

**East Norwich Masterplan Stage 1 - part 2**  
**Draft**

# **EAST NORWICH MASTERPLAN**

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# 15 EAST NORWICH MASTERPLAN PUBLIC REALM STRATEGY

## 15.1 A sequence of linked spaces creating new routes

The East Norwich Masterplan will be held together as a vibrant new collection of quarters and neighbourhoods for the city of Norwich by a network of places, spaces and routes.

More detail on the range of spaces and how they will succeed is provided in the following section of the masterplan.

Some of the principal spaces and places which comprise this public realm strategy for East Norwich include:

- 1 Carrow Abbey Grounds
- 2 Carrow House Grounds
- 3 Carrow west gate
- 4 The 'F' building space
- 5 Seed Square
- 6 Carrow river front
- 7 Carrow south gate
- 8 Pumping Station
- 9 Village greens
- 10 Neighbourhood squares
- 11 Broads gate
- 12 Leisure marina
- 13 Boating marina



Fig 48 Public realm framework



# 16 EAST NORWICH MASTERPLAN LAND USE STRATEGY

## 16.1 A mixed use masterplan for a strategically important site

The masterplan for East Norwich creates an opportunity to create a distinctive new part of the city – working with natural and heritage assets to embrace and enhance the city’s relationship to the river and its economic and cultural past.

At the heart of the masterplan is a focus on introducing a range of residential, commercial, leisure and community activities that enliven the area and create a vibrant location for people to live, work and enjoy their spare time.

The masterplan seeks to integrate spaces for living and working, supporting these with retail and leisure facilities that meet the needs of both residents and workers, reflecting the diverse and integrated mix found in the heart of Norwich that makes the city so successful and attractive.

### 15.1.1 An appropriate mix of new homes

Norwich has seen significant levels of development in recent years both within the city and around it’s edges, this has delivered a range of new properties including apartments, urban townhouses and larger suburban semi-detached and detached homes. This reflects the mix of people who want to live in Norwich, who range from young first-time buyers, families and older

people looking to ‘downsize’ – supplemented by a more transient student population.

In the main development has focussed on ‘traditional’ property tenures in the form of build to sell market homes or affordable housing both to rent and purchase. However, in recent years there has been an increasingly quantum of development focussed on specific parts of the housing market including purpose-built student housing, older persons/retirement living and new build to rent units.

The land use strategy which underpins the masterplan seeks to provide the appropriate setting and development opportunities to respond to each of these markets and ensure East Norwich can accommodate a truly mixed and balanced community of residents.

The strategy seeks to leverage the site’s riverside setting to support the delivery of new apartments, both within retained buildings at Carrow Works and new buildings along the river frontage on Carrow Works, the Deal Ground and the Utilities site. The sale, location and nature of these opportunities can support a mix of tenure types including general sale/rental development, specialist provision (such as retirement living or build to rent) and sector specific

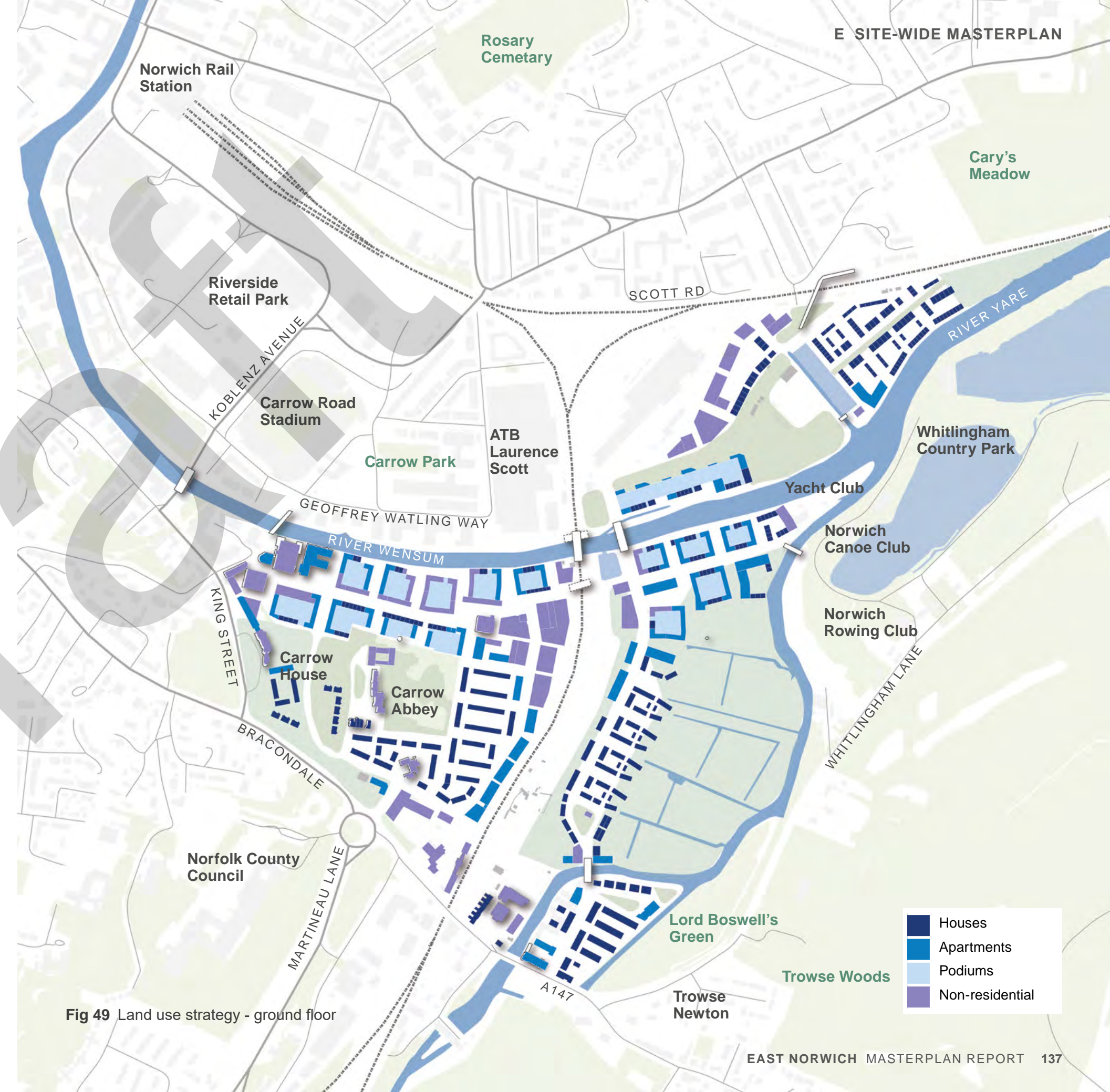


Fig 49 Land use strategy - ground floor

homes (such as student accommodation or extra care).

The masterplan also provides for new houses to be built offering a unique opportunity for families and larger households to live close to the city centre but still benefit from connections to the river and wider countryside. The mix responds to the attractiveness of Norwich as a city for families and the strong levels of demand and need for larger properties within the city.

15.1.2 **A balance of non-residential uses**

The opportunity to integrate amenity provision and new homes is crucial to East Norwich's success and its ability to achieve the mix of residents envisaged and creating a community that benefits from a wide range of facilities. The co-location of residential and community/commercial space will be critical to supporting residents across all age and socio-economic groups.

At the heart of the masterplan is the integration of new community facilities that can provide for the population of East Norwich, with space for a school, health facilities and community space as part of new neighbourhoods in the city. These will be highly accessible to residents of the area, linking to the main pedestrian, cycle and bus network.

As set out in the following chapter, the approach to non-residential uses has been developed to both

complement the existing offer within Norwich but also create new and distinctive opportunities to meet the needs of residents and businesses alike. It will provide residents with places to work close to home and new leisure, dining and entertainment opportunities, these will also offer attractive opportunities for people who's businesses are based here.

15.1.3 **Development capacities**

Whilst the masterplan is an illustrative framework, the urban structure and development framework outlined within it has been tested against the headline guidance under GNLP Policy 7.1 which states that the site will, in the plan period, deliver in the region of 4,000 homes and around 6,000 jobs.

Overall, the masterplan provides the space to accommodate 3,470 new homes of different forms and tenure types, with almost 60% being houses and 40% flats. The masterplan also proposes over 80,000sqm of non-residential floorspace that incorporates new workspace, retail, leisure, education, community and healthcare activity and can accommodate around 4,000 jobs. Please see Table 5.2.

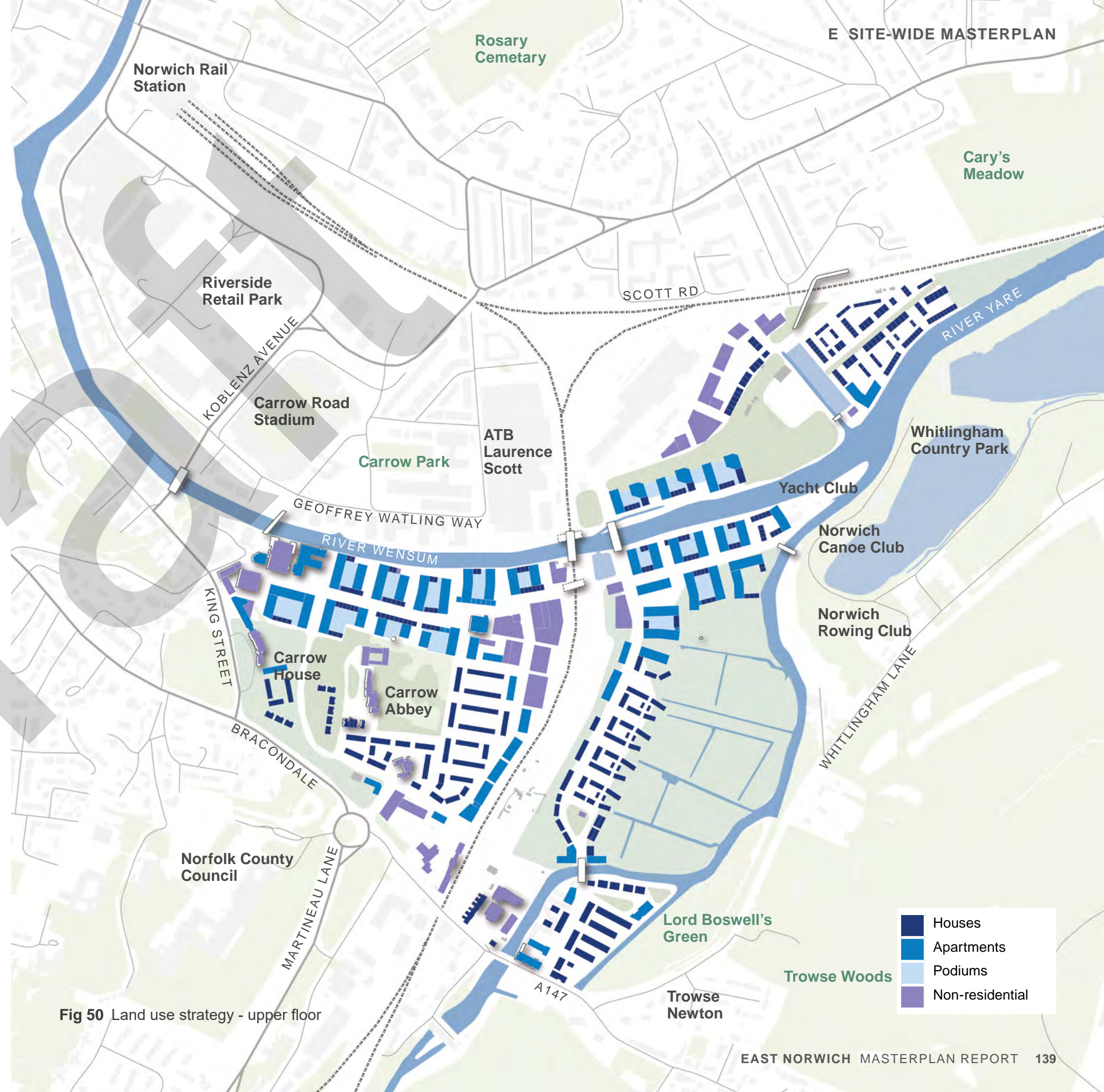


Fig 50 Land use strategy - upper floor

# 17 EAST NORWICH MASTERPLAN EMPLOYMENT USE STRATEGY

## 17.1 A mixed use masterplan for a strategically important site

The non-residential uses will be critical to the long-term success of the masterplan and creating a desirable place for people to live, work and visit. A mix of vibrant uses across East Norwich will encourage people to a site that has been closed off to the public for a number of years. An important part of creating a vibrant and exciting place will be meanwhile uses that will bring life the area before development begins and whilst it is going on.

The use mix in the concept masterplan has been developed through market analysis and engagement with the East Norwich Partnership, stakeholders and the community. The use mix will be evolved and refined through stage 2 of the masterplan alongside the delivery strategy and production of the SPD.

### 17.1.1 Carrow Works

The Carrow Works site provides an opportunity for a dynamic mix of non-residential uses to serve not only the new residents and employees but those visiting East Norwich. It's mix of heritage buildings and industrial character can provide a point of difference from other areas of the City.

The cluster of non-residential buildings around Carrow House and towards the river will be a gateway to East Norwich from the City and provide an interesting mix of office, co-working, SME space, Food Hall and ancillary retail space. The workspace will house growing sectors and new businesses in Norwich including, media, culture, digital and creative industries and will be supported by a vibrant Food Hall that provides space for local businesses and entrepreneurs.

The ground floor uses along the main east-west street will create a new high street providing a mix of interesting uses that connect the main employment areas on the site whilst also connecting the riverside. These uses will include:

- Traditional amenities that support residential and workspace such as a small format food store, Hair and Beauty salons and dry cleaners;
- Experiential leisure such as Escape Rooms, Mini Golf and other interactive games;
- An improved offering for families with young children including nursery and soft play facilities;

- Food and beverage to support the day and evening economies including, coffee shops and cafés, pubs, bars, restaurants. Furthermore, evening economy uses that provide an alternative to alcohol based leisure, including live music venues or locations for e-sports; and
- Health facilities including a Gym and facilities such as Pilates and Yoga Studios, Cross Fit and Spin Class facilities, spaces for private Gyms/Personal Training, dentist, physiotherapist, chiropractors and pharmacies.

The buildings to the north east of the site, adjacent to the railway line will provide a mix of creative and workspaces, light industry and education spaces. The creative and education spaces will draw people into the heart of the site, with the light industrial and workspaces buffering the new high street from the railway line. These spaces will provide space for light manufacturing and the production of goods.

**Table 5.2** Development Wide Schedule Of Accommodation

| RESIDENTIAL        | NUMBER OF UNITS | % OF UNITS | GIA AREA    |
|--------------------|-----------------|------------|-------------|
| Apartments         | 2,566           | 61%        | 201,200 sqm |
| Houses             | 903             | 39%        | 103,300 sqm |
| Totals             | 3,469           | 100%       | 304,500 sqm |
| NON RESIDENTIAL    | NUMBER OF JOBS  |            | GIA AREA    |
| New Buildings      |                 |            | 68,000 sqm  |
| Existing Buildings |                 |            | 16,500 sqm  |
| Totals             | 4,000           |            | 84,500 sqm  |

*Note: Areas provided in this schedule represent design intent only and are to be confirmed by others. These figures are stage 1 interim measures, they are subject to change as the design develops and should not be taken as final. Numbers are rounded.*

The community cluster to the south of the site will include a two form of entry primary school, primary health facility, nursery and other community facilities deemed necessary such as a Library. New homes delivered on the East Norwich sites will require a range of community facilities and although the masterplan is still at a concept stage, the number of new homes will drive the need for a primary school, nursery and primary healthcare facility. Beyond the primary care there will be a need and/opportunity to integrate wider healthcare facilities from both public and private sector operators to ensure the needs of the community are met. This would most likely include dentists, physiotherapists, chiropractors, mental health specialists and pharmacy. These can be integrated into a health centre or form part of the 'high street' offer.

Further engagement and market testing is required to understand the future of Carrow Abbey, however it is an important heritage asset for the City that should be accessed and enjoyed. The building is suitable for a boutique hotel or event/wedding venue. Alternatively, the building could be retained as a heritage asset through an organisation such as the National Trust or as a museum.

**17.1.2 Deal Ground and May Gurney**

The Deal Ground and May Gurney sites will be the gateway to the Broads National Park and the historic village of Trowse, merging the City into the

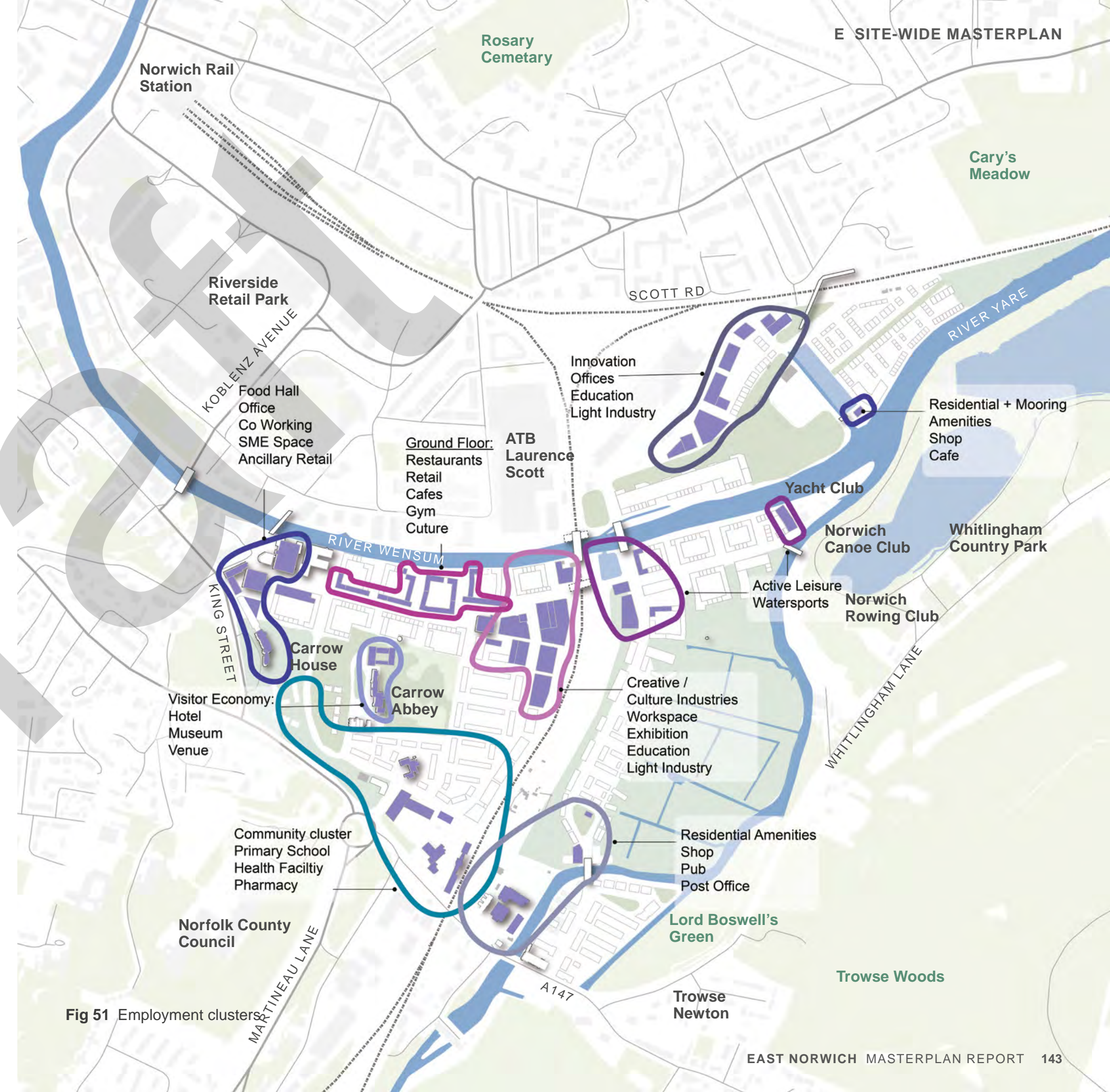
countryside. The County Wildlife Park on the Deal Ground will be re-opened to the public and the site will benefit from improved pedestrian and cycle access to Whitlingham Country Park.

The areas to the north of the Deal Ground will provide spaces for active leisure associated with the river and water. The small marina will provide day boat hire facilities and ancillary uses such as food and beverage, helping make East Norwich a destination. Next to the Yacht Club there is the potential for complimentary uses to be provided that make the most of the location on the banks of the river.

The buildings to the south of the Deal Ground, to the north of the River Yare, will include local amenities to support the lower density residential development of the southern part of the Deal Ground and May Gurney sites. They will include uses such as a Post Office, small convenience food store and pub.

**17.1.3 Utilities Site**

The Utilities Site is currently inaccessible to the public and is located adjacent to the Greater Anglia/ Network Rail depot. The site is the home of a former Power Station and still contains a number of underground and overground utilities including an electricity substation. Despite these constrains the sites' location on the northern bank of the River Wensum and Yare presents a unique opportunity to re-stitch it back into the City.



**Fig 51** Employment clusters

The land adjacent to the Greater Anglia depot will be non-residential to ensure there is no conflict between the depot and residential. There are two scenarios that could be considered for these collection of buildings, the first of these is centred around education facility that links to the railway industry. Such as a rail education facility, in partnership with rail operators or education providers. An example of this is the Ilford Tunnelling and Underground Construction Academy (TUCA) which is a training academy located in Ilford in East London. As well as the education facility in this scenario would be light industrial and office spaces.

The second scenario of this part of the Utilities Site is dependant on the wider success of the delivery of East Norwich and the ability of the masterplan to deliver wider infrastructure to re-stitch this site back into the City. In this scenario these buildings would provide space for a large institution such as an international employer, higher education provider or Central Government department to locate here. Whilst our market analysis has not demonstrated demand from these uses currently, there is the potential for the Utilities Site to be a desirable place to locate a large institution once wider infrastructure and landscaping has been delivered.

To the east of the Utilities site there is the potential to provide a marina. A marina not only provides space for boat moorings but presents an economic opportunity for the City to attract new visitors.

Furthermore, uses such as residential and food and beverage would benefit from being located adjacent to a marina and additional value generated by this unique feature.

Not only would a Marina provide real benefits to the City, but it would serve as a compensatory measure in the event that bridges over the River Wensum are required to be in a fixed position. Fixing of the bridges would result in larger vessels no longer able to navigate the Wensum into the Port of Norwich, which is protected by an Act of Parliament from 1827. A marina would act as a mooring point for those larger vessels and mitigate the loss of direct access into the Port.



Mustard Seed Building



# 18 EAST NORWICH MASTERPLAN BUILDING HEIGHT STRATEGY

## 18.1 A contextual response to an historic city

Building heights will always be a sensitive issue in such an historic city as Norwich. Given the acute significance of the Carrow Works site in terms of its pivotal role in the social history and economic development of the city as well as its built heritage, a contextual and sensitive approach to building heights must be developed.

This strategy must be balanced by the need to make the best use of this city brownfield site which will play such a critical role in promoting sustainable patterns of development across the city as a whole.

Analysis of the existing building heights across the Carrow Works site has played a key role in determining the distribution of building heights across the masterplan area as a whole. The riverside warehouses of Carrow Works are large buildings and this grain and scale is continued along the river frontage and across into the northern section of the Deal Ground site.

Further into the Carrow Works site around the Carrow Abbey and Carrow House gardens, a more sensitive approach must be taken.

The Utilities site hosted two power stations on prominent river-front locations. The apartment buildings located where these massive buildings once stood will be similarly prominent on this key frontage.

Elsewhere across the site with perhaps the exception of the mixed-use building alongside the boating marina, will be more domestic in scale.

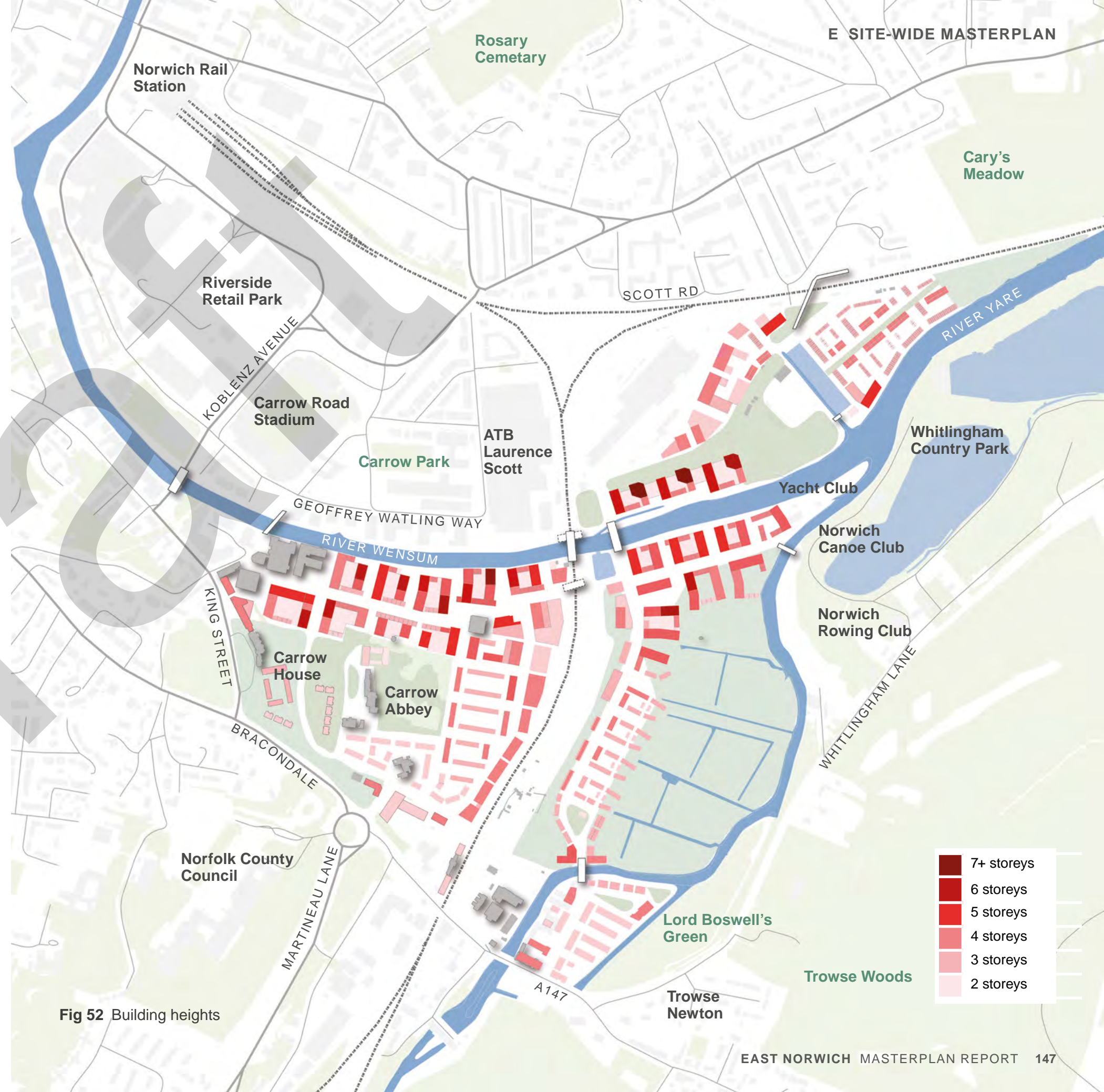


Fig 52 Building heights

# 19 EAST NORWICH MASTERPLAN ESSENTIAL INFRASTRUCTURE

## 19.1 A coordinated approach to infrastructure delivery

Whilst it is anticipated that individually owned sites will be promoted and will come forward separately, the masterplan is important in that it takes a masterplan area-wide perspective on the infrastructure requirements.

To some extent, all the individual sites within the masterplan area will rely on the provision of infrastructure across the masterplan area as whole to support development on each site in turn.

Further work is required on how and when this infrastructure will need to be delivered, although continues partnership working across the area's key stakeholders will inevitably play a critical role.

Whilst infrastructure elements required by all major regeneration schemes will be required - streets, SUDs and the like, there is a list of particular items of infrastructure which are more specific to the East Norwich Masterplan and the specific set of issues which need to be addressed as sites come forward.

Key critical pieces of infrastructure required to ensure the full potential of the masterplan is met through a coordinated approach to redevelopment including:

- 1 Upgraded pedestrian and cycle underpass between Carrow Works and Deal Ground
- 2 All modes vehicular bridge across the River Yare between May Gurney and Deal Ground (fixed)
- 3 All modes vehicular bridge access the River Wensum between Deal Ground and Utilities site (either opening or fixed)
- 4 Pedestrian and cycle bridge between Deal Ground and Whitlingham Country Park (fixed)
- 5 Pedestrian and cycle bridge between Carrow Works and Geoffrey Watling Way
- 6 Boating marina on Utilities site
- 7 Small leisure marina on Deal Ground site
- 8 Low level riverside walk along banks of Wensum (part of flood mitigation strategy)
- 9 Other flood mitigation (TBC)
- 10 Contributions to support bus services through the Carrow Works site
- 11 Infrastructure to support e-bike hire, e-car-hire scheme and e-car charging
- 12 2FE primary school and contribution towards secondary school place provision
- 13 Local public open and child play space as required
- 14 Appropriate community health facilities (to be agreed with CCG)
- 15 Ongoing maintenance and investment in Witlingham Country Park to cope with increased footfall and visitor numbers



Fig 53 Essential infrastructure

19.2 Spatial considerations associated with a new primary school

Given the anticipated level of housing development and the associated population increase, with reference to the Norfolk County Council Planning Obligations Standards document February 2021, there will be a requirement for a new two form entry (2FE) primary school.

A number of options have been considered and should be further explored as detailed proposals come forward. There are a number of important factors associated with the provision of a new primary school in the masterplan, including:

- The school should be a fully integrated part of the new neighbourhood, designed to encourage trips by active travel means.
- A Carrow Works location would be equidistant from the two nearest existing primary schools - Trowse and Lakenham Primary School are both approximately 15 minutes walk away.
- Given the urban location, the nature of the constraints associated with the site and the need to make best use of brownfield land for a range of land uses, an urban form of school - multi-storey and potentially an integrated part of a mixed use development - is likely to be required.

Examples of contemporary urban schools. From top, (i) Wyvil Primary School, Keybridge House and (ii) King's Cross Academy are both primary schools incorporated into mixed use housing developments; (iii) 'commuter parking' at King's Cross Academy; (iv) Hackney New School is an urban secondary school knitted within a constrained urban context

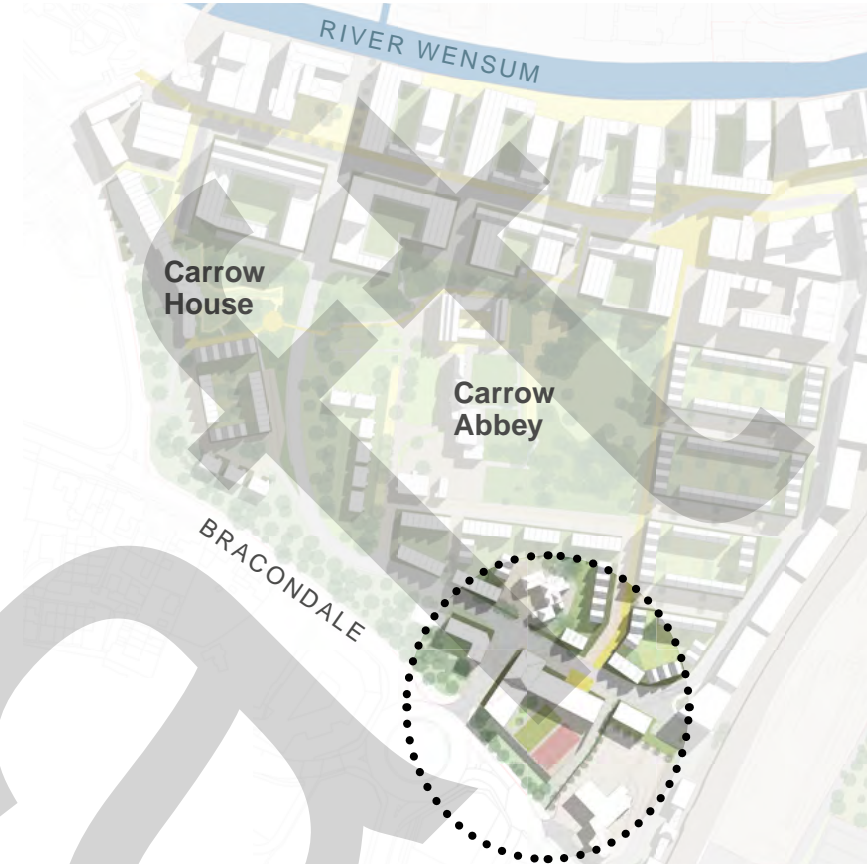
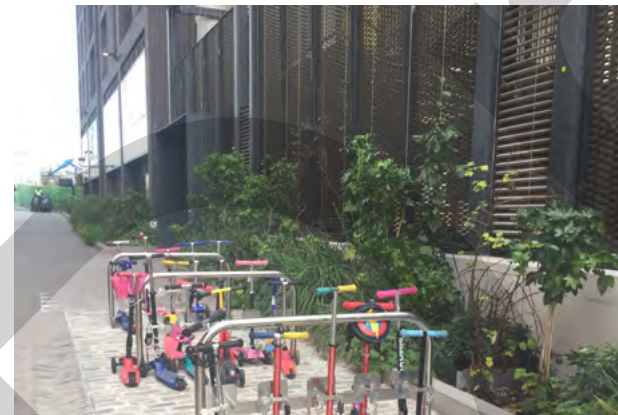


Fig 54 Option 1 - southern end of Carrow Works site

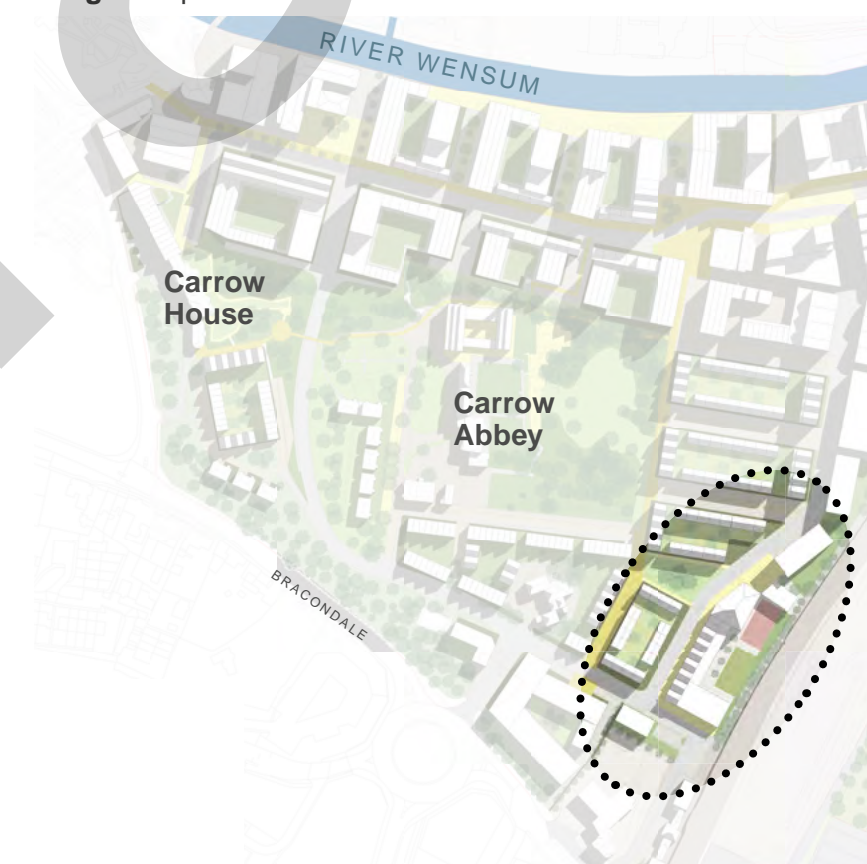


Fig 56 Option 3 - south-east of Carrow Works site



Fig 55 Option 2 - south-east of Carrow Priory grounds

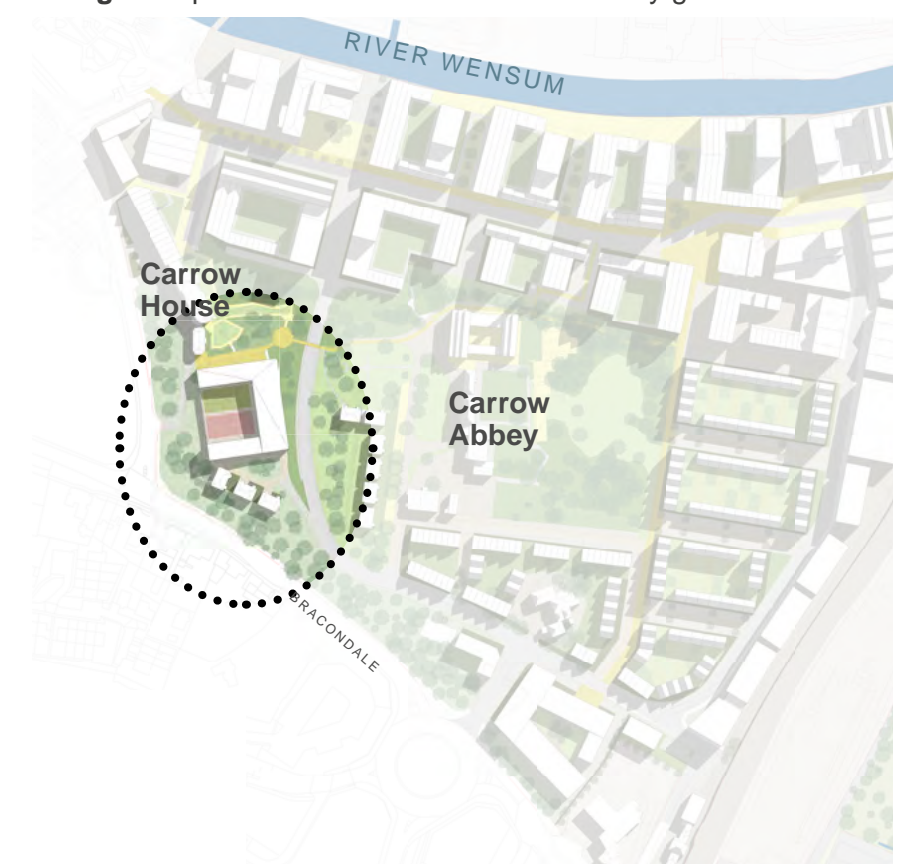


Fig 57 Option 4 - south of Carrow House

# 20 FLOOD RISK AND MITIGATION STRATEGY

## 20.1 Flooding context

### 20.1.1 Introduction

The East Norwich masterplan area provides an opportunity to create a sustainable residential and employment area as an extension of the city core and provide a 'working with water' to ensure all development is safe, in line with policy and provide no detrimental impact elsewhere.

This executive summary provides an overview of the Flood Risk for the East Norwich area which presents the context for development and proposes principles of mitigation measures that could be adopted to ensure the development is safe in terms of flooding and policy compliant.

### 20.1.2 Existing flooding

A freedom for information request has been made to the Environment Agency (EA) in order to obtain the existing flood extents and depths and how these impact the site. The data provided covers a wide range of flood events and includes the 1 in 20 year and 1 in 100 year events. These are key events as define Flood Zones 3b and 3a respectively. The provided data has also included a 1 in 100 year event with across the development design life in order to make an allowance for climate change.

Through discussions the EA have confirmed that the 1 in 1000 year event data is not available. This event would be used to determine the Flood Zone 2 outlines. In the absence of this, the 1 in 100 year plus climate change event has been used gain an understand of the 'worst case' flood risk to the development based on available information.

Whilst the River Wensum and Yare are shown as being tidally influenced the data provided by the EA for tidal events shows flood extents being contained within the lower lying area to the east of the Deal Ground and, on review of the below, has little impact on the emerging masterplan. As such, the focus of this report has been on fluvial sources only.

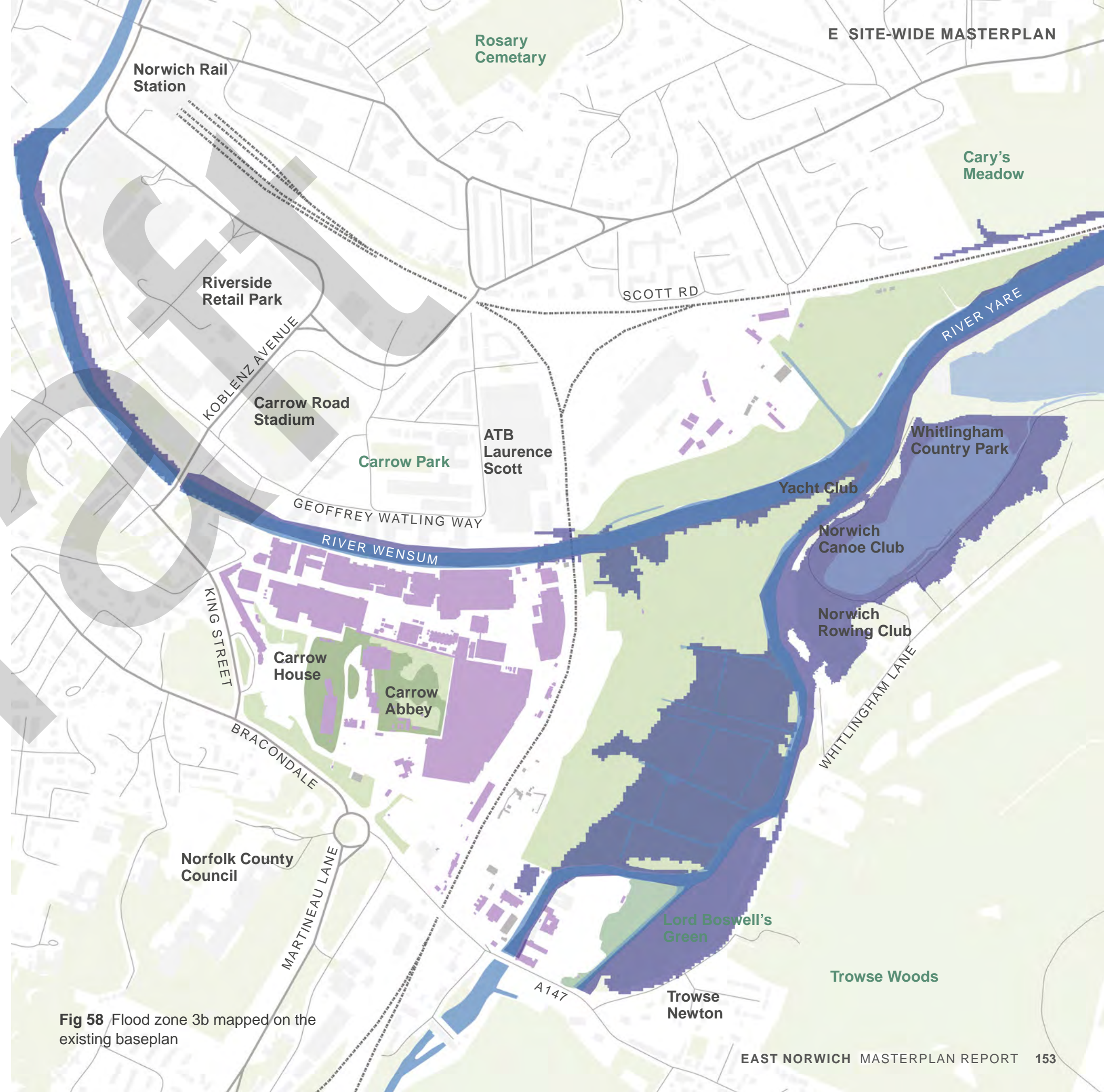


Fig 58 Flood zone 3b mapped on the existing baseplan

A summary of the flood risk to the site is as follows:

- The north western corner of the Deal Ground is shown as being at 'high risk' and within Flood Zone 3. Currently residential units are located within this area.
- An area of Flood Zone 3 extends along the northern boundary of the Deal Ground and along the frontage of the River Wensum. However, this is shown to avoid residential units based on the current layout.
- The eastern and south eastern sections of the Deal Ground are shown as being within Flood Zone 3. On review (and not shown on the attached plan) this area of Flood Zone 3 predominantly affects the lower lying area not earmarked for development but does extend into the development area and impacts some residential development but also the proposed link road.
- Large areas of the residential development within the Deal Ground are shown as being within Flood Zone 2 and at 'medium' risk of fluvial flooding.
- Large areas (almost the majority) of Utilities Land are shown as being within Flood Zone 2. These impact a large portion of the proposed development area.

20.1.3 **Wider policy framework**

The development of the East Norwich masterplan takes into consideration the relevant international, national, regional, and local policy context, especially with regards to transport, sustainability and the UK's net-zero commitments.

The relevant policy covered within the Transport Strategy includes:

- National Planning Policy Framework (2021)
- Norwich City Council's Preliminary Flood Risk Assessment (2011)
- Norwich City Council's Local Flood Risk Management Strategy (adopted 2015 and under review 2021)
- Norwich City Council's Development Management Policies Local Plan (2014) - specifically, but not limited to, Policy DM5 - Planning Effectively for Flood Resilience.
- Greater Norwich Strategic Flood Risk Assessment: Level 1 (2017)
- Greater Norwich Strategic Flood Risk Assessment : Level 2 (2021)



**Fig 59** Flood zone 3b impact - with zones where there are conflicts between the mastetplan and the extent of flood zone 3b

## 20.2 Flooding constraints and opportunities

### 20.2.1 Constraints

A summary of the flood risk constraints posed to each parcel is below:

1. The Deal Ground - the northern and eastern sections of this parcel are shown as being at high and medium (Flood Zones 3 and 2 respectively). Much of the areas of Flood Zone 3 are shown to be around the (expected) lower lying areas to the east that are crossed by a series of land drainage ditches. Another smaller area of flood zone 2 is shown to affect a line along the north boundary of this parcel. The area at medium risk is predominantly along the northern site boundary but this extends to provide connectivity into the lower lying eastern section of the site. As shown in Figure 4, the eastern and northern limit as shown as being inundated during the 1 in 20 year event and therefore within Flood Zone 3b: Functional Floodplain.
2. Utilities Sites - The western sections of this site are shown as being almost entirely at medium risk and within Flood Zone 2. Small areas of Flood Zone 3 (high risk) are identified at the south western boundary and immediately adjacent to the River Wensum.
3. Carrow Works & Carrow House - This parcel is shown as being entirely within Flood Zone 1 and

at 'low' risk from fluvial and tidal flooding. In being classified as this Flood Zone it is considered that site levels are suitably raised above the extreme fluvial and tidal flood events.

4. ATB Laurence Scott Land - This parcel is shown as being entirely within Flood Zone 3 and at high risk from fluvial/tidal flooding.

In addition to the above, there are some planning constraints that should be considered. On the basis that the proposed site has been allocated for mixed use development this would remove the requirement for the Sequential Test to be required. However, any residential development within Flood Zone 3a would require successful application of the Exception Test, and within Flood Zone 3b would not be considered "appropriate", without otherwise agreeing with the EA/LLFA an appropriate mitigation strategy. Such a strategy would need to comprise the alteration of the level of flood risk so as to result in the site being at an 'acceptably' low risk of flooding (i.e. removed from Flood Zone 3a/3b), whilst not resulting in an increase in flood risk to third-party land (i.e. ensuring any loss of floodplain storage is compensated so as to not increase flood risk elsewhere).



Bath North Quay before redevelopment



Bath Riverside



Bath North Quay after development



Bath North Quay after development

### 20.2.2 Opportunities

The below provided a list of potential opportunities available in order to mitigate the proposed flood risks outlined above.

- Lower portions of land throughout the site adjacent to River Wensum and River Yare to promote a 'flood corridor'. This would be 'stepped up' from existing water levels and would only be utilised for flood storage in exceedance events.
- Whilst the lowering of land within the eastern section of the Deal Ground site is also available to provide additional floodplain storage owing to the mechanisms of flooding, and this being from flows associated with the River Yare, this is only considered to have a minimal impact on developable area and may only benefit the Deal Ground site.
- Construction of new Marina type features. Whilst these would be for recreational uses, they would provide additional flood storage capacity which could in turn help redistribute flood storage area. Again, careful consideration will need to be given as to the locations of these to ensure they provide storage for the key areas (i.e. River Wensum and/or River Yare)
- Ground level raising (to be avoided where possible unless within tidal only floodplain).
- Construction of new flood defences (either site specific or on a strategic scale). This could involve the more traditional flood defence walls but other options available would be flood storage cells (either on site or within the upstream catchment) .



Fig 61 Artist impression of Bath North Quay riverside improvements



Fig 60 Concept designs for riverside walk in the Bath North Quay development

# 21 UTILITIES STRATEGY

## 21.1 Constraints and opportunities

### 21.1.1 Introduction

This section provides an overview of the utilities present within the masterplan area and identifies the risks and constraints to the proposed development.

### 21.1.2 Utilities site context

- A primary electrical substation located east of the Crown Point Stadler Traction and Rolling Stock Maintenance Depot, to the north east of the site.
- Various 132kV extra high (EHV), 33kV (EHV) and 11kV high voltage (HV) cables are found emerging and terminating at the substation.
- A gas pressure reducing station (intermediate to medium pressure) which connects with gas mains routed below the railway lines.
- A single High Pressure (HP) gas main east of the site. The gas main terminates at the Trowse Newton Hall ruins before crossing the River Yare and the site boundary.
- Multiple Intermediate Pressure (IP) gas mains are found running along the east boundary of the Site spanning to the west crossing the site and the railway before entering the Thorpe Hamlet region.
- A Medium Pressure (MP) gas main emerges from the gas reduction station located to the north of the site and connects to the Thorpe Hamlet suburb.
- Absence of significant water or telecoms infrastructure.

### 21.1.3 Deal Ground context

- Two 132kV cables crossing the site boundary at the south east region of the site exiting the site boundary at the Norwich Rowing Club.
- A single cable is seen to span across the site heading from the primary substation towards the south, connecting to the 33kV cables located at Bracondale street.
- Absence of large water infrastructure.

### 21.1.4 Carrow Works Site context

- Multiple 33kV cables found south of the site boundary
- A number of the heritage buildings adjacent to the Colman's Mustard site are served from the private utilities on the Colman's site. Maintaining services to these buildings will likely involve new connections to be made to the utility company owned infrastructure.

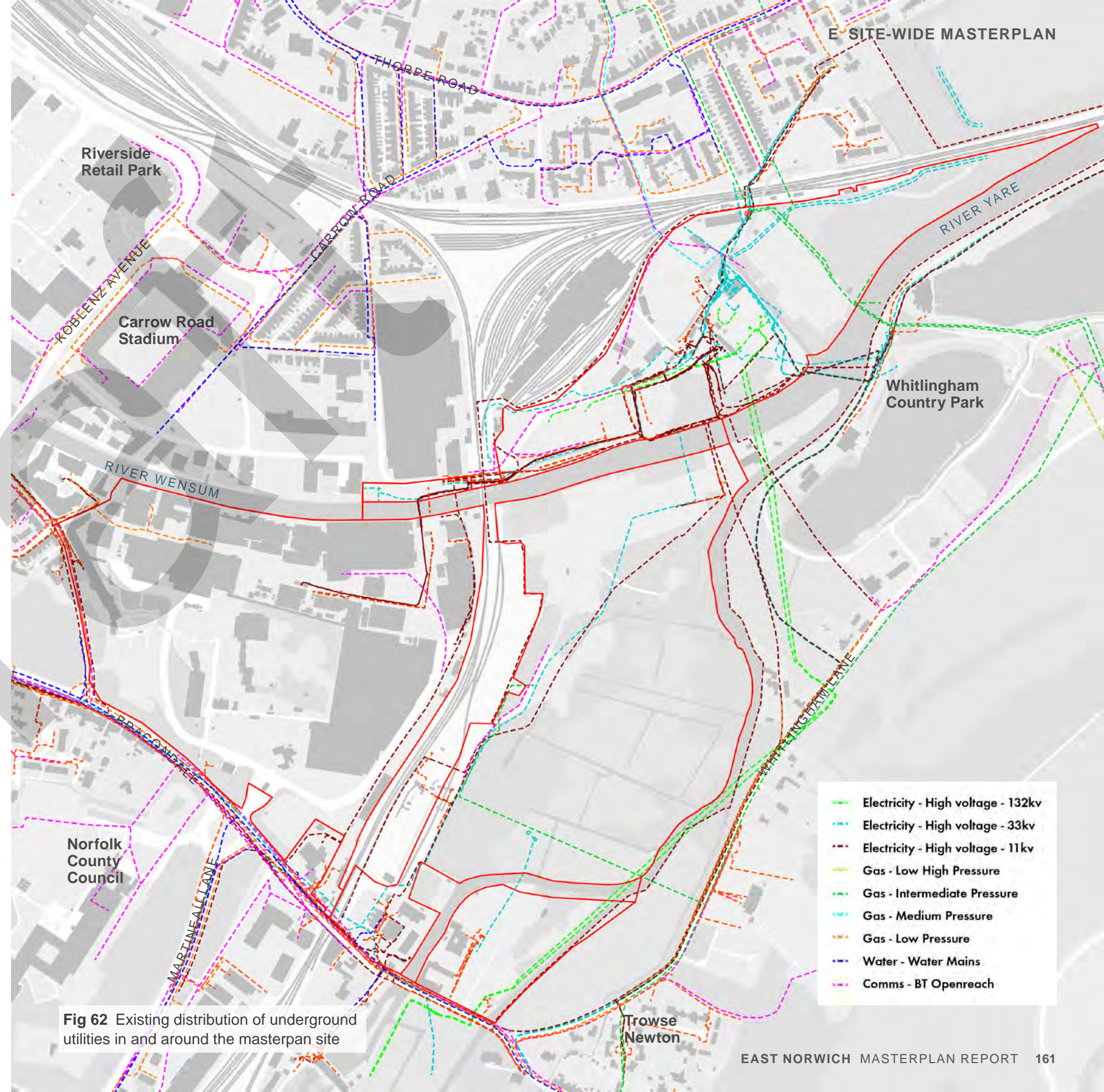


Fig 62 Existing distribution of underground utilities in and around the masterpan site



21.1.5 Mitigation of constraints in the masterplan

- The proposed masterplan has located roads, pathways and green landscape over many of the major buried utilities, noted above, to avoid the need for diversion and the associated significant costs.
- A marina has been sited adjacent to the power station on the Utilities Site in a land which cannot be utilised for residential development, because of its proximity to the power station.

21.1.6 Opportunities/new connections

- For the Utilities Site and Deal Ground the presence of major electrical distribution and major gas infrastructure will mean that there is unlikely to be limitations in capacity/availability of either.
- For the Carrow Works Site the fact that there has been recent industrial use/occupation indicates that there is also unlikely to be limitation in terms of capacity for electricity, gas or water to the site. Additionally, there is significant telecom infrastructure in and around the site.
- Major utilities are routed along the A147 to the south and west of the Carrow Works Site offering easy connection opportunities.

21.1.7 Outstanding conflicts/issues to be resolved

- Extra high voltage buried cables conflict with a number of proposed buildings in the Deal Ground. The diversion of these cables or the reworking of the affected development will need to be addressed in the next stage of design.
- Extra high voltage buried cables conflict with a number of proposed buildings in the Utilities Site. The diversion of these cables or the reworking of the affected development will need to be addressed in the next stage of design.
- A marina is proposed in close proximity of the Utilities Site existing power station. Whether this proposal is acceptable to National Grid/UKPN is not yet known and will need to be determined and also whether there are restrictions to the uses of marina, i.e., can boats be occupied overnight?
- High voltage cables and significant telecoms cabling conflict with proposed development on the east of the Carrow Works Site. The diversion of these cables or the reworking of the affected development will need to be addressed in the next stage of design.
- The planting of trees and greenery in the land adjacent to and south of the Utilities Site power station will require careful planning due to the extent of buried services in this area. The utility companies are unlikely to permit trees to be planted in close proximity.
- Maintaining of services to heritage buildings in the Carrow Works Site, if this a requirement, when developing the Colman's Works area.



Fig 63 Masterplan showing how it responds to the existing alignment of utilities

## 22 ENERGY STRATEGY

### 22.1 Constraints and opportunities

#### 22.1.1 Introduction

Norwich City Council declared and passed a climate emergency motion in January 2019. The original motion was strengthened to acknowledge that the climate emergency we face is inextricably linked with social and economic emergencies.

#### 22.1.2 GNL context

The Greater Norwich Energy Infrastructure Study was prepared in April 2019 to support the preparation of the Great Norwich Local Plan. Whilst the level of growth planned in the greater Norwich area will undoubtedly create some supply and capacity issues, the East Norwich site is fortunate for two reasons. Firstly, the large 132kV Thorpe sub station is located within the masterplan boundary on the Utilities site. Secondly, the headroom capacity within this substation compares favourably with other sub-station across the region meaning that there is unlikely to be any electricity supply or capacity issues associated with the development of the sites. This picture is summarised in Fig 64.

The Greater Norwich Energy Infrastructure Study found that *“there is the potential for inclusion of a heat network including supply from Surface Water*

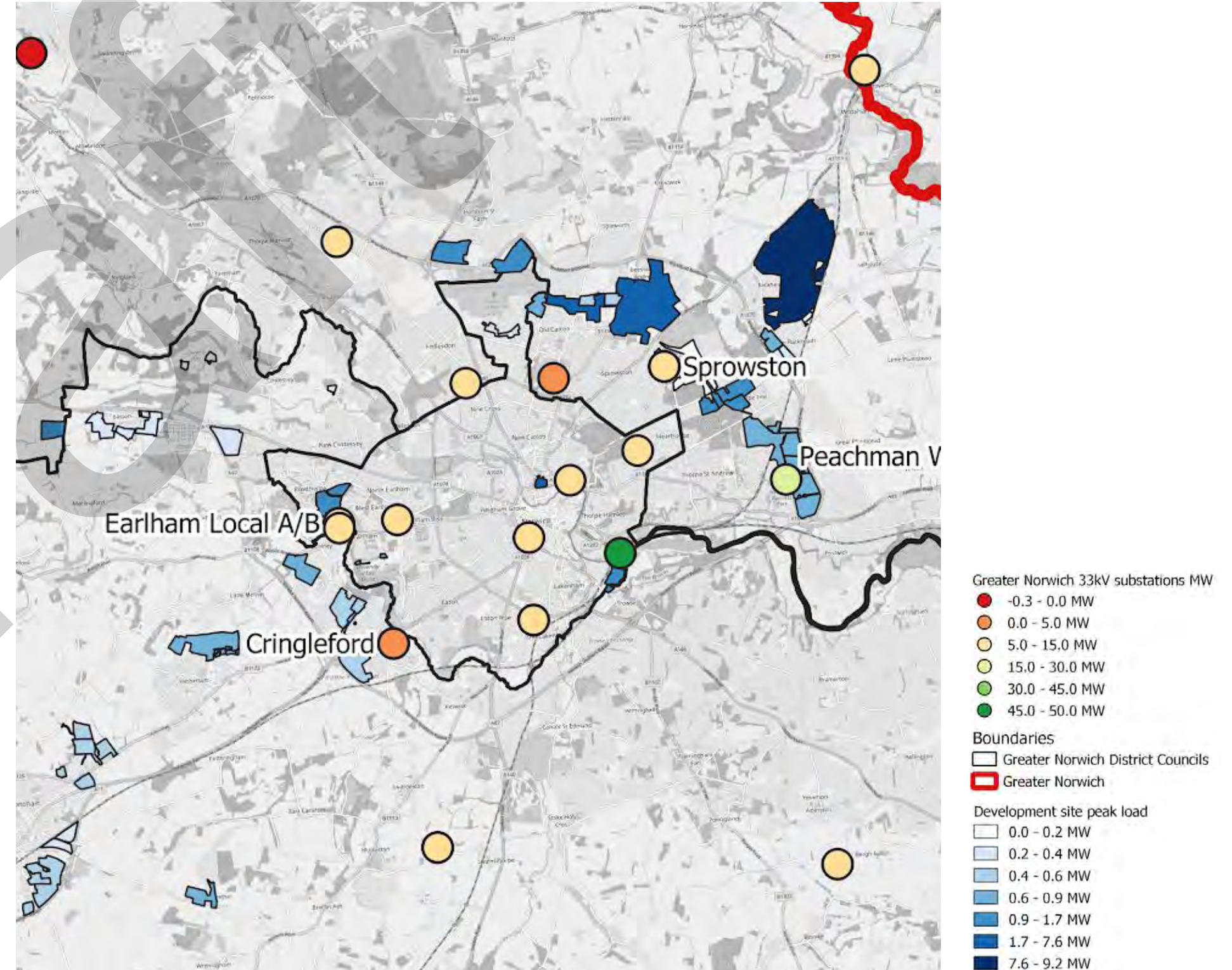
*Source Heat Pump (SWSHP) heat supply from the River Wensum and from on-site energy generation”* and that *“the sites have the potential to be developed as an exemplar development with opportunities to model the impact of the design of buildings and infrastructure on site that include a local heat network and electrified transport.”*

#### 22.1.3 Long term opportunities

This section provides an overview of some emerging technologies that could be incorporated in to the sitewide energy strategy and unlock further energy savings and carbon emissions reduction. These technologies may also provide scope for revenue generation for East Norwich.

As the policy landscape continues to evolve, and with the masterplan being a long term strategy, it will be important to look beyond traditional forms of renewable energy generation in order to deliver net zero. This should involve a review of all available natural, human and capital resources across the development. Identifying opportunities for interconnectivity between resources, energy streams using smart networks may offer exciting long term opportunities.

High level opportunities follow regarding waste, heat and power.



**Fig 64** Extracts from the Greater Norwich Energy Infrastructure Study, April 2019. The Thorpe substation is shown in dark green

22.2 Emerging innovations

22.2.1 Waste

Volume of waste and its persistence in the environment make it a serious issue. There may be opportunities in east Norwich to utilise waste streams from incineration and anaerobic digestion to compliment energy generation opportunities.

22.2.2 Heat

Due to the rapid decarbonisation of the electricity grid, electrification of heat now provides the most plausible pathway to net zero emission new buildings. It is anticipated that individual air source heat pump systems may be proposed as the default form of space heating and hot water generation for East Norwich. The following alternative strategies could also provide heat at a community level across the east Norwich area, utilising heat networks to distribute the energy around the site:

- Open Loop Water Source Heat Pumps
- Deep Geo Thermal
- Shared Ground Loop Arrays
- 5G Ambient Loop Heat Networks

22.2.3 Power

The National Grid in the UK is decarbonising rapidly, unlocking new opportunities for system-wide electrification at a staggering rate. The National Grid ESO predicts that, by as early as 2032, the grid could begin operating with negative emissions; capturing more carbon than it emits.

East Norwich can lead the charge and support the grid in its transition to net zero, whilst offering benefits to the residents of the new town and the wider community by using a Residential Micro-Grid - a site-contained electricity system that uses distributed energy resources (DERS), such as solar PV, wind turbines, and battery storage systems, to manage local energy supply and demand.



Fig 65 Potential energy resources for East Norwich

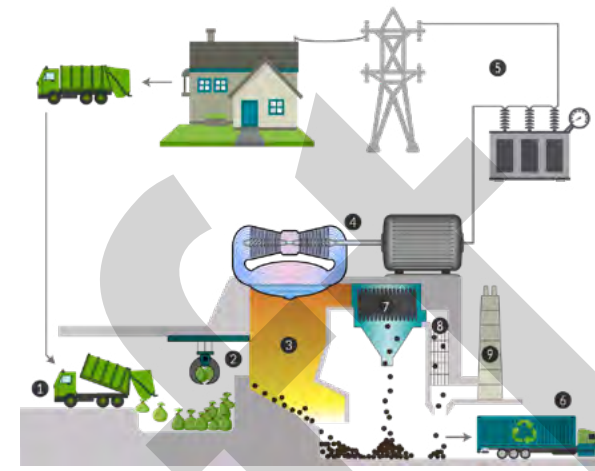


Fig 66 Incineration process

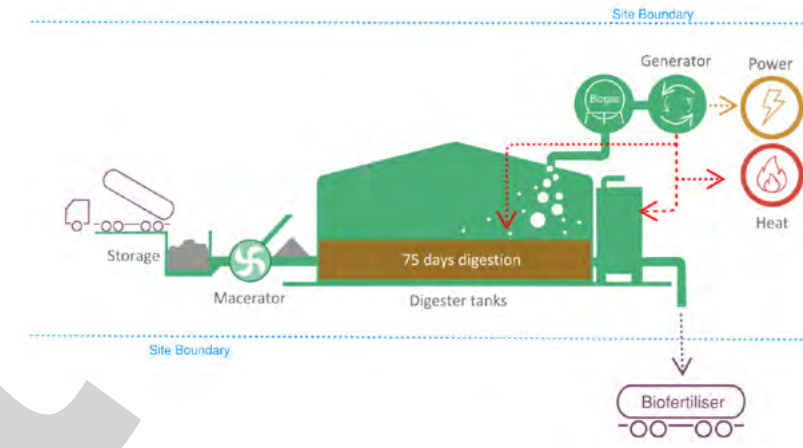


Fig 67 Anaerobic digestion (AD) process

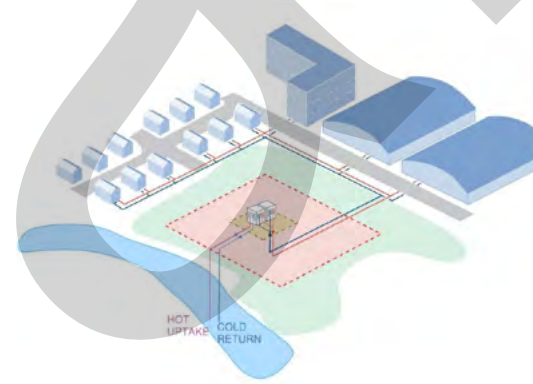


Fig 68 Open Loop Water Source Heat Pumps process

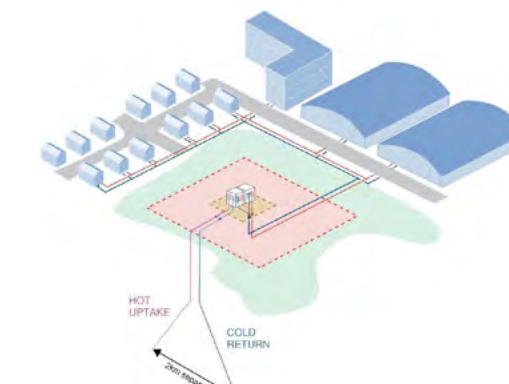


Fig 69 Deep Geo Thermal system

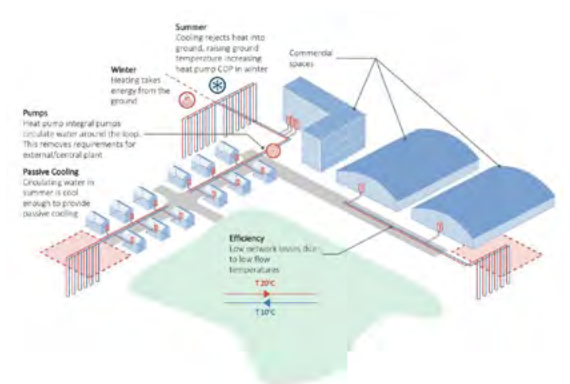


Fig 70 Shared Ground Loop Array system



Fig 71 5G Ambient Loop Heat Network

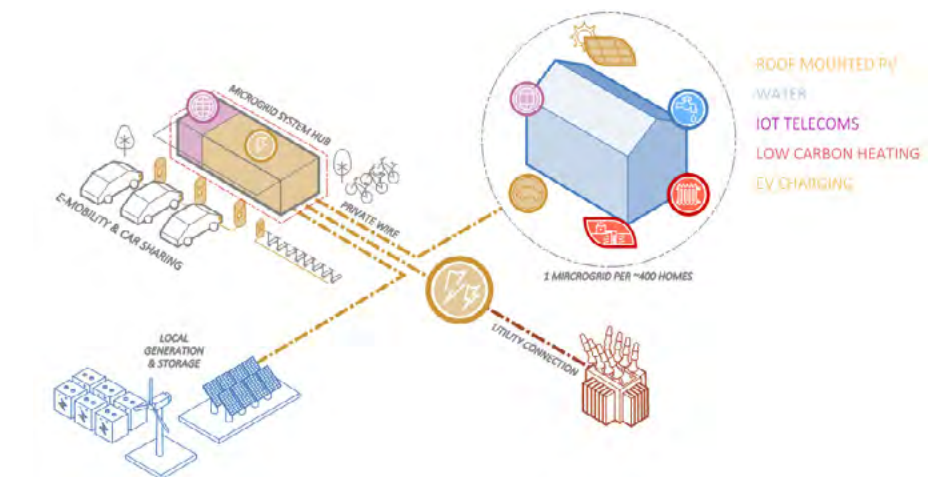


Fig 72 Residential Micro-Grids system

## 23 ECOLOGY STRATEGY

### 23.1 Ecology context

#### 23.1.1 Existing Biodiversity Context

The masterplan sits on the east edge of Norwich local authority, comprised of four sites bisected by the Rivers Wensum and Yare.

The Deal Ground site is largely made up of Carrow Abbey Marsh County Wildlife Site (CAMCWS) which contains areas of priority fen habitats, broadleaved woodland and a complex ditch network. A known bat roost is also present within a brick kiln within CAMCWS. The remainder of the site is a mix of recently cleared woodland and scrub habitats, scrub and bare ground. The River Wensum abuts the north site boundary with the River Yare abutting the east and south site boundaries.

The May Gurney site is south of the River Yare, made up of developed land with recently removed woodland and scattered areas of scrub and grassland. The River Yare abuts the site along the north and west boundaries.

The Carrow Works site contains several areas of native broadleaved and mixed woodlands, which connect to the wider landscape to the south. The remaining site is largely amenity planting and built

form. The River Wensum runs adjacent to the north site boundary.

The Utilities site is made up of a previous power plant with two blocks of semi-natural broad woodland to the north and along the south boundary, a mix of introduced shrubs, waterways, areas of scrub. The site is abutted by the River Wensum along the south and west boundaries.

#### 23.1.2 Relevant planning policy and frameworks

Nationally the proposed master plan needs to be compliant with the current iteration of the National Planning Policy Framework (NPPF), which states development should seek to protect, enhance and minimise impacts to biodiversity where possible, while also providing net gains in biodiversity.

As a whole, the master plan is largely within the City of Norwich Local Authority with two sections also in the Broadlands LPA and South Norfolk LPA. As such development must be compliant with all relevant planning policies for each authority as well as being compliant with the joint strategy for all three LPAs. The focus of these plans is to protect ecological resources, provide ecological networks and net gains for biodiversity.

The Environmental Bill is also currently in its final stages of amendments. This bill focuses on the protection and preservation of biodiversity and is set to mandate that all development should achieve 10% biodiversity net gain. As such, development should be designed to achieve a net gain.

The NPPF is likely to change however once the Environment Bill is passed and it too is expected to stipulate 10% net gain for all development.

The allocation offers and opportunity to design the development to the standards of Building with Nature which seek to create multifunctional green infrastructure benefiting both people and biodiversity.



Riverside ecology, River Lea

### 23.1.3 Ecology Opportunities and Constraints

The master plan offers an opportunity to enhance both the River Wensum and Yare by providing riparian habitats to improve the waterways and provide a range of benefits for biodiversity and new and existing local residents.

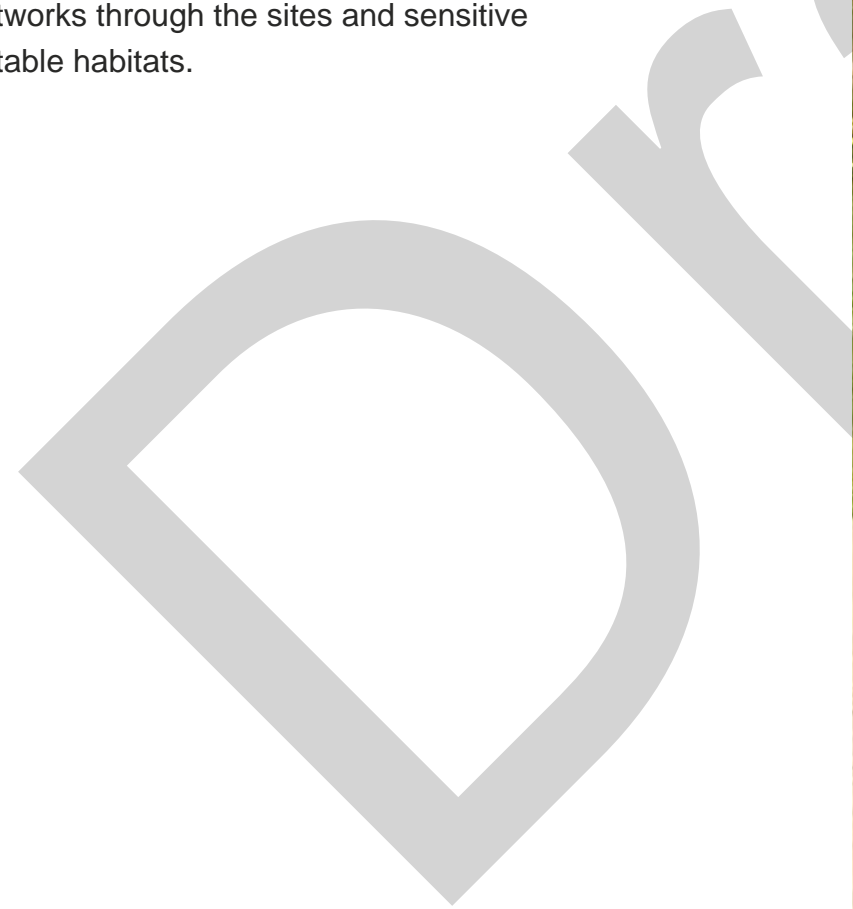
The areas of woodland on all sites should be retained where possible and enhanced through suitable native planting and more appropriate management regimes. Careful management would allow these areas to be utilised for recreation by residents and deliver gains for biodiversity .

CAMCWS will be retained as part of the proposals. The allocation offers an opportunity to enhance the CWS through favourable management of the waterways and fen, while also incorporating features such as boardwalks, signage and fencing to allow CAMCWS to be utilised recreationally as a nature reserve while retaining and enhancing where possible its biodiversity value.

The development offers the opportunity to create a complex matrix of green/blue infrastructures which combined with species-specific enhancements and connections to retained habitats will provide

multiple functional green spaces for both biodiversity and recreation, while also delivering net gains and other functions such as climate change resilience, drainage functions and landscape enhancements.

There is potential for a range of protected species across all the sites, which could be impacted by the proposed development. Overall, however impacts on protected species can be mitigated for through retention of habitats, multi-functional green infrastructure, sensitive design creation of ecological networks through the sites and sensitive lighting of suitable habitats.



Queen Elizabeth Park, London - riverside landscape as recreation and ecological amenity and flood mitigation

# CHARACTER AREAS

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# 24 CHARACTER AREAS

## 24.1 Places of character

This section of the document will describe in more detail the various places and neighbourhoods – character areas – that delivery of the masterplan framework will create across the East Norwich Masterplan area.

### East Norwich - a new quarter

The preceding site-wide strategies provide a site-wide masterplan framework for East Norwich. Whilst new connections are proposed to radically improve the links between the area's different parts, the stark and stimulating environmental and contextual contrasts between these different parts of the masterplan area will remain. These contrasts play a hugely significant role in making the area as a whole so special.

As phases of the masterplan are realised, the East Norwich masterplan area will be knitted into the wider city network. These new links and connections provide exciting opportunities for those who live, work and visit the city to enjoy a strengthened relationship between the city and the Broads.

Four distinct, discrete but connected character areas emerge – with each being addressed in turn. Buildings and landscape play a critical role in establishing character. But it is people and their activities – living, playing, working, making, learning – which will bring these character areas to life.



Fig 73 Illustrative landscape masterplan

### 24.2 The Character Areas

Four character areas have been identified, as follows::

- **Waterside East**
- **Carrow Works**
- **Waterside North**
- **The Villages**

Plans, axonometric views, artist's impressions and precedent images are presented here for each area to help convey the opportunities they each present. The plans and views are all based on the site-wide masterplan framework outlined in the preceding chapter.

The selected precedent images demonstrate how buildings (their scale, form, materials and functions) and spaces (their scale, materials, relationships and features) have combined to create successful places which provide a useful reference point for the Each Norwich Masterplan's character areas.

Each area has been explored and illustrated in the following sections by urban concept, land uses, scale, density and form and public realm and spaces

Fig 74 Illustrative character areas plan





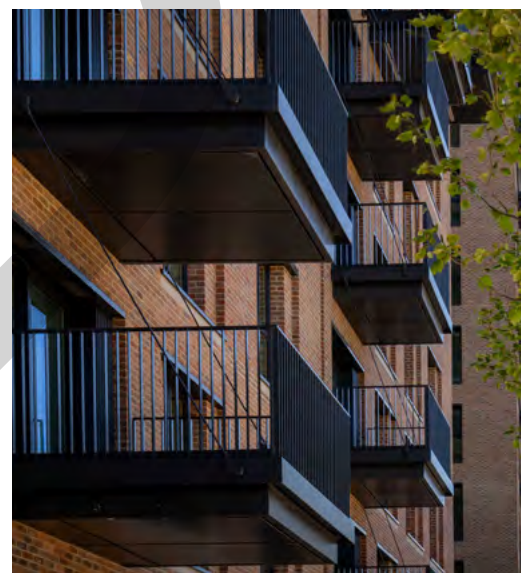
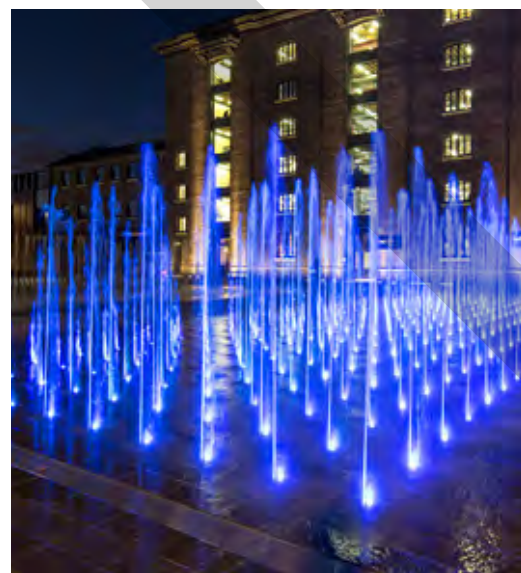
### 24.3 Waterside East

Waterside East will be an extension of the city's Wensum waterfront – with a warehouse character, historic conversions and new buildings, and a range of activities and uses all connected by an attractive riverside walk. New bridges will support new connections between the sites and the wider city. The river itself will emerge as a focus for recreation and leisure-based activity, with new moorings and facilities. Interventions along its length will be introduced to improve the river's ecology.

- 2 Paper Mill
- 3 Carrow Works
- 4 The chimney
- 5 Carroy Quay
- 6 Mustard Seed Building
- 7 Trowse Rail Bridge
- 8 Underpass
- 9 The Utilities Site
- 10 Deal Ground
- 11 Carrow Yacht Club



Fig 76 Existing location plan of Waterside East



24.3.1 **Urban concept**

Waterside apartments, historic building conversions, mixed use buildings directly addressing the river – connected by riverside walks and spaces and enlivened by riverside moorings and an improved riverside ecology.

The east-west connection from Paper Mill to Whitlingham Country Park provides a safe and legible route across the sites forming communities on both sides via New Carrow Footbridge, Carrow Link, Deal Bridge and Whitlingham Footbridge.

Close interaction with the surrounding buildings that face and frame the riverside is crucial to create an accessible and welcoming public amenity. It is essential where possible to face and celebrate the River Wensum and Deal Basin.

The southern riverside through Carrow Works has a warehouse character, historic conversions, new buildings, a range of activities and uses, all connected by an attractive partial riverside walk.

A hierarchy of new public spaces will be created along routes that help to define gateway locations, nodes of commercial / community activity, or where green links and parkland intersect. These spaces will be designed as public squares, with treatments helping to reduce the impact of traffic, promote pedestrian and cyclist priority and provide space for active building uses to spill out onto the street.



Fig 77 Indicative urban concept plan of Waterside East

- gateway
- key access point
- public square
- shared surface
- home-zone
- development plot
- building of heritage

24.3.2 Land use

As well as physical connections it is important for design strategies to help unify the two sides of the river and underline the role of both as a centre of active community use in the wider area.

The primary route will be lined with active ground floor uses which would bring life and movement throughout the day and into the evening. The route connects two clusters of non-residential uses at the western edge next to Paper Mill and another cluster near to the underpass and Trowse Rail Bridge.

These mixed-use clusters in Zone A will host flexible spaces to support small and medium enterprises and co-working spaces with ancillary retail. These smaller units can help new businesses adapt to flexible working patterns evolved through the pandemic.

The mixed-use clusters in Zone B will host a mixture of creative and cultural industries with working and exhibition spaces. The mixed use cluster in Zone C will complement the river with river-based activities such as a boat house with leisure facilities, a cafe and bar space for visitors and locals.

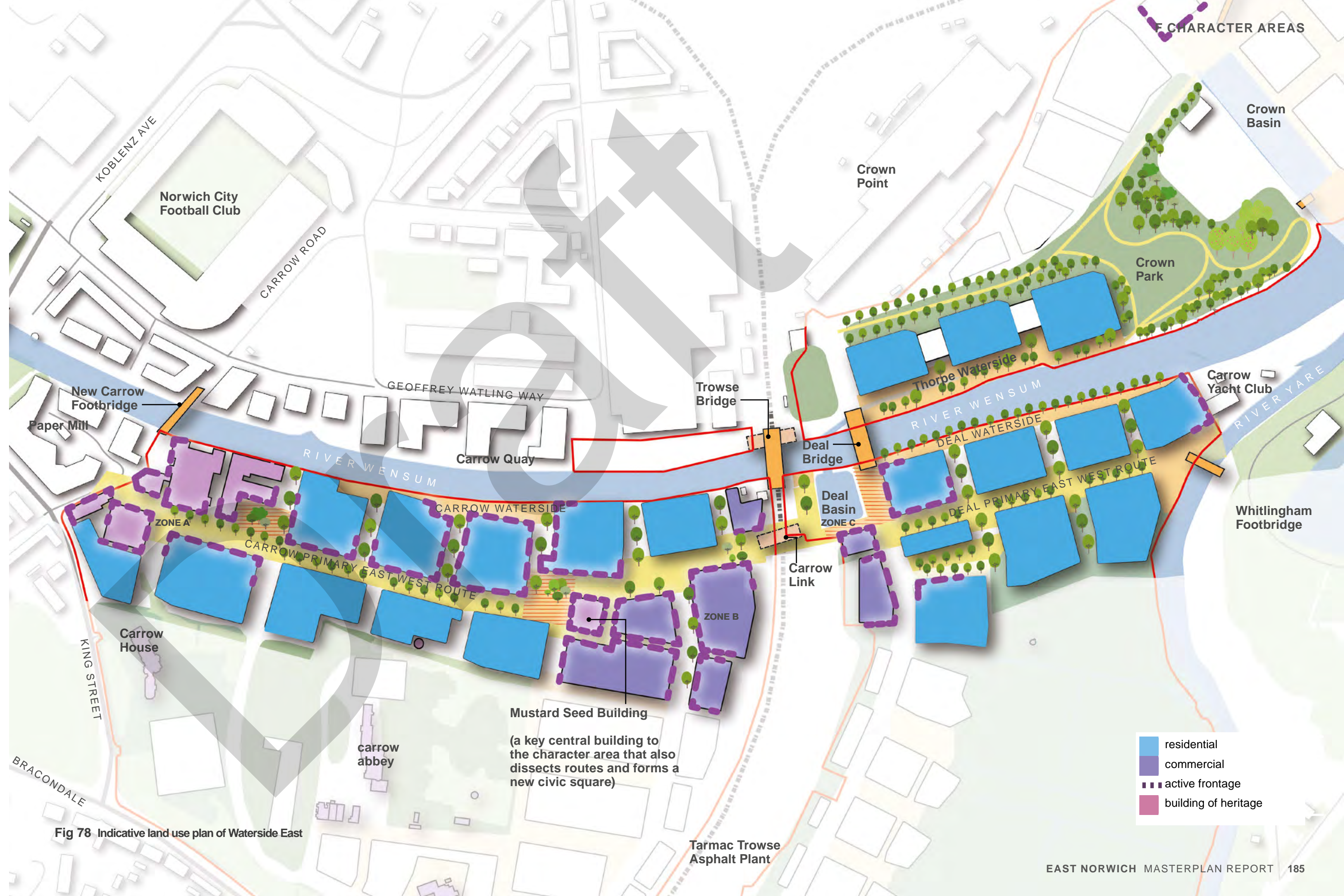


Fig 78 Indicative land use plan of Waterside East

### 24.3.3 Scale, density and form

Waterside East will be a high-density neighbourhood with apartments benefitting from a riverside setting and vibrant urban character. A mix of building heights will create variety to the skyline and enable penetration of daylight and sunlight into open spaces between.

Residential density in Waterside East decreases incrementally as it progresses south towards the abbey and school in Carrow Works. The least constrained and sensitive area is the eastern end of the Utilities site which was once home to two of the city's power stations. This part of the site can therefore support slightly larger buildings, set back from the river front.

The Waterside East area will be appropriate for a range of types of building, from higher density perimeter blocks along the riverside to mixed blocks which help to transition towards the more historically sensitive Carrow Works area to the south.



Fig 79 Indicative heights plan of Waterside East

24.3.4 **Public realm and public spaces**

The railway cuts through the development creating a potential barrier between the sites. By improving the existing and historical underpass, Carrow Link, between Carrow Works and The Deal Ground, the severance of the railway is then addressed by high quality landscaping, connecting key public spaces. This pedestrian and cycle link will be well lit and a possible location for artwork by local artists.

The new bridges along Waterside East form critical links in a chain of public spaces facilitating a convenient connection through the heart of the development.

The Deal Bridge is also a public space in its own right, capable of accommodating a range of water based activities. In addition to the Deal Bridge, a further pedestrian bridge is located to the east; Whitlingham Footbridge and a new pedestrian bridge to its west; New Carrow Bridge, both also providing new cycle connections across the east of Norwich.

The primary route will be a shared surface prioritising a potential new bus route across Carrow Works with pedestrians and cyclists. Vehicular usage should be significantly reduced for residents and servicing only and therefore this is not an intended through route for vehicles.

Service access to Carrow Yacht Club, originally established by the Colman family itself, must be maintained at all times.



Fig 80 Indicative public realm plan of Waterside East

- ■ ■ water frontage
- ■ ■ park frontage
- green space
- public square
- shared surface
- home-zone
- building of heritage



- 1 Homes with water views
- 2 Public square
- 3 Private podium level gardens
- 4 Mustard Seed Building
- 5 Carrow Waterside
- 6 Potential Mooring locations
- 7 Carrow Garden
- 8 Carrow play area
- 9 Active frontage - restaurants, bars, cafes and shops
- 10 The Chimney
- 11 Carrow Abbey

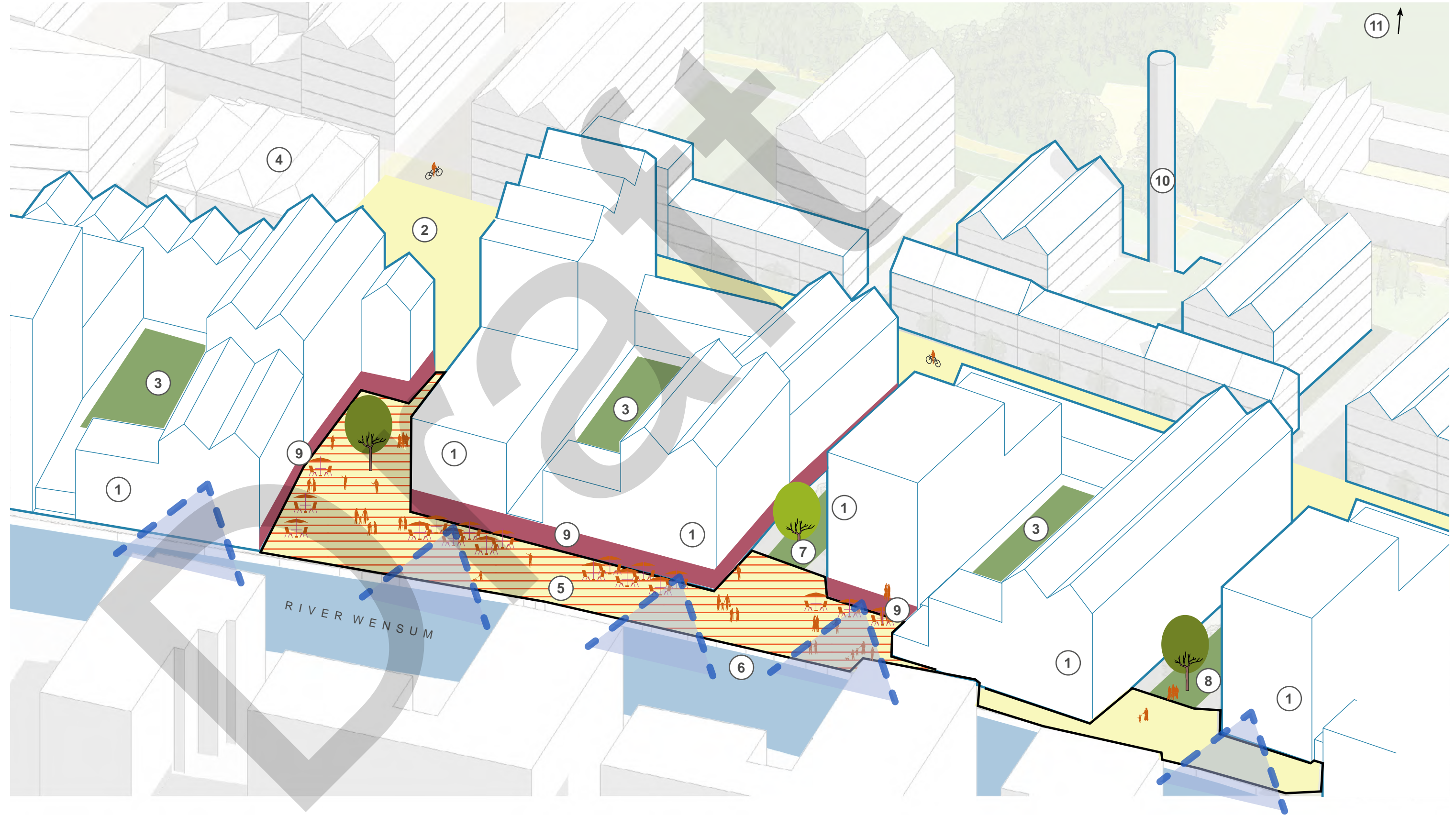


Fig 81 Indicative axonometric of public space A - Waterside East



- 1 Thorpe Waterside
- 2 Deal Bridge
- 3 Deal Basin
- 4 Marina-side
- 5 Boathouse
- 6 Private podium level gardens
- 7 Shared surface street
- 8 Community Square
- 9 Active frontage - cafes and shops
- 10 Deal Waterside
- 11 Woodland
- 12 Trowse Bridge
- 13 Carrow Link

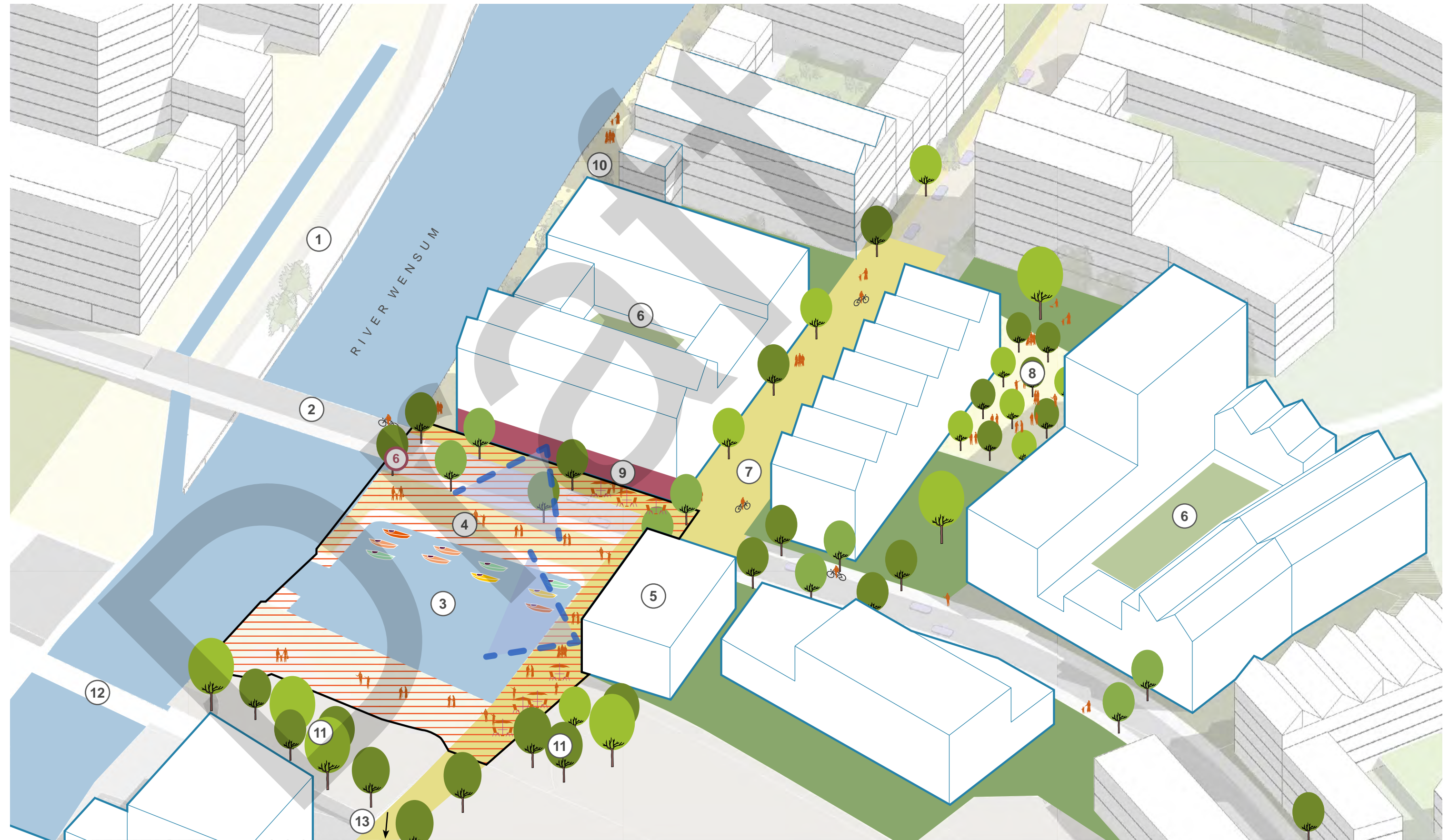


Fig 82 Indicative axonometric of public space B - Waterside East









### 24.4 Carrow Works

The famous Carrow Works site will be recast as a new vibrant, creative, mixed-use quarter – fully integrated with the city of Norwich through the reuse of existing lanes and routes which cross the complex.

The site’s rich collection of historic structures and landscapes will be carefully and respectfully repurposed and integrated into this new city quarter. The area will be brimming with character, activity and variety – where contemporary architecture complements the refurbishment of some of the city’s most important historic structures, framed by the site’s mature trees and refurbished historic landscapes

- 1 Carrow House
- 2 Paper Mill
- 3 Carrow Works
- 4 The chimney
- 5 Mustard Seed Building
- 6 Trowse Rail Bridge
- 7 Carrow Link
- 8 Tarmac Trowse Asphalt Plant
- 9 Carrow Abbey
- 10 Bracondale Roundabout
- 11 Diamond Jubilee Fire & Rescue Service

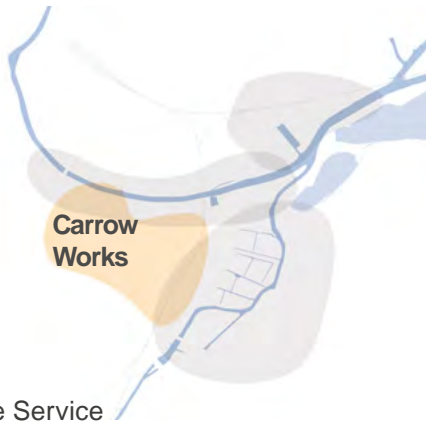


Fig 83 Existing location plan of Carrow Works



24.4.1 Urban concept

Nestled between the river, the railway and the historic axis of Bracondale, a series of development opportunities emerge between and around the area's mature woodland and landscapes and Carrow Works' important built heritage assets. Respecting and improving the setting of these existing assets through carefully crafted new developments will deliver a wonderful new and integrated neighbourhood for the city.

With the site's principal access off the Martineau Lane roundabout is retained and recast. The existing loop road that serves the site is also reused allowing Carrow House and Carrow Abbey to sit proudly above its retaining walls below. Links over the road through a pedestrian route and the Rose Gardens footbridge seek to retain the original gardens and enables uninterrupted pedestrian connectivity – reinstating a direct connection between Carrow Abbey and House. This route helps to promote walking and cycling connections between King Street and Carrow Works.



Fig 84 Indicative urban concept plan of Carrow Works

- gateway
- key access point
- public square
- shared surface
- home-zone
- development plot
- building of heritage

24.4.2 Land use

A mix of new uses will be introduced, enabling Carrow Works to function as a vibrant neighbourhood serving the community needs of new and existing residents in the area. New homes of varied types and tenures will be complemented by community uses including a new 2FE primary school and health facilities. Other employment uses will add to the mixed character of this environment with a yard typologies towards the north (Waterside East) allowing workspace to spill out onto the street.

The southern part of the area, nestled between mature landscaping and re-purposed heritage buildings, will emerge as a community hub. This presents opportunities to re-purpose the original stable cottages that was once inhabited by a nursery. Refurbishment of the former rail station and pumping stations could also enliven the Bracondale axis with community and civic uses towards Trowse village.



Fig 85 Indicative land use plan of Carrow Works

- residential
- commercial
- active frontage
- building of heritage

### 24.4.3 Scale, density and form

Improving the setting of the area's heritage assets is critical. Built on the 12th century foundations of Carrow Priory, Carrow Abbey is a 16th century building with later additions, two to three storeys in height with steeply pitched roofs and set as a centrepiece in its own grounds.

The scale and massing of new development in the vicinity of the Abbey, and other heritage assets, must take respect the scale and form of these important buildings. Smaller scale and lower density plots are located on the southern and eastern edges of the site, featuring low rise buildings, steep roof pitches and almshouses to echo the adjacent suburban context and create more intimate family housing lined streets.

Medium scale courtyard blocks are located at the north of the site which define the edge of the primary route and waterside, all with podium communal residents' gardens. These too would have pitch roofs and with taller elements at gateways, public spaces and riversides to create attractive markers. Mixed used buildings will complement the housing typologies with similar forms and roofscapes.



Fig 86 Indicative heights plan of Carrow Works

24.4.4 Public realm and public spaces

The ambitions of the project overall extend beyond the site boundary, seeking to stitch together the eastern and western parts of Norwich by creating new links, lanes, underpasses and bridges. This will result in East Norwich being fully integrated with the city as a whole. Public realm will link different development phases with new routes, existing buildings and historic streets.

The primary route that links the western city of Norwich to the sites and the east of Norwich forms the backbone of connectivity, however there are more intimate scales of streets and spaces that are formed on the eastern side of this character area as well as a trail of history through the gardens of the Abbey, the chimney and Carrow House to King Street.

The eastern residential home-zone streets create an area of calm and quiet, limiting vehicular activity and prioritising family play with an accessible route for pedestrians and cyclists from the civic square, next to the refurbished Mustard Seed Factory to the potential school location. The length of this route is also lined by the original Abbey garden walls to the west of the family terraced houses, creating a safe and high-quality landscaped path, ideal for connecting the riverside to the community hub. The town houses activate the non-vehicular route and the wall naturally prevents eroding into the gardens of Carrow Priory and its ruins.



Fig 87 Indicative public realm plan of Carrow Works





- 1 Carrow Waterside
- 2 Private podium gardens
- 3 Public civic square
- 4 Mustard Seed Factory
- 5 Active uses
- 6 Primary route
- 7 Link to north - south walled foot and cycle path
- 8 Yards space
- 9 To Carrow Link
- 10 Home zone street
- 11 Mature abbey garden woodland

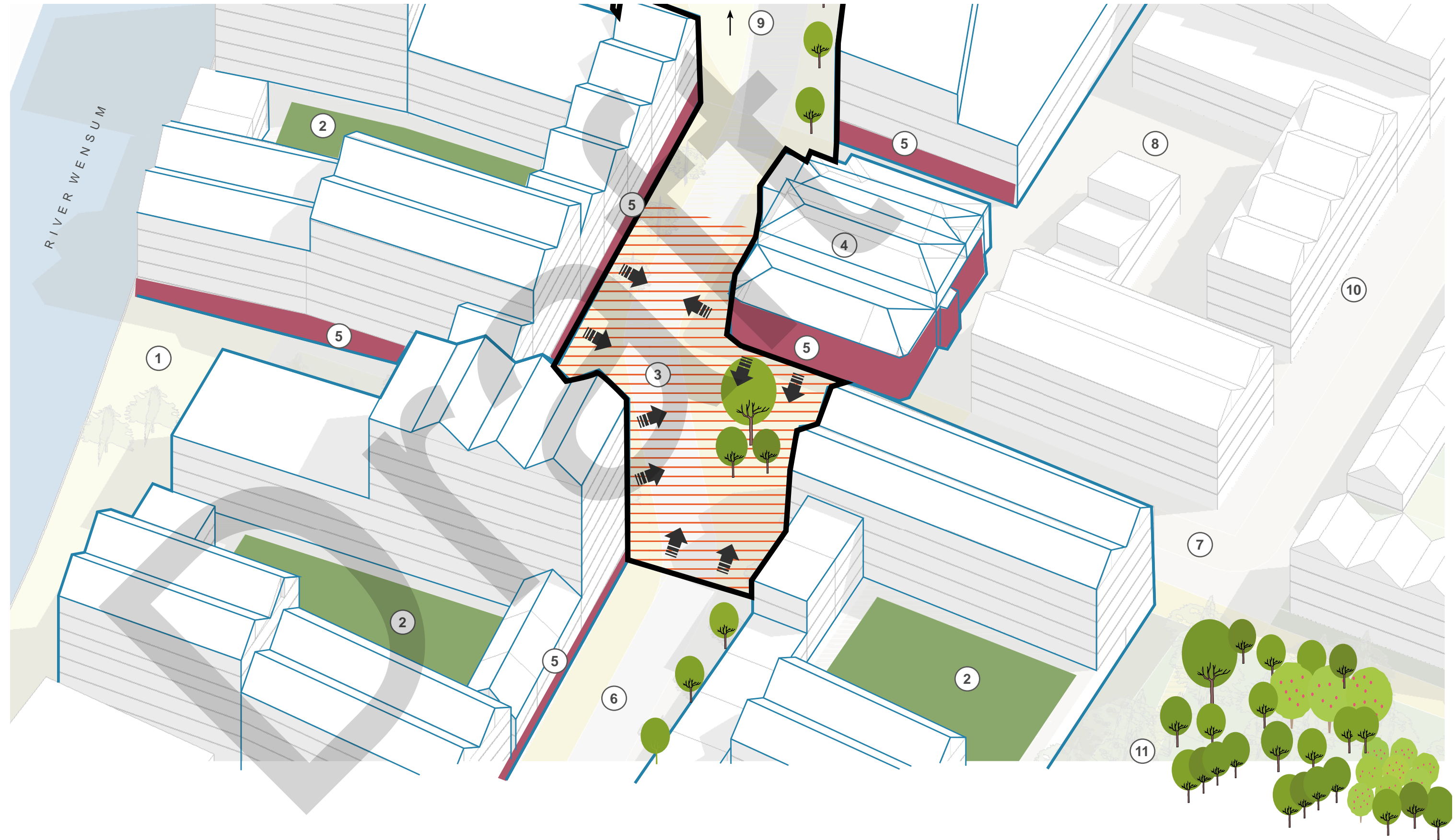


Fig 88 Indicative axonometric of public space A - Carrow Works



- 1 The lodge, garage & gardeners cottage
- 2 New premium housing
- 3 Rose Garden
- 4 Historic trail
- 5 Abbey mature woodland
- 6 Historic bridged and stepped trail connection to the riverfront via The Chimney
- 7 Carrow Abbey
- 9 New events and functions building
- 10 Abbey Gardens
- 11 Carrow Priory (ruins)
- 12 North - south walled foot and cycle path
- 13 Quiet terraced home-zone streets
- 14 Private Gardens
- 15 Homes with park frontage

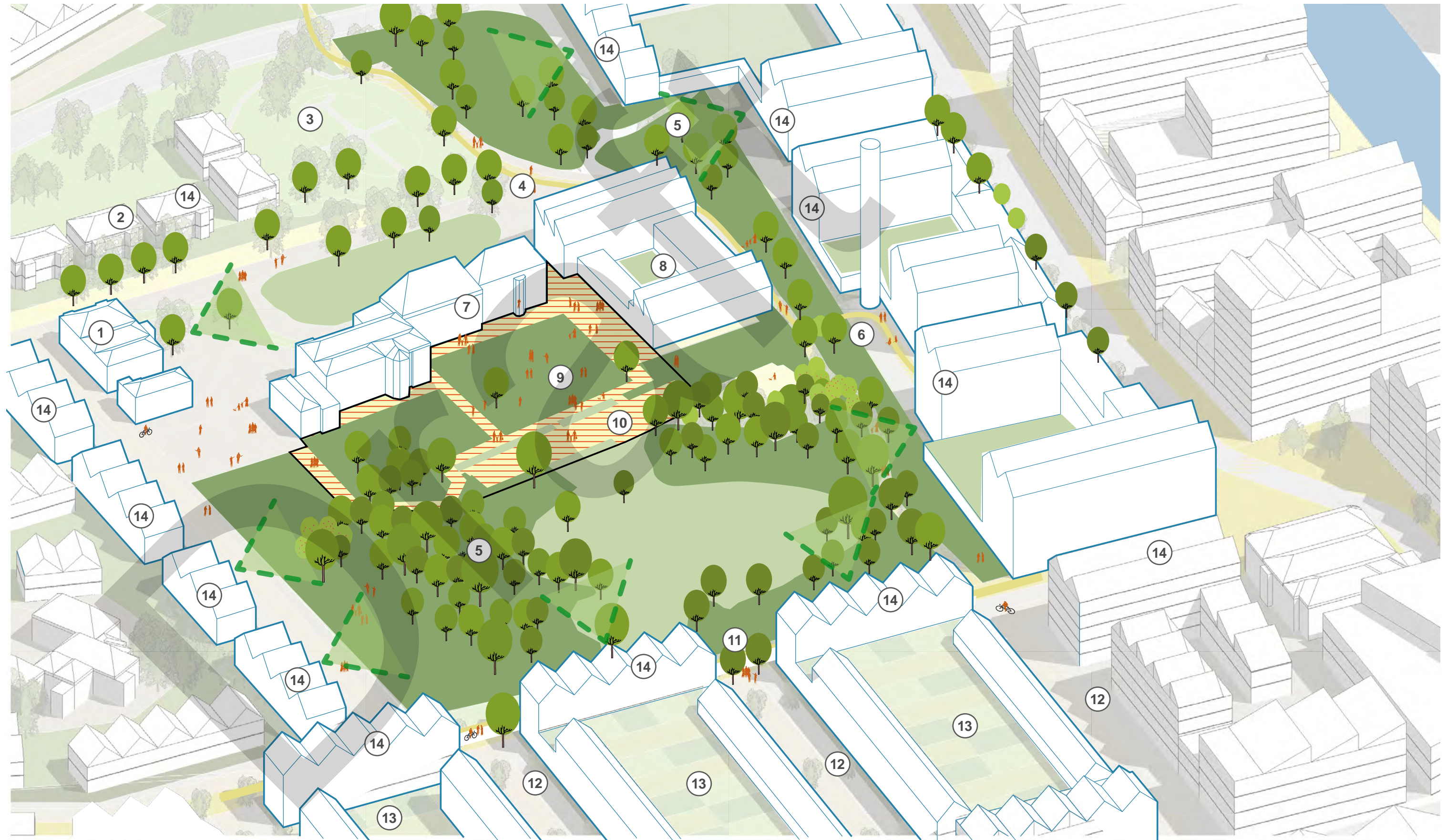


Fig 89 Indicative axonometric of public space B - Carrow Works





- 1 Former Rail Station
- 2 Shared surfaces combining community uses through public realm treatments
- 3 public realm treatments
- 4 Fire Station
- 5 Parking and restricted drop off areas
- 6 Stable Cottages
- 7 Main vehicular site entrance
- 8 Primary school play area
- 9 Primary school
- 10 Active frontages - convenience shops, pharmacy & cafes
- 11 Private Gardens
- 12 Almshouses
- 13 Mature woodland of Abbey Gardens
- 14 Mature woodland of Carrow Works perimeter gardens

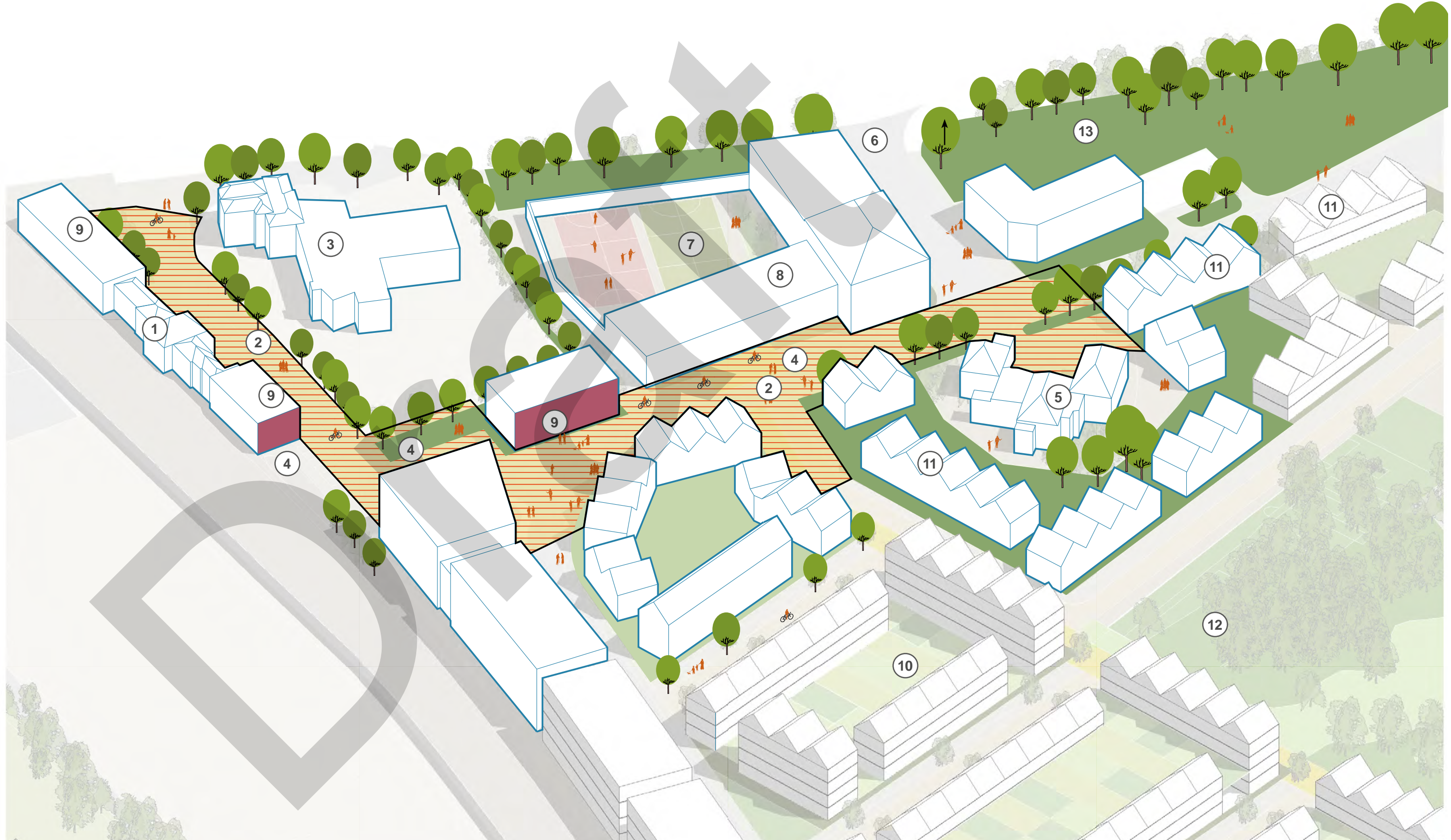


Fig 90 Indicative axonometric of public space C - Carrow Works



### 24.5 Waterside North

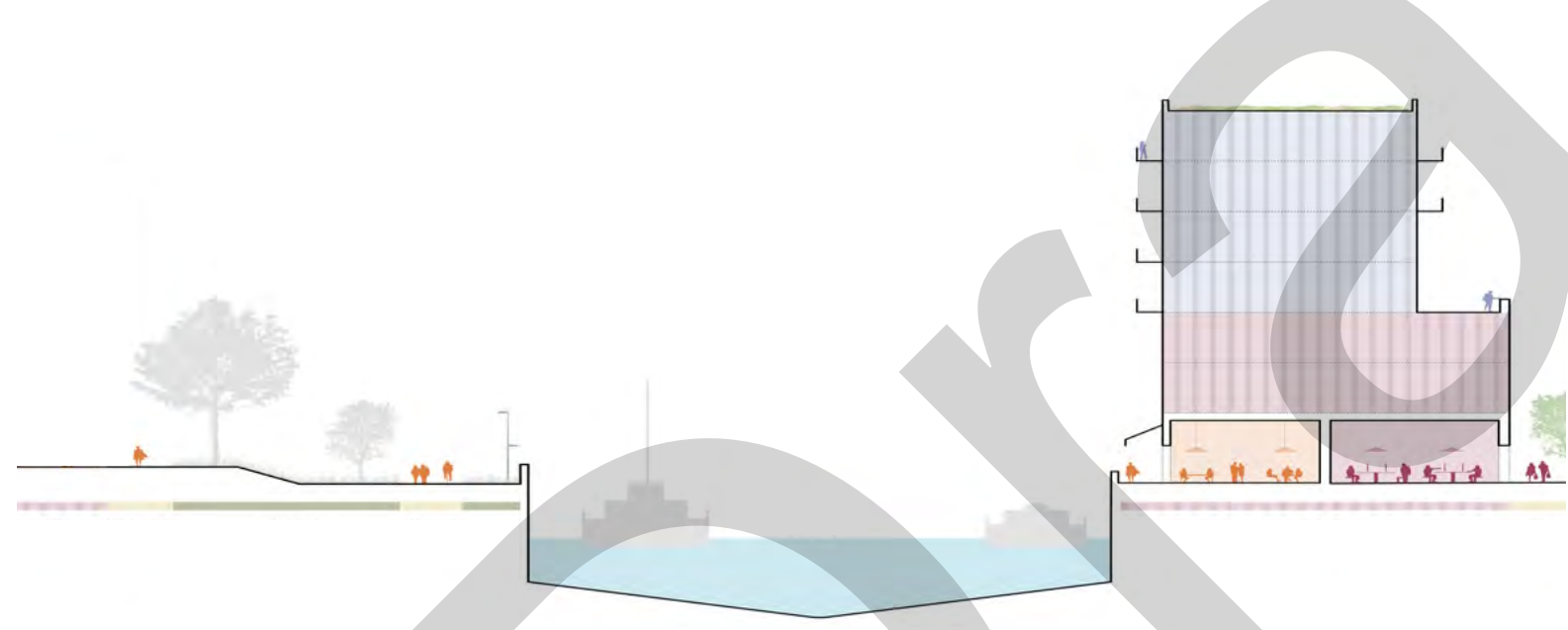
Once the powerhouse of Norwich and with a magnificent south facing Broadland outlook, the Waterside North area is only a short walk to Norwich Station and the city centre. A new marina will be the focal point for a new mixed neighbourhood and will be a major new river gateway between the Broads and the city.

Development of the site itself began in the 1920s with the construction of the coal fired Thorpe power station and later joined and replaced in the 1960s by a new gas-oil fired power station constructed at the western end of the site. Both power stations were served by the railway and river although they were demolished in the 1980s. The former 1960's Cremorne Lane Gas Works, was also demolished in more recent times.

- 1 Cremorne Footbridge
- 2 Crown Point Rail Depot
- 3 Thorpe Power Station (UKPN)
- 4 Water channel
- 5 Carry's Meadow
- 6 Cremorne Lane
- 7 Salisbury Road
- 8 Whittingham Little Broad
- 9 Whittingham Great Broad
- 10 Former Cremorne Lane Gas Works



Fig 91 Existing location plan of Waterside North



24.5.1 Urban concept

The block structure and layout of Waterside North must take account of below ground services of varying depth and sizes. Many of these services must be retained to avoid the substantial cost of diversion, in particular very high voltage electricity cables. The 25m exclusion zone around the Thorpe Local substation rules out residential development around the facility's perimeter.

However, given the position of the site opposite the confluence of the rivers and the historic Carrow Yacht Club, landscaping and a potential new boating marina facility would bring far reaching and strategic economic, environmental, leisure and tourism benefits to the Norwich region and the Norfolk Broads. Further benefits of the marina include some potential flood mitigation for the area as a whole and it could deliver requisite compensatory facilities if access to the Port of Norwich was restricted by the provision of new fixed river crossings. Whilst further work will be required on testing the viability and delivery implications of a marina in this location, the potential benefits it could bring would be far reaching and significant.

The Crown Point rail depot and adjoining Yarmouth main line are in most places screened from public areas within the Park and residents in the east and south of the area. Employment uses alongside the rail depot would help to mitigate the impacts of important ongoing operations at this key rail depot facility.



Fig 92 Indicative urban concept plan of Waterside North

- gateway
- key access point
- public square
- shared surface
- home-zone
- development plot
- building of heritage

24.5.2 Land use

New bridges across the River Wensum will support new connections between the sites and the wider city. The river itself will emerge as a focus for recreation and leisure-based activity, with new moorings and facilities strengthening active use of the river and marina. Interventions along its length will be introduced to improve the river's ecology.

Family houses on the eastern edge of the Utilities site could be suitable for a mixed typology of townhouses and mews houses, forming the 'Marina Village'. Serviced apartments available to employees on the northern side of the river, could compliment a mix of smaller mixed tenure apartments on the waterside.

Employment uses next to Crown Point Rail Depot would be suitable for rail-related uses, larger scale employment or institutional uses. It could also be a suitable location for high quality, flexible workspaces that create a new dynamic and innovative sub-regional business hub.



Fig 93 Indicative land use plan of Waterside North

- residential
- commercial
- active frontage
- building of heritage



24.5.3 **Scale, density and form**

Residential densities vary across the development in Waterside North. Density is highest next to the waterside area, east of the Crown Link underpass to Carrow Quay.

Power stations once occupied prominent riverside locations here and the site presents an opportunity to reinstate a prominent series of buildings taking advantage of this magnificent south-facing Broadside setting, that dominated and aligned the river front, last century. Opportunities may exist to reinterpret the forms of some of these large former buildings.

New development is likely to need to raise ground floor dwellings from potential flooding risks. A more formal riverside edge to development would give way to more informal park edge on the north side.

'Marina Village' will be a quieter area for family housing and mooring residents, a mixture of townhouses and 2 storey mews buildings creating intimate streets and spaces and enhancing community interaction.

Employment uses next to Crown Point Depot will be medium to low height commercial buildings orientated by the lower height towards the park and buffering the residential development. Access roads for the depot and commercial buildings should be shared to avoid disconnection between the complimentary services and reducing disruption to quieter spaces.



Fig 94 Indicative heights plan of Waterside North

24.5.4 Public realm and public spaces

The surrounding rail infrastructure does not allow for vehicular connections to provide direct access the site. However, there are opportunities to create important pedestrian and cycle linkages to the city. A route exists beneath the northern Trowse bridge underpass although site security issues for the adjacent uses would need to be established. To the north, the existing bridge structure to Cremorne Lane would be retained for pedestrian and cycle uses. The area would then emerge as a key intersection between all sites, enclosed by a welcoming leisure basin and waterside apartments.

Carved out to a lower level to act as critical flood mitigation, the northern riverside builds on the landscaped tow-path existing at Carrow Quay, redefining its edges, slopes, and spaces towards the proposed north eastern waterside section of the masterplan.

The continued link towards the park of the Waterside North riverside will be a focus of active leisure use and family-oriented amenities such as playgrounds, wetland and nature education areas, walking paths, cycle tracks, and flexible planted and lawned areas.

The marina will be home to a variance of mooring owners and visitors, as well as creating a highly valuable location for waterside living.

Crown Park becomes the heart of all development in this character area to stitch together a mixed and vibrant community. Planted terraces, steps and slopes form a vibrant riverside location.



Fig 95 Indicative public realm plan of Waterside North

- water frontage
- park frontage
- green space
- public square
- shared surface
- home-zone
- building of heritage



- 1 Upgraded Cremorne Pedestrian and Cycle Bridge
- 2 Equipped play area
- 3 Marina Village - shared surface streets
- 4 Homes with water views
- 5 Green connection to Crown Point Nature Reserve
- 6 Private gardens
- 7 Fruit trees and productive landscape for residents
- 8 Crown Point Nature Reserve
- 9 Marina pavilion
- 10 Marina lock gate and footbridge
- 11 Boating marina
- 12 UKPN Power Station
- 13 Parkland

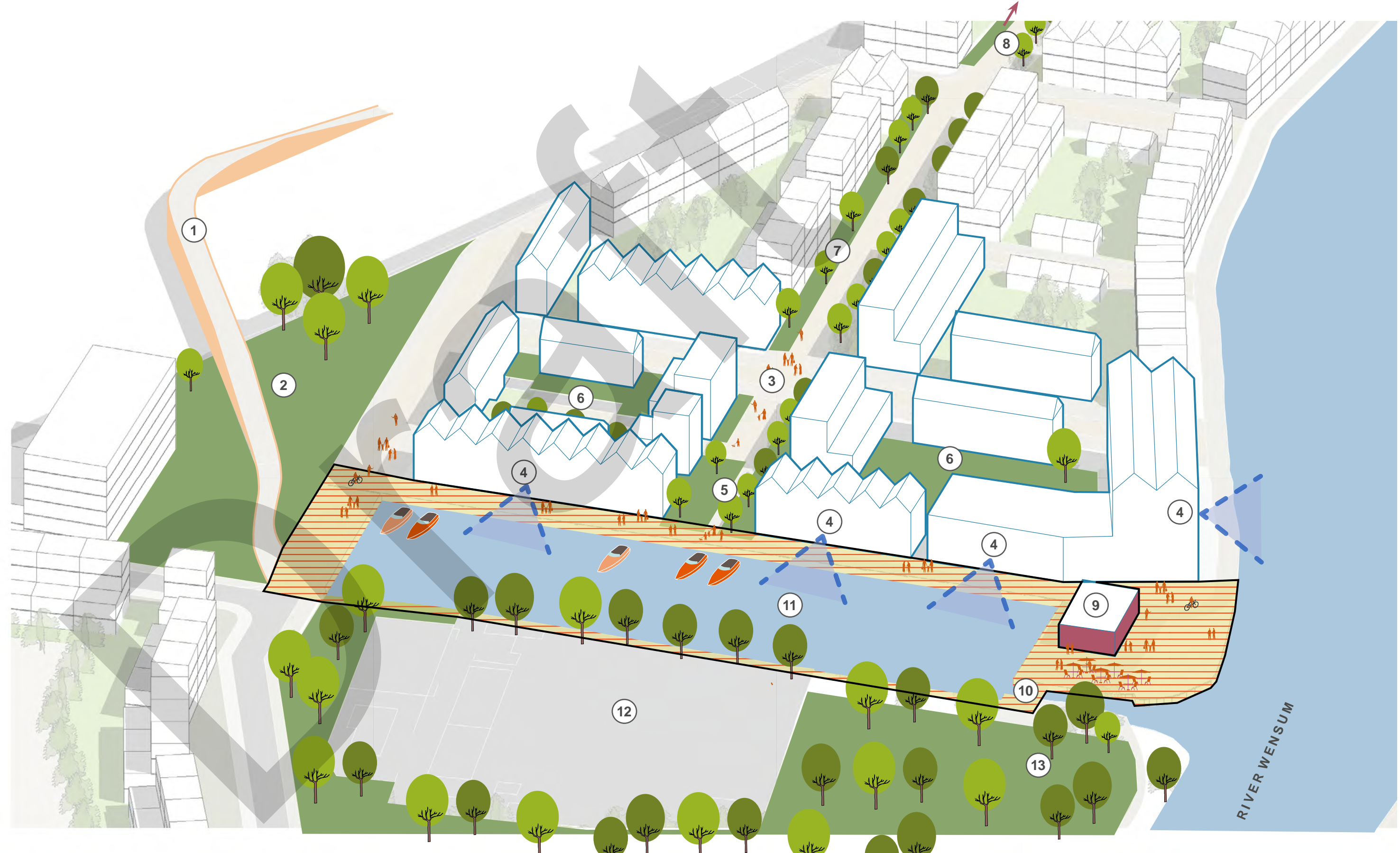
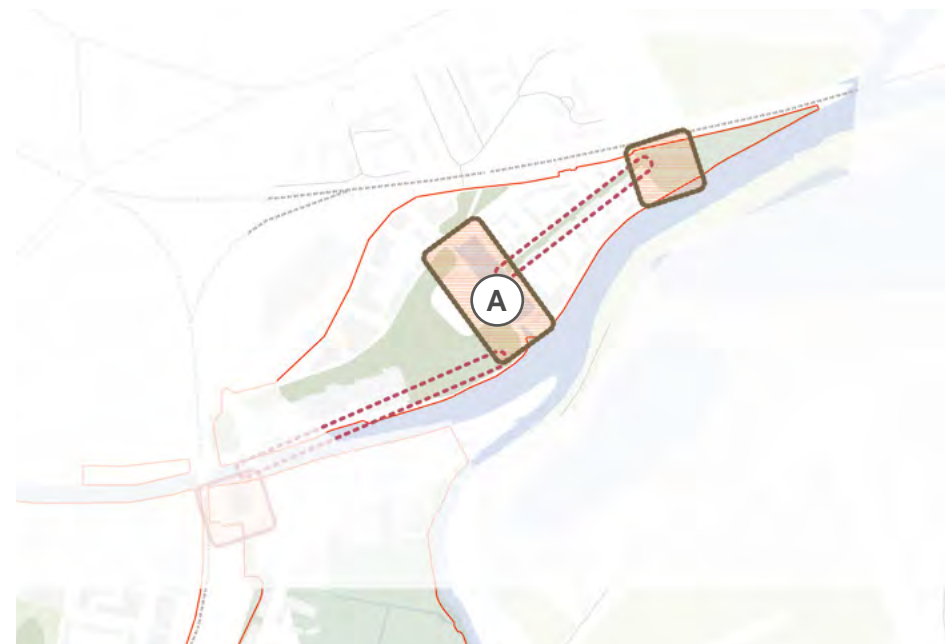


Fig 96 Indicative axonometric of public space A - Waterside North





- 1 Parkland offering a variety of green amenity spaces, both naturalised and recreational
- 2 Waterfront spill out area for cafes, bars, restaurants
- 3 Active frontages - cafes, bars, restaurants
- 4 Waterside apartments with river views
- 5 Upper level terraces linking the waterfront to the park above podium levels
- 6 Private podium level gardens
- 7 Moorings
- 8 Terraced, stepped and planted waterfront
- 9 Waterfront foot and cycle path
- 10 Deal Bridge
- 11 Crown Link underpass to Carrow Quay

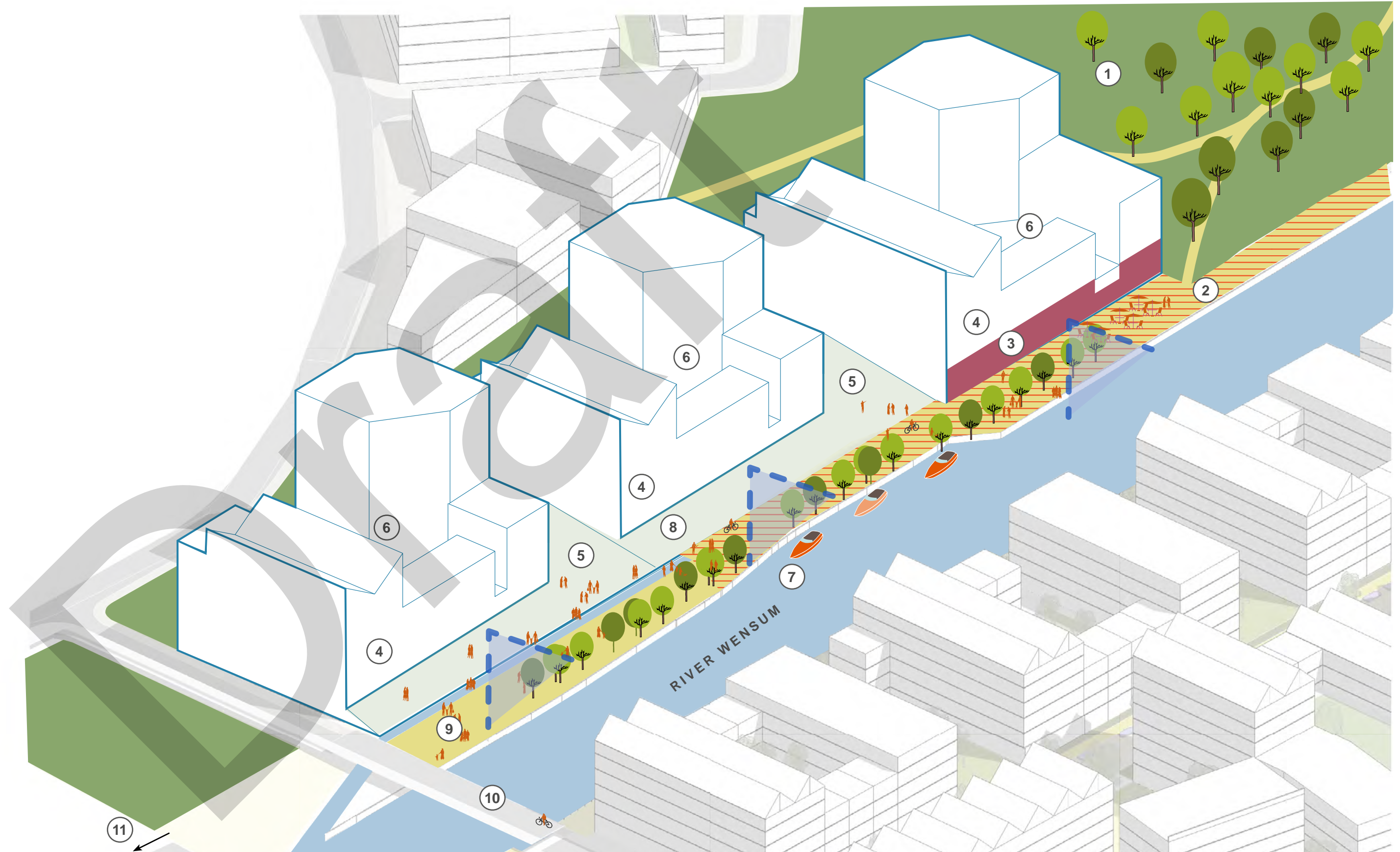
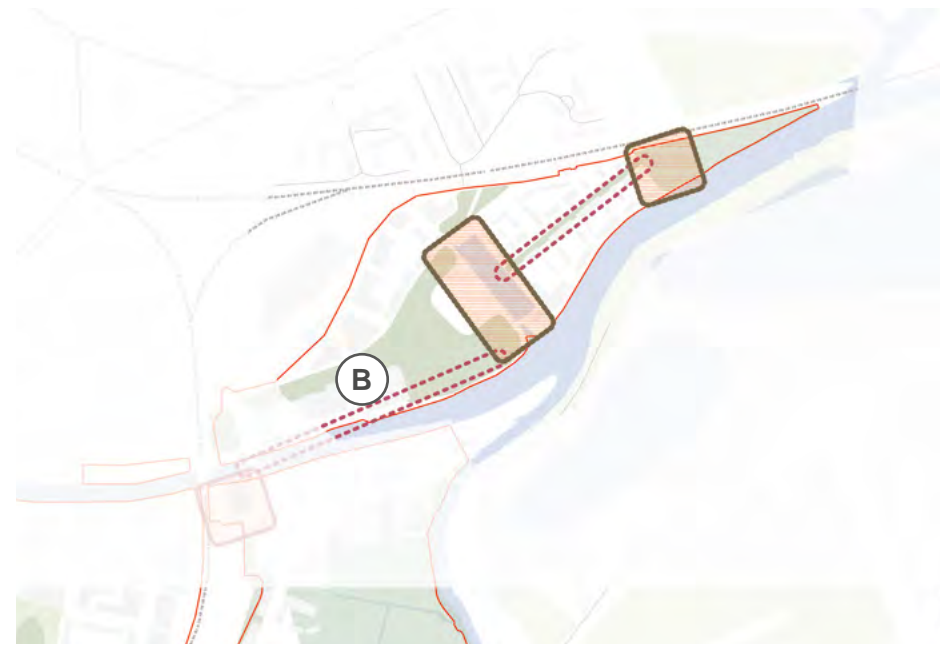


Fig 97 Indicative axonometric of public space B - Waterside North



## 24.6 The Villages

Sensitively designed and environmentally friendly new homes will provide a family-friendly environment with great access to the Broads whilst only a short cycle ride from the city centre.

The area's special wetland character will provide a beautiful natural backdrop to this collection of new neighbourhoods for Norwich. The character of The Villages will respect the special qualities of the historic villages around the Trowse area whilst remaining distinct from them.

Connections between public squares, greens and mews spaces will link the communities together to form networks of sustainable places to live, play and enjoy.

- 1 Trowse Rail Bridge
- 2 Tarmac Trowse Asphalt Plant
- 3 Deal Ground
- 4 Bracondale
- 5 Water treatment works
- 6 Fire station
- 7 May Gurney
- 8 Trowse Millgate
- 9 Whitlingham Country Park
- 10 Former Pumping Stations



Fig 98 Existing location plan of The Villages



### 24.6.1 Urban concept

The vision for The Villages is to create a special and distinctive community; a popular and sustainable place to live and relax.

The proposals will create a range of family homes and community activities, all set within a beautiful landscape. The proposals will also encourage active lifestyles and an inclusive sense of community. To the north and south of each village "green corridors" with dispersed tree planting will provide a landscaped setting for cycle and pedestrian links and will partly screen the development through this main spine road.

The form of the development will be influenced by, and respond positively to, physical and contextual factors including the County Wildlife Site east of Deal Village.

The residential areas of the villages are arranged around a network of varied streets and spaces which will provide permeability and connections through the site with preference given to creating a safe and family-friendly environment.



Fig 99 Indicative urban concept plan of The Villages



24.6.2 Land use

The Villages will be a collection of residential neighbourhoods, providing a range of house types and tenures within environmentally sustainable new homes. These new residential neighbourhoods will be supported by existing and new clusters of community facilities – a shop, small cafe and bakery, hairdressers, post office and public house.

These kinds of facilities could be situated within the greens and the former pumping station buildings in the south of the character area. The framing of the buildings within the area of the former pumping stations creates a civic feel with a welcome space away from the Bracondale axis. These spaces also compliment the connection into Carrow Works and the community hub around the school, nursery and health facilities.



Fig 100 Indicative land use plan of The Villages

24.6.3 **Scale, density and form**

Typically, the most intensive areas of use form around the main 'civic' space of the village greens. Slightly higher density development arranged around well-defined village centres to create an appropriate sense of enclosure and vibrancy.

The density of development decreases away from the centres, reflecting an approach to the edges of villages which fan and open out to the surrounding County Wildlife Site to the east. Larger houses would be well suited to these rural threshold locations.

A variety of house types and arrangements could be used including mews style housing, back to back homes, townhouses, low height apartments, maisonettes and larger family homes. They will come together along varied streets creating beautiful and characterful places to live.



Fig 101 Indicative heights plan of The Villages

24.6.4 **Public realm and public spaces**

Care should be taken to reflect and respond to the existing characteristics of local landscapes through the integration of existing features and creation of sympathetic habitats. The County Wildlife Site in front of Deal Village will provide a unique and ecologically sensitive aspect to the development.

The existing partial woodland character has also informed the masterplan, with extensive tree planting seeking to define the character of new villages and provide an appropriate buffer at boundary points. The proposals are characterised by a significant emphasis of landscape improvements and open spaces which will give the area a unique natural identity and character.

In addition to natural landscape settings, the proposals also include areas of formal outdoor spaces, seated elements for adults and naturalised play areas for local children. The village greens will be a focal point in Deal Ground and May Gurney to collectively congregate residents to the play areas and embrace the successful traits and quintessential characteristics of English villages within the greens.

The shared surfaces connecting family orientated streets with reduced car usage in Deal Village, will be interconnected by a long mews street from north to south, with green view corridors dissecting points along the journey.



Fig 102 Indicative public realm plan of The Villages



- 1 Spine Road connecting Deal, May Gurney and the
- 2 Utilities site.
- 3 Home-zone shared surface family streets
- 4 Mews street
- 5 Buildings orientating and framing the views to the
- 6 County Wildlife Site
- 7 Private generous gardens
- 8 County Wildlife Site
- 9 Pocket park and play area



Fig 103 Indicative axonometric of public space A - The Villages





- 1 Private generous gardens
- 2 Spine Road connecting Deal, May Gurney and the
- 3 Utilities site.
- 4 Deal Village Green
- 5 Deal Village Green community pavilion or bandstand
- 6 Active frontages - cafe, shop, post office
- 7 Woodland
- 8 Homes with water frontages
- 9 May Gurney Village Green
- 10 Drainage channe
- 11 County Wildlife Sitel



Fig 104 Indicative axonometric of public spaces B - The Villages



- 1 Bracondale Bridge
- 2 Active frontages - cafes, bars, bakeries, shops
- 3 Civic space
- 4 Water treatment building
- 5 Former Pumping Station Extension
- 6 Former Pumping Station
- 7 Extensions to line of original cottages
- 8 Former Pumping Station Cottages
- 9 Woodland
- 10 Private Gardens



Fig 105 Indicative axonometric of public space C - The Villages



# DELIVERY STRATEGY





## 25 DELIVERY

### 25.1 Introduction

The concept masterplan has been developed based on a thorough understanding of site constraints, infrastructure needs, market conditions and future opportunities. Through the approach to design and distribution of uses it has been deliberately structured to work with the attributes of each site in order to optimise the deliverability of the proposals from both a practical and financial perspective.

### 25.2 Land uses

Drawing on the analysis of market conditions and economic needs the land use strategy has been developed to both enable delivery in the current context and create the appropriate environment in which new activities can be attracted and delivered over time.

From a residential perspective the mix of houses and flats has been established in order to reflect the patterns of demand within the city's residential market, to make the most of the character and nature of the East Norwich sites and take account of timing and nature of residential development across the city more widely.

The balance between houses and flats is tilted towards the former, reflecting the attractiveness of the location (and the city) to young professionals and families and capturing underlying unmet demand for houses in the urban area.

The provision and location of flatted development makes the most of the East Norwich's unique riverside aspect, setting it apart from most other flatted developments in the city. The scale and nature of these typologies also enable a diverse range of tenure types to be delivered, ranging from build to rent space (which can attract younger people and downsizers) through to retirement living products.

As set out in the preceding section on non-residential uses within East Norwich the masterplan seeks to achieve a balance of workspace, retail, leisure and community facilities that create a vibrant mix of uses that support each other's success and serve the needs of existing communities, future residents and visitors.

The spatial distribution of these uses works with the infrastructure context of each site, seeking to deliver non-residential uses where they can most successfully be accessed and serviced and where they provide a buffer between residential or open spaces and the rail line, Crown Point Depot and the Tarmac LaFarge works. This provides a mutual benefit to both the new communities and the existing business activity – helping to reduce bad neighbour issues and allow both to operate successfully in the future. In turn this supports delivery of the East Norwich ambitions by protecting and enhancing long term operability of key employers such as Greater Anglia, ATB Laurence Scott and LaFarge Tarmac.

The co-location of many activities on the new east-west route helps create the most appropriate setting for each use to succeed and provide a successful trading environment for all types of businesses.

For example, by providing for workspace in an area where there is a vibrant retail and leisure offer occupier demand will be improved, which in turn will improve values and encourage the delivery of space. In reverse, the successful provision of workspace will provide a daytime catchment for retail and leisure/café/dining businesses, broadening their trading opportunities and making them more sustainable. Again this will attract a wider range of demand to support values and aid the viability of development.

Commercial input has helped shape the scale, nature and distribution of uses across the sites, with a deliberate strategy in place to create the right size and nature of space in the right locations, with appropriate servicing arrangements to enable a range of users to operate successfully from the sites.

Taken together these approaches have helped to tune the masterplan to support delivery in the future balancing shorter term commercial considerations with longer term aspirations and opportunities.

### 25.3 Infrastructure

The delivery of the masterplan vision requires new infrastructure to be delivered. The masterplan itself works with the existing infrastructure provision across the sites, seeking to re-use and repurpose as much as possible in order to improve the area's performance from a cost and sustainability perspective.

However, new roads, public transport, bridges, energy, utilities and social infrastructure will all be required to either come before or alongside commercial development to ensure East Norwich is successful and provides a sustainable and high-quality place in the future.

Alongside the built infrastructure further investment is needed to remediate land, manage flood risks and ensure the site delivers a biodiversity net gain. By working carefully with the sites existing assets and character the masterplan seeks to reduce the need for major engineering intervention and instead turn constraints into opportunities to deliver 'productive' uses that can support value generation.

The principles of the masterplan seek to aid delivery of such infrastructure through design measures and uses that form part of the unique

character of East Norwich. For example, the inclusion of marina/basin facilities within East Norwich not only expands the city's relationship with the Broads and creates new employment generating uses it also helps provide flood storage and an improvement to biodiversity in locations where other forms of development would not be possible.

This aids the deliverability of the site as it reduces the need for more costly engineering solutions to flooding in particular that may reduce the capacity of otherwise developable land. The ability to also deliver residential overlooking the marina to the north will also help create an attractive setting that will support demand and values in that location – which will aid viability.

More widely the integration of sustainable urban drainage solutions (such as swales) and the potential to use existing ground and water conditions as part of a future energy network both help future proof the area and support the ability for the masterplan to be delivered over time. Critically, the drainage approach adds significant character and placemaking value to the sites, supporting demand and values across the site.



Fig 108 Essential infrastructure

## 25.4 Financial Achievability

The masterplan is structured to support delivery and viability however, as recognised, to unlock the potential of East Norwich significant upfront infrastructure investment is required. No site is unburdened of these large upfront costs, Carrow Work's requires significant site clearance, remediation and restoration investment; the Deal Ground and May Gurney require access upgrades (including bridges), remediation and flood mitigation; and the Utilities site requires clearance and remediation, flood protection and a new access across the Wensum.

Aside from these site-specific issues there are cross-cutting investment needs such as new pedestrian and cycle infrastructure, utilities provision, education and community facilities, landscape and ecology improvements.

Combined these investment needs present a significant cost hurdle to achieving the vision for East Norwich that will be the focus of activity in Stage 2 of the masterplan process. At present our understanding of both cost and value considerations suggests that the overall proposition does create significant financial value, however there are likely to be challenges in terms of the relationship between the timing of costs and revenue.

Unsurprisingly much of the cost-burden falls on the early stages of development for each land parcel as investment is needed to make the sites 'development-ready', receipts from the development itself come much later for each site – which creates a financial and therefore delivery challenge.

However, this challenge is likely to be able to be overcome. East Norwich is in a unique position where all stakeholders are working together at an early stage to 'plan' the delivery of infrastructure and development and therefore a joined up approach to in funding across the public and private sector can be considered.

More widely, the development would generate a range of different income streams that could be used to smooth the relationship between cost and return over time. This includes 'traditional' receipts such as developer contributions to the local authorities, but also potential for more innovative funding mechanisms such as long term business rate receipts, the potential for local energy generation or income from commercial spaces via an area-wide operational 'company'.

Clearly at this early stage there a number of assumptions made around cost and value and the initial assessment are conservative in terms of the level of value generated. Certainly, as is experienced in other major regeneration projects, we would anticipate significant improvements in the value of development that can be achieved in East Norwich as it matures. This would greatly improve the overall viability of the scheme and potentially allow for upfront costs to be repaid over time.

At the conclusion of this Concept Masterplan stage it is clear that it presents a profitable scheme overall, however there are a series of financial and funding barriers that need to be considered in more detail to identify how these can be overcome.

The focus of Stage 2 of the project will be to look more closely at the timing of costs and receipts in order to develop appropriate strategies for both securing upfront investment to unlock infrastructure delivery and capture long term value to repay that investment appropriately. This will include a consideration of the role of local and national government in the funding equation as well as the expectation for landowners and developers.



