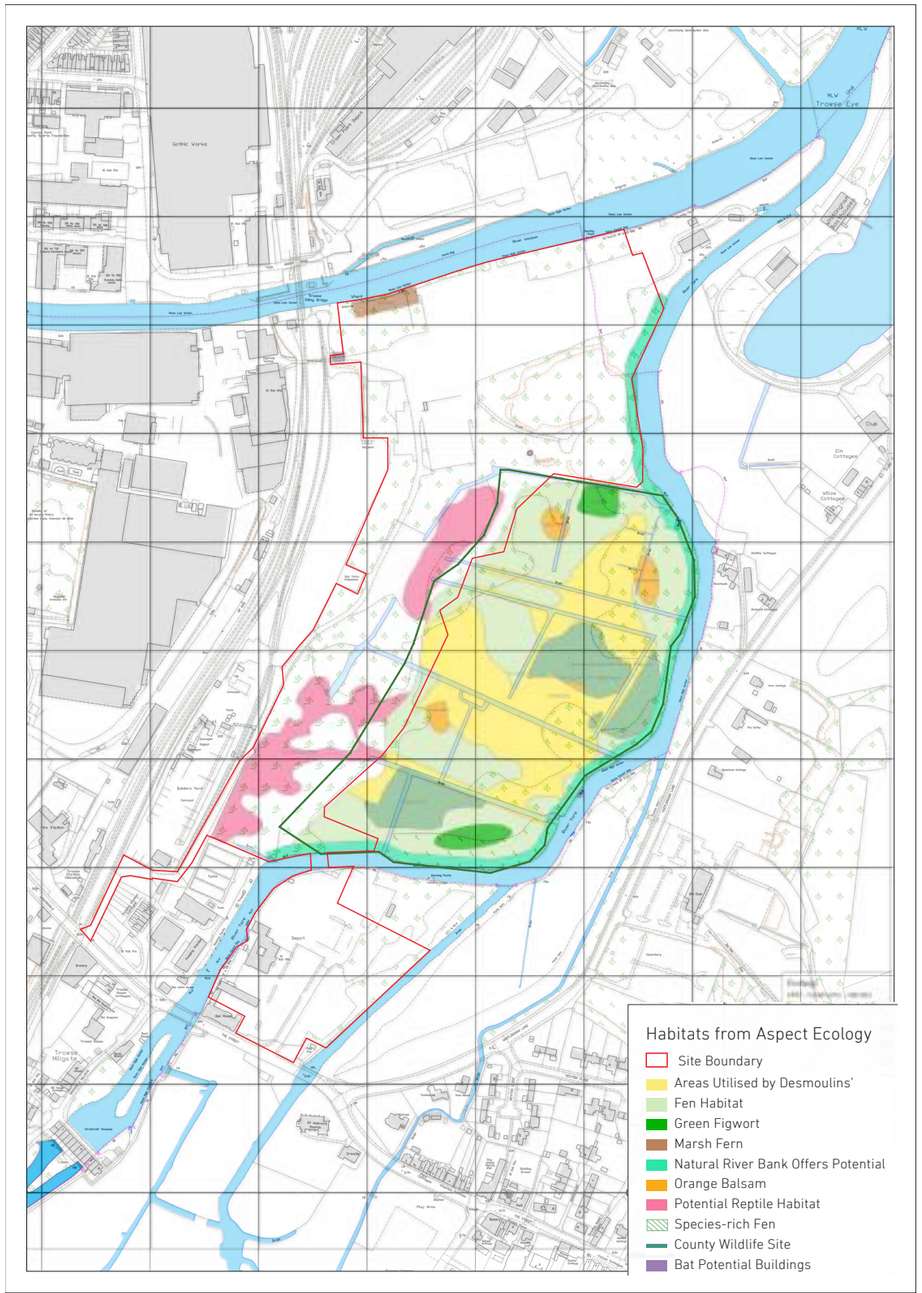
The retention of the fen and the commencement of appropriate habitat management will ensure that the overall fen habitat is enhanced for the benefit of biodiversity and, in turn, breeding birds. Areas of marginal scrub and trees should be retained, whilst further colonising and encroaching scrub could be managed to ensure the fen remains an open habitat. Furthermore, it is proposed that a number of bird boxes be erected on retained trees and on new buildings within the development to provide new nesting opportunities for this species group.

Invertebrates

New areas of wetland habitat should be created under the development proposals in the form of swales. These areas will increase the overall wetland area available for invertebrates at the site, including Desmoulin's Whorl Snail. These areas would be managed to ensure that nectar source are available for a range of invertebrates at the site.

Amphibians and Reptiles

New areas of wetland habitat are created at the site, incorporating areas of ephemeral pools and ponds along the length of the swales. These areas would provide additional habitat for amphibians and grass snakes at the site.



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