

**AVISON
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East Norwich Partnership

East Norwich Regeneration Area Infrastructure Delivery Plan

May 2022

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Report title: East Norwich Partnership

Prepared by: Martyn Saunders

Status: Final

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For and on behalf of Avison Young (UK) Limited

Item No	Item	Purpose	Intervention Type	Total Cost (£m)**	Site Costs (£m)****				Contingency	Cost Basis	RPS Cost Plan Ref	Source	Cost Risk Assessment	Potential Optimism Bias Level	Core Site Benefit***	Relative assessment of benefits				Site Funding Source***	Potential for External Funding (Part or Whole)	Potential Funding Source	Notes
					Carrow Works*	May Gurney	Deal Ground	Utilities Site								Site(s) specific	East Norwich	City wide	Sub regional				
ACCESSIBILITY																							
A1	New all modes bridge for vehicles, pedestrians and cycles across the River Wensum	Provide access to/from the Utilities site from the Deal Ground and new connections to other areas north of the Wensum.	Site Infrastructure	5.76	0.00	0.00	0.00	5.76	20%	Costed	D9	RPS with reference to WSP Study**	Green	24%	Utilities Site	Green	Green	Green	Green	Utilities Site / Deal Ground	Yes	DLUHC, DfT, IIF ^A	
A2	New pedestrian / cycle bridge across the River Wensum	Provide connections between Geoffrey Watling Way/Football Ground and East Norwich sites	Strategic Infrastructure	4.80	4.80	0.00	0.00	0.00	20%	Costed	D11	RPS with reference to WSP Study**	Green	24%	Carrow Works / Carrow House	Green	Green	Green	Green	Carrow Works / Carrow House	Yes	DLUHC, DfT, IIF ^A	
A3	New all modes bridge for vehicles, pedestrians and cycles across the River Yare	Provide access to/from the Deal Ground and Utilities site	Site Infrastructure	3.00	0.00	0.00	3.00		20%	Costed	D8	RPS with reference to WSP Study**	Green	24%	Deal Ground / Utilities Site	Green	Green	Green	Green	Deal Ground / Utilities Site	Yes	DLUHC, DfT, IIF ^A	
A4	New pedestrian / cycle bridge across the River Yare	Provide access to/from Whittingham Country Park and the Broads and create new high quality strategic cycle route	Strategic Infrastructure	2.40	0.00	0.00	2.40	0.00	20%	Costed	D12	RPS with reference to WSP Study**	Green	24%	Deal Ground	Green	Green	Green	Green	Deal Ground	Yes	DLUHC, DfT, IIF ^A	
A5	Improvement to existing underpass for pedestrians and cycles	Provide connection between Carrow Works and Deal Ground under the railway line and create new high quality strategic walk/cycle route	Strategic Infrastructure	2.76		2.76		0.00	20%	Costed	D10	RPS with reference to WSP Study**	Green	24%	Carrow Works / Deal Ground	Green	Green	Green	Green	Carrow Works / Deal Ground	Yes	DLUHC, DfT, IIF ^A	
A6	Upgrades to existing pedestrian / cycle routes within Carrow Works	Provide cycle/pedestrian access to/from all parts of the Carrow Works site that link to strategic route	Site Infrastructure	0.77	0.77	0.00	0.00	0.00	10%	Costed	D1	RPS	Yellow	44%	Carrow Works / Carrow House	Green	Green	Green	Green	Carrow Works / Carrow House	Yes	DLUHC, DfT, SUSTRANS, NCC	
A7	Provision of pedestrian and cycle routes through the May Gurney, Deal Ground and Utilities	Provide cycle/pedestrian access to/from all parts of the these sites that link to strategic route	Site Infrastructure	1.77	0.00	0.14	0.64	0.99	10%	Costed	D2	RPS	Yellow	44%	May Gurney / Deal Ground / Utilities Site	Green	Green	Green	Green	May Gurney / Deal Ground / Utilities Site	Yes	DLUHC, DfT, SUSTRANS, NCC	
A8	Ecology and Archaeology	To provide bus stops and associated infrastructure to promote public transport usage	Site Infrastructure	0.88	0.88	0.00	0.00	0.00	10%	Costed	D	RPS and Hydrock	Yellow	44%	Carrow Works / Carrow House	Green	Green	Green	Green	Carrow Works / Carrow House	No	Operator	
A9	Infrastructure to support e-bike hire, e-car-hire scheme and e-car charging	To provide infrastructure to promote low carbon transport modes	Strategic Infrastructure	2.88	1.28	0.25	0.78	0.57	10%	Costed	D	RPS and Hydrock	Yellow	44%	All sites	Green	Green	Green	Green	All site owners	Yes	DLUHC, DfT, DBEIS, Private	
A10	Upgrading of primary route through Carrow Works + provision of new routes	To provide vehicular access to all development plots within the site	Site Infrastructure	2.86	2.86	0.00	0.00	0.00	10%	Costed	D3 / D4	RPS	Yellow	44%	Carrow Works	Green	Green	Green	Green	Carrow Works	No		
A11	New vehicular routes within the May Gurney, Deal Ground and Utilities Sites	To provide vehicular access to all development plots within the site	Site Infrastructure	3.71	0.00	0.55	1.38	1.79	10%	Costed	D4	RPS	Yellow	44%	May Gurney / Deal Ground / Utilities Site	Green	Green	Green	Green	May Gurney / Deal Ground / Utilities Site	No		
A12	Remodelling of existing vehicular access from A147/A1054 roundabout to Carrow Works	Allowance for improvement to 'County Hall' roundabout to improve access to Carrow Works for all modes	Site Infrastructure	0.55	0.55	0.00	0.00	0.00	10%	Allowance	D5	RPS	Red	70%	Carrow Works	Green	Green	Green	Green	Carrow Works	No		
A13	New vehicular access at point of existing access from A147 into Carrow Works	To provide secondary access to Carrow Works for all modes	Site Infrastructure	0.83	0.83	0.00	0.00	0.00	10%	Allowance	D6	RPS	Red	70%	Carrow Works / Carrow House	Green	Green	Green	Green	Carrow Works / Carrow House	No		
A14	Remodelling existing vehicular access from Bracondale into the May Gurney site	To provide primary access point for May Gurney, Deal Ground and Utilities Sites	Site Infrastructure	0.33	0.00		0.33		10%	Allowance	D7	RPS	Red	70%	May Gurney / Deal Ground / Utilities Site	Green	Green	Green	Green	May Gurney / Deal Ground / Utilities Site	No		
A15	Allowance for other works to estate roads within the sites	To provide improved estate roads inc. drainage, planting, lighting	Site Infrastructure	12.65	4.95	1.65	3.30	2.75	10%	Allowance	D14	RPS	Red	70%	All sites	Green	Green	Green	Green	All individual site owners	No		
A16	Offsite Highways & Associated Works	Allowance for upgrades to the wider road network to manage any transport impacts	Site Infrastructure	10.45	3.30	1.65	2.75	2.75	10%	Allowance	C	RPS	Red	86%	All sites	Green	Green	Green	Green	All individual site owners	No		
A17	Upgraded Cromorne Pedestrian and Cycle Bridge	To provide connection to/from north of Utilities Site to Thorpe Road - onward benefit for residents to access Whittingham	Site Infrastructure	1.10				1.10	10%	Costed	D13	RPS	Yellow	44%	Utilities Site	Green	Green	Green	Green	Utilities Site	Yes	DLUHC, DfT, SUSTRANS, NCC	
EDUCATION + COMMUNITY																							
EC1	2FE Primary School	Provision of land to provide new primary education facilities to meet the needs generated by the development at East Norwich.	Site Infrastructure	9.35			9.35		10%	Costed	P	RPS	Green	13%	All sites	Green	Green	Green	Green	Carrow Works / May Gurney / Deal Ground / Utilities Site	Yes	DfE, CIL	LEA only requires land contribution - build cost assumed from other sources
FLOOD MANAGEMENT																							
FM1	Low level riverside walk along banks of the River Wensum	To provide flood mitigation for Deal Ground, May Gurney and Utilities sites	Strategic Infrastructure	2.53	0.00	0.00	1.27	1.27	10%	Costed	H	RPS	Yellow	22%	Deal Ground / Utilities Site	Green	Green	Green	Green	Deal Ground / Utilities Site	Yes	DLUHC, DEFRA, EA	
ENVIRONMENT + OPEN SPACE																							
EOS1	Site wide low carbon/zero carbon heating and power network	To provide net zero energy and utilities provision within East Norwich within new developments	Strategic Infrastructure	82.28	38.72	3.74	23.43	16.39	10%	Allowance	N/A	RPS	Red	68%	All sites	Green	Green	Green	Green	All individual site owners	Yes	DLUHC, DBEIS, EA, UKGBC, IIF ^A , Private	This doesn't make a specific allowance for the provision of an Energy Centre within East Norwich. It is likely an onsite facility will be required, however the scale and nature of this will need to be scoped via detailed feasibility as such it sits outside of the IDP at this point in time.
EOS2	Local public open and child play space as required	To provide appropriate levels of open and play space for residents within East Norwich	Enabling Works	6.60			6.60		10%	Costed	H	RPS	Green	11%	All sites	Green	Green	Green	Green	All individual site owners	No		
EOS3	Ecology and Archaeology	Allowance for provision of specific interventions that may be needed to address archaeological/ecological issues on site	Enabling Works	1.10	0.28	0.28	0.28	0.28	10%	Allowance	G	RPS	Red	68%	All sites	Green	Green	Green	Green	All individual site owners	Yes	Partial through GI RAMS	
EOS4	Site wide landscaping and public realm	Allowance for public realm treatment to deliver a high quality environment	Strategic Infrastructure	7.15	2.20	1.10	1.65	2.20	10%	Allowance	H	RPS	Red	46%	All sites	Green	Green	Green	Green	All individual site owners	No		
RIVER + BROADS																							
RB1	Deal Basin	To provide small marina for day boats, canoes, SUP etc	Strategic Infrastructure	6.00	0.00	0.00	6.00	0.00	20%	Costed	I	RPS	Yellow	48%	Deal Ground	Green	Green	Green	Green	Deal Ground	Yes	DLUHC, DEFRA, DCMS, IIF ^A , National Lottery	
RB2	Crown Marina	To provide large boating marina for overnight stays, boat hire etc	Strategic Infrastructure	12.00	0.00	0.00	0.00	12.00	20%	Costed	I	RPS	Yellow	48%	Utilities Site	Green	Green	Green	Green	Utilities Site	Yes	DLUHC, DEFRA, DCMS, IIF ^A , National Lottery	
OTHER ENABLING WORKS																							
OEW1	Demolition and Alteration Works	Allowances for utilities disconnection, asbestos removal, building demolition and removal of hard standings etc	Enabling Works	13.55	8.25	2.56	1.42	1.32	10%	Allowance	A	RPS	Yellow	46%	All sites	Green	Green	Green	Green	All individual site owners	Yes	DLUHC, DBEIS, EA, NLHF	
OEW2	Reclamation and Earthworks	Allowance to cover remediation, decontamination etc	Enabling Works	26.64	8.80	1.45	8.14	8.25	10%	Allowance	B	RPS	Yellow	46%	All sites	Green	Green	Green	Green	All individual site owners	Yes	DLUHC, DBEIS, EA, NLHF	
OEW3	Offsite and Onsite Services	Allowance to cover utilities connection costs and for bringing services into the site to a fixed point	Enabling Works	3.85	1.10	0.55	1.10	1.10	10%	Allowance	E	RPS	Yellow	46%	All sites	Green	Green	Green	Green	All individual site owners	No		
OEW4	Offsite and Onsite Drainage	Allowance to cater for surface water management, including SUDS, within development plots etc	Enabling Works	10.45	3.30	1.65	3.30	2.20	10%	Allowance	F	RPS	Yellow	46%	All sites	Green	Green	Green	Green	All individual site owners	No		

* For cost and viability purposes Carrow Works and Carrow House are considered as a single site
 ** WSP Study refers to a report prepared on behalf of Norfolk County Council by WSP titled "East Norwich Link Repr Feasibility Study" shared with the SPD team in May 2021
 *** For these categories the benefit and potential site owner funding considers Carrow Works and Carrow House separately to consider how costs could be shared
 **** Includes contingency stated in Column K
 *IIF = Greater Norwich Infrastructure Investment Fund

Appendix I

Record of Assumptions

East Norwich Partnership

East Norwich - Infrastructure Delivery Plan Record of Assumptions

May 2022

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Report title: East Norwich – Infrastructure Delivery Plan Record of Assumptions

Prepared by: Martyn Saunders

Status: Final

Draft date: 9 May 2022

For and on behalf of Avison Young (UK) Limited

1. Introduction

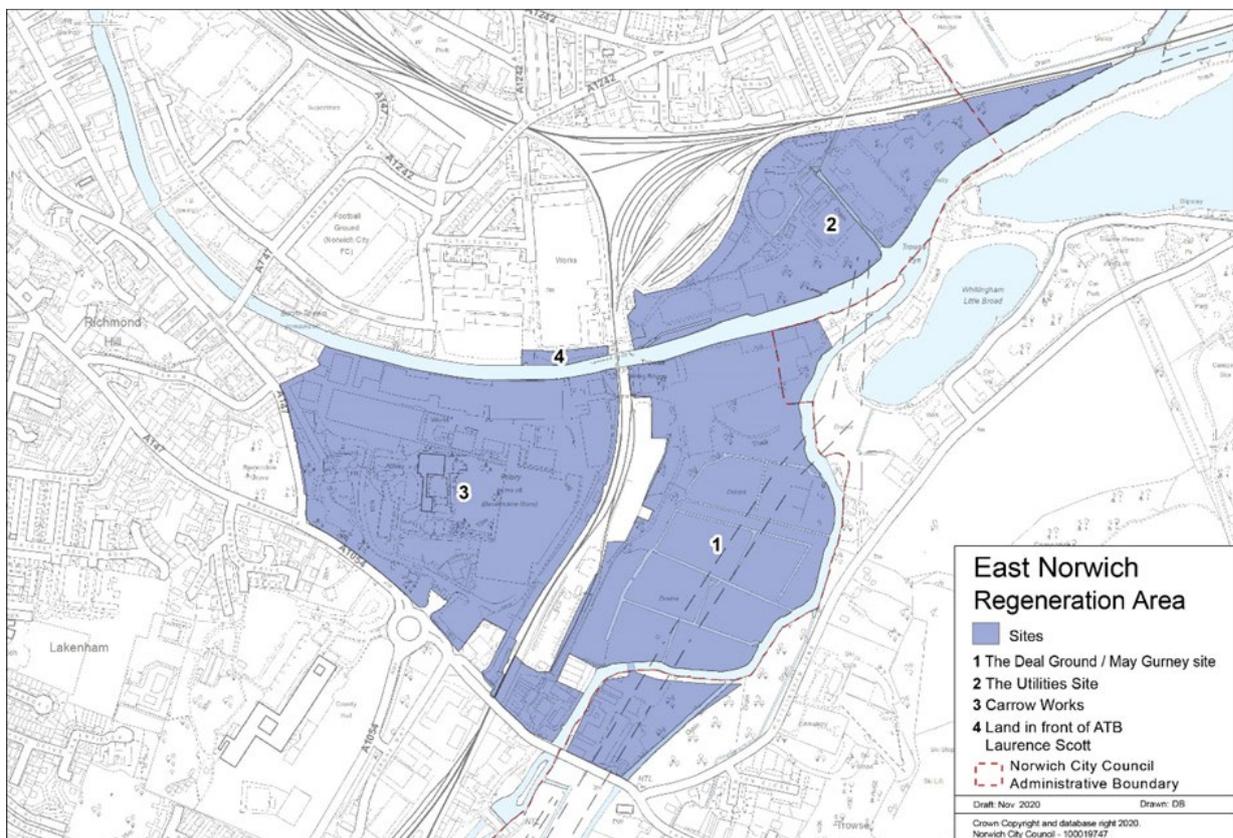
1.1 In February 2021 Norwich City Council, on behalf of the East Norwich Partnership, appointed a multi-disciplinary team led by Avison Young to prepare a new masterplan Supplementary Planning Document (SPD) for the East Norwich area. The Team includes Allies and Morrison, Hydrock, Tyler Grange, Cotswold Archaeology and RPS Group. The masterplan area is principally formed of three sites:

- Carrow Works (Site 3)
- The Deal Ground / May Gurney (Site 1)
- The Utilities Site (Site 2)

1.2 It also includes a small site known as Land in front of ATB Laurance Scott (shown as Site 4 below) which is principally included as an opportunity to improve pedestrian and cycle connections to the Utilities Site (utilising the existing underpass) and also relates to the future of the Trowse Bridge.

1.3 The area is adjacent to the Broads National Park and is bisected by the Wensum and Yare, as shown in Figure 1.

Figure 1 - East Norwich Regeneration Area Sites



Source: Norwich City Council, East Norwich Masterplan Brief 2020

1.4 The East Norwich Partnership is a public-private body established specifically to bring forward the comprehensive and coordinated regeneration of the East Norwich area, ensuring that critical infrastructure is delivered to unlock the sites, to the benefit of the city. The Partnership was established by, and is led by, Norwich City Council. The membership of the Partnership is as follows:

- Norwich City Council
- Homes England
- New Anglia LEP
- Norfolk County Council
- Broads Authority
- South Norfolk Council
- Broadland District Council
- Utilities Site Owners (RWE and National Grid)
- Deal Ground / May Gurney Owner (Serruys Property Company)
- Carrow Works Owner / Contracted Private Sector Developer (Britvic Unilever /Fuel Properties)
- Carrow House Owner (Norwich City Council)
- Network Rail.

2. The Infrastructure Delivery Plan (IDP)

- 2.1 This report is intended as a Record of Assumptions (RoA) and technical note to be read alongside the Infrastructure Delivery Plan (IDP) excel document, referred to as “The Document” throughout this RoA.
- 2.2 The IDP brings together the physical, social and economic infrastructure required to deliver the masterplan Supplementary Planning Document (SPD) for East Norwich. The IDP provides an input into the viability assessment of the SPD in terms of the cost, timing and relationship between infrastructure delivery and site development.
- 2.3 The IDP has been developed in partnership with the various technical stakeholders that have a role in the delivery of East Norwich. It’s starting point was the initial technical opportunities and constraints analysis undertaken by the consultant team in Stage 1. This set the baseline for understanding infrastructure needs, which has then been iteratively tested with partners as the masterplan and SPD has been developed.
- 2.4 The development of the SPD has led to a number of key infrastructure items being identified as required to be delivered in order to deliver a sustainable new community in East Norwich.
- 2.5 The IDP brings these needs together under the following themes:
- Accessibility – which captures river crossings, upgraded and new pedestrian cycle routes, sustainable transport, highway improvements and public transport;
 - Education + Community – a new two form entry primary school;
 - Flood Management
 - Environment + Open Space – which captures low carbon energy, open space, play space, landscaping and ecology;
 - River + Broads – facilities for pleasure boats; and
 - Other Enabling Works – which captures demolition, reclamation and site services.
- 2.6 The IDP focuses on solely on infrastructure that is specific to the delivery of the East Norwich vision, however it is recognised there are a wider set of infrastructure requirements across physical, social, health and community activity that will also need to form part of the East Norwich delivery. It is assumed development will be liable for both Section 106 and Community Infrastructure Levy in order to fund a these both locally and across the wider Greater Norwich area.

- 2.7 It is recognised that, given the nature of the SPD, not all infrastructure can be identified in detail, as such the IDP includes both infrastructure that is known based on assessments that form part of the SPD process, and allowances for other infrastructure that is likely to be needed but needs further detailed testing to specify.
- 2.8 A good example of this approach is the approach taken to improvements to the accessibility of East Norwich. It has been possible to identify some elements of the accessibility package, such as the underpass improvements, cycleways and bridges and therefore provide a cost estimate.
- 2.9 However, other interventions such as offsite improvements and junction upgrades need to be specified on the basis of a detailed transport assessment. This would need to be undertaken at the planning application stage and costed at that point. To manage this and ensure the current work is as comprehensive as possible the IDP identifies the need for such infrastructure and includes a cost allowance to provide a notional budget for such works.

Key Elements of the IDP

- 2.10 The IDP contains a range of information that is useful in setting the direction for infrastructure delivery in East Norwich and shaping the 'business case' for its provision. Below we provide an overview of these to aid use of the IDP.

Intervention Type

- 2.11 The IDP provides an assessment of the driver of need for each piece of infrastructure. These are grouped under three headings.
- 2.12 Strategic Infrastructure
- Items that deliver the integrated and sustainable vision set out in the GNLP. These have a benefit in supporting development at the site level but are more focussed on achieving higher level outcomes at the East Norwich and City-wide scale.
 - Example interventions include:
 - Pedestrian/cycle crossings to Whitlingham and Geoffrey Watling Way
 - E-Cycle/E-Vehicle hire infrastructure
 - Lowered riverside walk areas
 - Zero carbon utilities
 - Boating marinas

2.13 Site Infrastructure

- Items that deliver key infrastructure that directly unlocks development delivery, whilst they do generate strategic outcomes their core benefit is at the site specific level.
- Example interventions include:
 - All modes bridges across the Wensum and Yare
 - Bus servicing
 - Junction upgrades
 - Primary school

2.14 Enabling Works

- Items that are part of the development process but, given the nature of the sites, are likely to be of a higher order than 'standard' development sites in the city.
- Examples include:
 - Public open and child play space
 - Demolition works
 - Onsite and offsite services

2.15 The driver of the infrastructure need is set out in Column E of the IDP.

Cost Estimate + Basis

2.16 The IDP sets out a total cost for each infrastructure item. Where relevant this is then broken down to individual sites either on a 'pro-rata' basis linked to site area, or through the costing of particular site requirements.

2.17 Cost inputs have been provided by RPS based on the information contained within the SPD and its supporting analysis. They have been benchmarked against other supporting work previously prepared, discussed with project partners and compared to other project experience in order to arrive at a 'best estimate' appropriate to the purpose of the SPD. The source and relevant comparator study is set out in Column N of the IDP.

2.18 The cost basis is drawn from one of two specific approaches, recorded in Column L of the IDP:

- 'Costed Infrastructure' – where the SPD has been able to identify a specific intervention and provide sufficient high level information for a specific cost to be estimated; and

- 'Infrastructure Allowance' – where there is not the ability to include a specific approach in the SPD and therefore the team has provided a sum based on high level assumptions of likely needs, based on professional experience.

2.19 It should be noted that across all infrastructure items further work will be needed to increase the certainty of the cost estimates by developing more detailed assessments of the scale and scope of infrastructure. As noted in this document and the accompanying Delivery Report, some of this detail will be best led by the Partnership, whilst others will be more appropriately dealt with through the development management process.

2.20 Alongside the infrastructure cost an appropriate level of contingency has been identified by RPS, as set out in Column K of the IDP. The Costs set out in Columns F-J of the IDP are inclusive of this contingency.

Risk and Optimum Bias

2.21 Building on the cost information, and understanding its limitations, the IDP identifies a level of risk that should be associated with each costed item. This risk is presented as a RAG score, with red representing those costs which are at the highest risk of change.

2.22 The Cost Risk assessment is presented in Column O of the IDP and is based on the following assumptions:

- Red – Cost allowances where the ultimate intervention is not known and further work is required to scope this out;
- Amber – Cost estimates where the broad nature of the intervention is known, but the full scale and materiality are subject to further discussion/work; and
- Green – Cost estimates where the intervention has a defined scope and extent and therefore a cost rate can be applied to a particular amount of infrastructure.

2.23 It should be noted that all costs are subject to change as the project progresses into more detailed testing and analysis phases, as such even costs for items categorised as "Green" will likely evolve and change in the future.

2.24 To reflect this potential future change an initial view on the Optimism Bias (OB) that could be applied to each cost in any future Benefit:Cost Ratio or Value for Money Assessment is set out in Column P. The values here align with the levels set out in the Government's WebTAG Optimism Bias Workbook (2021) and are based both on the project type and the consultant team's professional judgement in regard to level of certainty in the cost estimate.

Assessment of Benefit

2.25 The IDP provides an assessment of the likely spatial extent to which any benefit from each infrastructure item may be experienced. The IDP identifies the primary site beneficiary (Column Q) and then considers the wider spatial extent of the impact as follows:

- Site(s) Specific - Infrastructure that provides a benefit/is necessary for a specific site(s) within East Norwich.
- East Norwich - Infrastructure that provides a benefit/is necessary for all the East Norwich sites;
- City Wide - Infrastructure that provides a benefit/is necessary for the City, or beyond the existing East Norwich sites; and
- Sub Regional - Infrastructure that provides a benefit/is necessary for the Greater Norwich sub-region.

2.26 The assessment of where the most significant level of benefit is experienced is shown by the coloured shading as follows:

Table 1- Relative Assessment of Benefit

Relative assessment of significance	
High	
Medium	
Low	

2.27 The darker shading indicates a higher level of relative benefit, as shown in Columns R-U.

Potential Funding Sources

2.28 The IDP considers the opportunities for funding infrastructure within Column V (which focusses on potential site owner contributions at the time of delivery) and Column W/X which identify the opportunity to seek other funding and the potential sources for this. It should be noted that a more detailed consideration of the potential funding sources is included in the accompanying Delivery Report.

2.29 The IDP identifies potential sources of funding, this is drawn from a review of how similar projects have been funded in the past locally and across the UK. It should be noted no conversations with funders have been held and the IDP does not represent a commitment from anyone to fund the projects identified.

2.30 Key agencies included in the IDP are:

- Government Departments (also covering their devolved agencies and funds)

- DLUHC – Department for Levelling Up, Housing + Communities
- DEFRA – Department for Environment, Food + Rural Affairs
- DfT – Department for Transport
- DCMS – Department for Culture, Media and Sport
- DfE – Department for Education
- DBEIS – Department for Business, Energy + Industrial Strategy
- Local funding
 - NCC – Norfolk County Council
 - IIF – Greater Norwich Infrastructure Investment Fund
 - CIL – Community Infrastructure Levy
 - GI RAMS – Green Infrastructure + Recreational Impact Mitigation Strategy
- Other agencies
 - EA – Environment Agency
 - Sustrans
 - UKGBC – UK Green Building Council
 - National Lottery
 - NLHF – National Lottery Heritage Fund

3. Site wide assumptions

3.1 The Document contains a number of overarching assumptions that apply to all infrastructure and development cost items.

Fixed bridges

3.2 The Broads Authority are clear that opening bridges across the River Wensum would be required to continue to allow for navigation into the Port of Norwich for all vessels and that any fixing of bridges would require compensatory mooring facilities to be provided downstream of the fixed bridge.

3.3 That being said, the Broads Authority recognise the need for pragmatism in order to unlock the wider opportunities the regeneration of East Norwich presents and are working with all parties to develop an approach to decision making, approvals and timescales.

3.4 The SPD provides a new Marina that could deliver the requisite compensatory facilities if access to the Port of Norwich was restricted by the provision of new fixed river crossings. As such, the IDP and this Record of Assumptions assumes that all bridges crossing the rivers within the East Norwich area are fixed.

3.5 Given the above the IDP provides costs for fixed bridges only, alongside a large boating marina. No assessment of costs for opening bridges is provided, however an order of magnitude figure is provided based on the assumption that costs would most likely double (at least) should bridges be required to open – however this would need to be tested by a more detailed design exercise.

3.6 It should be noted that the masterplan that underpins the SPD is designed in such a way that, should opening bridges be required, these can be delivered without an impact on the overall approach to development or levels of residential/employment space.

Costs covered by Section 106, Community Infrastructure Levy and other sources

3.7 The viability assessment assumes that development at East Norwich will be liable for both Section 106 and Community Infrastructure Levy in order to fund a wider range of infrastructure needs both locally and across the wider Greater Norwich area.

3.8 The SPD identifies a number of key interventions that would be funded through such mechanisms, including:

- Construction of the new primary school

- Highways adoption and maintenance
- Improvements to the County Wildlife Site
- Community facilities
- Open space provision

3.9 It is also likely that other general services would be funded through this route in order to mitigate the impacts of the development on Greater Norwich, including:

- Contributions for any increase emergency services provision
- Contributions to social services, adult education, libraires etc
- Contributions to bus services in early years before they are commercially viable

3.10 Outside of these arrangements costs for the delivery of physical spaces for the likes of healthcare, community facilities, early years provision etc are incorporated within the development build costs as these would most likely be located within mixed use buildings or standalone premises in wider development plots.

3.11 Further, the GNLP is supported by a Green Infrastructure Recreational Avoidance and Mitigation Study (GI RAMS), which recommended a levy be applied to all new developments to fund the provision of compensatory investment in Greater Norwich's sensitive green spaces to mitigate the impacts of increased visitor numbers.

3.12 Within the viability appraisal a specific charge for GI RAMS is included as a cost on development, at a rate of £185 per residential unit.

3.13 Given the above, the IDP and this Record of Assumptions document does not include items of infrastructure that would be funded through these 'standard' mechanisms – this does not mean they are not important to the overall deliver of the East Norwich vision.

Adoption and Maintenance

3.14 Unless they have been specified, there has been no allowances made for the Local Authority to adopt and maintain the infrastructure.

4. 'Costed' Infrastructure

- 4.1 The East Norwich SPD specifies a series of specific infrastructure items that are critical for the delivery of the area in a coordinated manner and that will enable the delivery of the Vision for the East Norwich area.
- 4.2 The masterplan which supports the SPD has worked up indicative proposals for key infrastructure items, these are high level concept proposals rather than detailed designs/engineered solutions but do allow an initial costing to be prepared.
- 4.3 It should be recognised that the costings provided are at a similarly high level to the concept designs themselves. They provide a benchmark cost estimate appropriate for the purpose of the SPD production, the costings are based on an assumed approach to construction which is based on the nature of the infrastructure item concept and RPS's knowledge of similar projects delivered in the UK.
- 4.4 Given the nature of these costs estimates, whilst they are a robust base for policy testing they should not be relied upon for any other purpose. Full costing can only be provided at more detailed feasibility and design stages.

Accessibility

Crossings

New all modes bridge crossing the Wensum (Item A1)

- 4.5 The item provides a new all modes fixed bridge from the Deal Ground to the Utilities site, crossing the River Wensum. It will provide vehicular, cyclist and pedestrian access to new residential and commercial properties on the Utilities site.
- 4.6 The bridge has been costed at £5.76mn in the Cost Plan. The cost is based on the following assumptions:
- A span of 29m and a width of 13.3m
 - Sufficient height to allow large vessels to pass underneath
 - Steel and concrete construction
 - 20% contingency
- 4.7 Subject to discussions outside of the scope of the East Norwich masterplan this could be one of the bridges that is required to open to allow unincumbered access to the Port of Norwich. This would

have a significant impact on the construction cost and also the certainty of that costing/contingency allowance, which would need to be higher. As a minimum this could be in the region of £11.5mn.

4.8 Phase: 3a to allow for construction on Utilities site (2030 – 2033).

4.9 The core benefit of the bridge would fall on the Utilities site, as its delivery would make it available for development. There would also be some wider benefits as it would allow 'cross-city' pedestrian and cycle networks to be enhanced, improving access to/from Trowse and Whitlingham from Thorpe and the City Centre.

New pedestrian/cycle bridge across the River Wensum (Item A2)

4.10 The item provides a new public pedestrian and cycle link between the area north of the River Wensum (Geoffrey Watling Way and the Football Ground), reinstating an historic bridge connection that once stood in this location.

4.11 The bridge has been costed at £4.8mn in the Cost Plan. The cost is based on the following assumptions:

- A span of 30m and a width of 6.8m
- Sufficient height to allow large vessels to pass underneath
- Steel construction
- 20% contingency

4.12 Subject to discussions outside of the scope of the East Norwich masterplan this could be one of the bridges that is required to open to allow unincumbered access to the Port of Norwich. This would have a significant impact on the construction cost and also the certainty of that costing/contingency allowance, which would need to be higher. As a minimum this could be in the region of £9.6mn.

4.13 Phase: 3a (2030 – 2033)

4.14 The primary benefit of this bridge would be in the creation of continuous and segregated pedestrian and cycle connections between the southern and northern sides of the Wensum – establishing a high quality link between the City Centre and Trowse/Whitlingham.

4.15 There would be potential benefits for both Carrow Works and the football stadium in terms of direct connections and improved footfall between the two.

New all modes bridge crossing the Yare (Item A3)

- 4.16 The item provides a new all modes fixed bridge from the May Gurney site to the Deal Ground, crossing the River Yare, enabling vehicles, pedestrians and cyclists to connect through the site to the wider East Norwich area.
- 4.17 The bridge provides a key part of the enabling infrastructure for both the Deal Ground and Utilities Site, which will rely on it for vehicular access.
- 4.18 The bridge has been costed at £3mn in the Cost Plan. The cost is based on the following assumptions:
- A span of 16m and width of 13.3m
 - Steel and concrete construction
 - 20% contingency
- 4.19 This cost is likely to remain consistent as there is no need for it to lift as the Yare is not navigable at this location by large vessels.
- 4.20 Phase: 2a to allow for construction on Deal Ground (2026 – 2029)
- 4.21 It is assumed the primary benefits of the bridge will lie within the Deal Ground and Utilities sites given its role in providing their access. However, there are potential wider benefits, both for the May Gurney site by providing a connection to the Wensum and facilities that can be delivered on the Deal Ground/Utilities site and also for the wider city by improving pedestrian/cycle connections between Trowse and the city centre.

New pedestrian/cycle bridge across the Yare (Item A4)

- 4.22 The item provides a new public pedestrian and cycle link between the Deal Ground and Whitlingham Country Park, via a new fixed bridge over the River Yare.
- 4.23 The bridge has been costed at £2.4mn in the Cost Plan. The cost is based on the following assumptions:
- A span of 20m and width of 2.4m
 - Steel construction
 - 20% contingency

- 4.24 This cost is likely to remain consistent as there is no need for it to lift as the Yare is not navigable at this location by large vessels.
- 4.25 Phase: 3a (2030 – 2033)
- 4.26 The new crossing will provide a direct benefit to the Deal Ground by providing a link into Whitlingham Country Park and the Broads beyond, the other sites in East Norwich will also benefit from the connection. More widely it will offer a high quality and segregated pedestrian and cycle route that connecting the City to the Broads.

Improvement to existing rail embankment underpass (Item A5)

- 4.27 The item provides a new public pedestrian and cycle link between the Carrow Works and Deal Ground sites, via an existing underpass under the railway line.
- 4.28 The underpass has been subject to separate feasibility study to understand the potential to re-use the existing structure, improve it via widening and/or deepening and also increase its width. Based on the outcome of the feasibility study the SPD focusses on improving the existing structure by undertaking minor excavation works to increase the head height as this is considered to provide the balance between achievability and quality of outcome.
- 4.29 Based on this conclusion the works have been costed at £2.76mn in the Cost Plan. This is based on the following assumptions:
- Excavation of ground level by 0.5m
 - Improvements to structure, lighting and surfacing
 - 20% contingency
- 4.30 Costs could vary significantly if other approaches are pursued, this could either increase or decrease costs. The SPD recognises that widening the underpass would only be feasible as part of wider works related to the improvement/twin-tracking of the Trowse rail crossing.
- 4.31 The benefit of this connections would be both within the Carrow Works site (by offering direct access to Whitlingham and the County Wildlife Site) and the Deal Ground/Utilities site by providing access to the facilities and amenities provided within Carrow Works. The connection is also strategically important for the city, creating a new link between the city and the Broads for pedestrians/cyclists – a key aim for Norwich – and allowing segregation of the route away from the busy Bracondale/King Street junctions.

Sustainable Transport

Upgrades to pedestrian and cycle routes through Carrow Works (Item A6)

- 4.32 The item allows for the upgrading of existing routes on the Carrow Works site to allow for an improved pedestrian and cycle experience, providing a key connection between King Street, the underpass and Bracondale.
- 4.33 The improvements have been costed at £770,000 within the Cost Plan, including a 20% contingency.
- 4.34 Pre-construction Phase (2022 – 2025).
- 4.35 The improvements directly benefit development Carrow Works within the Waterside East character area by improving the public realm. However is also improves the strategic pedestrian/cycle connections between the city and Norfolk Broads, providing benefits tot eh wider East Norwich area and the city as a whole.

Provision of pedestrian and cycle routes through the May Gurney, Deal Ground and Utilities Sites (Item A7)

- 4.36 The item allows for the creation of new routes on the May Gurney, Deal Ground and Utilities sites to allow for pedestrian and cycle movements.
- 4.37 The provision of these routes has been costed at £1.77mn within the Cost Plan, including a 10% contingency.
- 4.38 Pre-construction Phase (2022 – 2025)
- 4.39 The routes provide a primary benefit to the May Gurney, Deal Ground and Utilities sites by creating new links to the wider area and connections between areas, they also will enhance the public realm. Given their connections into wider footpath and cycleway networks there is a wider benefit, enhancing the permeability and strategic connectivity of the city to the Broads.

Contributions to support bus services through the Carrow Works site (Item A8)

- 4.40 The contribution allows for the provision of specific bus infrastructure within the Carrow Works site to enable existing bus routes to service the development.
- 4.41 Drawing on initial advice from Hydrock's transport planning team the IDP includes an allowance to provide

- 12 bus stops
- associated highway improvements
- Bus laybys

4.42 The bus infrastructure has been costed at £880,000 within the Cost Plan including a 10% contingency.

4.43 Pre-construction Phase (2022 – 2025)

4.44 The primary beneficiary of this intervention is the Carrow Works site, however in combination with the upgraded underpass it would provide benefits to the Deal Ground. Strategically, bus rerouting into the site would also improve access to facilities in East Norwich from residents of Trowse and the city.

Infrastructure to support e-bike hire, e-car-hire scheme and e-car charging (Item A9)

4.45 The item provides for the necessary infrastructure to enable the widespread use of electric vehicles in East Norwich by providing publicly accessible charging infrastructure. In addition it is assumed (outside of this IDP item) that private charging facilities are provided within residential and commercial developments.

4.46 Drawing on initial advice from Hydrock's transport planning team the IDP includes an allowance to provide

- Electric vehicle charging points
- Car club provision
- E-Vehicle and E-Bike hire infrastructure
- Supporting utilities infrastructure

4.47 This infrastructure has been costed at £2.88mn in the Cost Plan, including 10% contingency, based on

- Provision of 64 electric bikes (£1,000 per bike) and 32 charging points (£300 per stand) at 8 locations (£50,000 per location) spread across sites. Additional allowance of c20% included for design development.
- Assumed approximately 1,000 EV Charging Points (£2,000 per point) across all sites and associated supporting infrastructure. Electric vehicle charging provided for Residential, Employment and Public use.

4.48 Pre-construction Phase (2022 – 2026)

4.49 This item will benefit all sites.

Upgraded Cremorne Pedestrian and Cycle Bridge (A17)

4.50 This item provides a public connection to/from north of Utilities Site to Thorpe Road, utilising the existing bridge structure. The provision of the access would provide a wider connection to Whitlingham from the area north of East Norwich via the new river crossings (A1 and A4) over the Wensum and Yare.

4.51 The works have been costed at £1.1mn in the Cost Plan, including a 10% contingency. This is based on the following assumptions:

- Resurfacing of the existing structure
- Structural reinforcement

4.52 No allowance has been made to upgrade the bridge to provide vehicular access.

4.53 Phase: 3b (2034 – 2037)

4.54 The route will provide a direct benefit to the Utilities Site by providing a link to the north and connections to strategic routes across the city. There will be some similar benefit to the rest of East Norwich. It will also contribute to a high quality and segregated pedestrian and cycle route that connects the City to the Broads (including Whitlingham) with particular benefits for residents in Thorpe.

Road Upgrades

Upgrading of primary route through Carrow Works (Item A10)

4.55 The item allows for the conversion of the vehicular routes on the Carrow Works site to be suitable to serve the vehicular movements of that site to support residential and commercial development.

4.56 The improvements include:

- Provision of pedestrian footpaths
- Streetlighting

4.57 These improvements have been costed at £2.86mn, including a 10% contingency.

4.58 Pre-construction Phase (2022 – 2025).

4.59 The sole beneficiary of this intervention will be Carrow Works.

New vehicular routes within the May Gurney, Deal Ground and Utilities Sites (Item A11)

4.60 The item allows for the conversion of the creation of new vehicular routes on the May Gurney, Deal Ground and Utilities Sites to be suitable to serve the vehicular movements of those sites.

4.61 The improvements include:

- Laying of internal road network
- Provision of pedestrian footpaths
- Streetlighting

4.62 The infrastructure has been costed at £3.71mn within the Cost Plan, including a 10% contingency,

4.63 Pre-construction Phase (2022 – 2025).

4.64 This item will benefit the May Gurney, Deal Ground and Utilities sites.

Education + Community

Primary School (Item EC1)

4.65 Given the anticipated level of housing development and the associated population increase a 2 form of entry primary school, providing up to 420 school places, is likely to be required. The SPD identifies the Carrow Works site as the most appropriate location for this to come forward.

4.66 Multiple options have been considered for both the location and physical form of the school, including the re-use of existing buildings and the delivery of the school in a compact 'urban' typology. The SPD does not prescribe a solution.

4.67 Initially a 2FE school was costed at £12.9mn within the Cost Plan, including a 10% contingency. However, discussion with the Local Education Authority (LEA) has confirmed this would not need to be paid for by the development, as existing CIL and Department for Education programmes would cover this cost.

4.68 However, the LEA would require the land for the school to be provided at no cost.

4.69 Within the IDP the cost of the school has been retained, however this is not included in the viability appraisals. The cost contribution is dealt with in the viability appraisal by assigning nil land value to that plot.

4.70 Phase: 1a (2022 – 2026), based on the assumption the school will need to be open upon the occupation of 500 new homes. It should be noted this will need to be reviewed once detailed schemes and delivery trajectories are established via the development management process.

4.71 This item will benefit all sites.

Flood Management

Low level riverside walk along banks of the Wensum (Item FM1)

4.72 This item includes an extension to the riverside walk along the north and south banks of the River Wensum, on the Utilities site and Deal Ground.

4.73 The riverside walk will provide additional flood storage capacity to manage flood risk across the site and beyond.

4.74 The costing of the works is based on flooding modelling undertaken by Hydrock, which recommended:

- Lowering the river bank to 1.4m AOD along the length of the Wensum banks at a width of 8m
- Lowering the river bank along parts of the Yare outside of the County Wildlife site

4.75 The flood mitigation intervention has been costed £2.53mn in the Cost Plan, including 10% contingency.

4.76 Phase: 2a (2026 – 2029)

4.77 This item predominantly benefits the Deal Ground and Utilities Sites, enabling the sites to be developed. It has wider benefits by ensuring flood risks aren't increased elsewhere in the area, and also by improving access to the Wensum and Yare for residents.

Environment + Open Space

Local public open and child play space (Item EOS2)

4.78 This item includes allowances for open space and play space across the East Norwich sites.

4.79 In line Norwich's Development Management Policies the SPD seeks to deliver 20% of a development site as open space and specific provision for younger children's play space required for all developments over 100 units, which must provide at least 150 sqm with a minimum of four different pieces of equipment.

4.80 The cost of this open space provision is £6.6mn within the Cost Plan, including 10% contingency. This is comprised of:

- £1,100,000 for 9 areas of play space (including equipment and landscaping)
- £5,500,000 for open space provision, assumed £5 per m2 of open space.

4.81 Phase: To be delivered in line with housing number trigger points.

4.82 This item benefits all sites with some open spaces potentially having a wider draw.

River + Broads

Deal Basin (Item RB1)

4.83 Within the SPD a small leisure marina is located in the north west corner of the Deal Ground, between the existing Trowse Rail Bridge and proposed all modes bridge over the River Wensum.

4.84 The primary aim is to provide a new leisure facility within the area, improving connections between the city and the Broads, however it would also provide some contribution to the flood management strategy.

4.85 The cost of the leisure marina makes provision for the following:

- A marina size of 1,692sqm
- Construction of the basin – including excavation, sheet piling, waterproofing
- Operational equipment – jetties, lifting equipment etc
- Operation buildings

4.86 The leisure marina is costed a £6mn within the Cost Plan, including a 10% contingency.

4.87 Phase: 2a (2026 – 2029)

4.88 The leisure marina has a City-wide benefit as it will help make East Norwich a destination in the City, attracting visitors, residents and businesses. Its contribution to flood management will benefit the Deal Ground, May Gurney and Utilities sites.

Crown Marina (Item RB2)

4.89 The SPD identifies the opportunity to locate a large boating marina within the Utilities site, immediately to the east of the current electricity sub-station.

- 4.90 The marina offers the opportunity to enhance the connections between the city and the Broads by providing visitor moorings and could also provide a compensatory facility should access to the Port of Norwich be constrained by fixed crossings over the Wensum. The requirement for and delivery of compensatory facilities requires further discussion and agreement between partners, this should inform further timing and funding decisions.
- 4.91 Subject to further testing this marina may also contribute to the overall flood management strategy for East Norwich.
- 4.92 The cost of the leisure marina makes provision for the following:
- A marina size of 4,585sqm
 - Construction of the basin – including excavation, sheet piling, waterproofing
 - Operational equipment – jetties, lifting equipment etc
 - Operation buildings
- 4.93 The boating marina is costed a £12mn within the Cost Plan, including a 10% contingency.
- 4.94 Phase: 3a (2030 – 2033)
- 4.95 This item has sub-regional benefits, whilst also potentially adding value to the Utilities site through the creation of an attractive marina. Its potential contribution to flood management could benefit the Deal Ground, May Gurney and Utilities sites.

5. Estimated Allowances

- 5.1 Given the nature of the masterplan and SPD it is recognised that there will be some infrastructure requirements that cannot be 'costed' at this stage given the level of assessment needed to understand wider impacts or specific design approaches.
- 5.2 However, for the SPD and viability work to be robust and fit for purpose it is important that these are accounted for in some form. Therefore, the approach taken within the IDP is to provide high level cost allowances for interventions that are known to be required but cannot be costed more specifically.
- 5.3 These items have been identified via engagement with relevant technical stakeholders as part of the SP process as well as drawing on the professional knowledge and experience of the SPD team's technical specialists.
- 5.4 This has allowed key infrastructure types to be confirmed and a broad cost allowance established. It is clear these allowances, whilst based on a depth of professional experience are subject to change as more detailed work is progressed in the future. They therefore represent the SPD teams best judgement at a point in time and based on little or no base information.

Accessibility

- 5.5 It should be noted that no transport modelling has been undertaken as part of either the GNLP process or the preparation of the SPD. As such all identified interventions are based on the professional assessment and judgement of the team, in discussion with landowners and local authorities. It will be important for site specific development proposals to provide detailed transport assessments to support their approach to managing and mitigating transport needs and impacts – this will allow a more thorough cost estimate to be provided.

Remodelling of existing vehicular access from A147/A1054 roundabout to Carrow Works (Item A12)

- 5.6 The item allows for improvements to the A147/A1054 roundabout to allow for vehicular, pedestrian and cycle movements onto the Carrow Works site. Furthermore, it will provide access to new residential and commercial properties on the Carrow Works site.
- 5.7 No junction design has been prepared therefore within the Cost Plan an allowance of £550,000 has been included, including a 10% contingency.

- 5.8 Pre-construction Phase (2022 – 2025).
- 5.9 This item will benefit the Carrow Works site, however it also will have a wider benefit by improving the pedestrian/cycling environment.

New vehicular access at point of existing access from A147 into Carrow Works (Item A13)

- 5.10 The item allows for improvements to the potential access from the A147 to the western side of the Carrow Works site, to allow for bus, pedestrian and cycle access to Carrow Works.
- 5.11 No junction design has been prepared therefore within the Cost Plan an allowance of £825,000 has been included, including a 10% contingency.
- 5.12 Phase: 1a to allow for construction and/or conversion of the buildings in the north west corner of the Carrow Works site (2022 – 2025)
- 5.13 This item will benefit the Carrow Works site, however it also has the potential to provide a City-wide benefit by creating improved bus linkages to Whitlingham Country Park through the Carrow Works site, and improving pedestrian/cycle access.

Remodelling existing vehicular access from Bracondale into the May Gurney site (Item A14)

- 5.14 The item allows for improvements to the current vehicular access point from Bracondale to the May Gurney site, also allowing for future access to the Deal Ground and Utilities sites.
- 5.15 No junction design has been prepared therefore within the Cost Plan an allowance of £330,000 has been included, including a 10% contingency.
- 5.16 Pre-construction Phase (2022 – 2025).
- 5.17 This item will benefit the May Gurney, Deal Ground and Utilities sites, however it also has the potential to provide a City-wide benefit by creating improved pedestrian and cycle linkages from Trowse to the City of Norwich.

Other Onsite Accessibility Allowances

- 5.18 Estate roads, drainage, planting, lighting (Item A15) - Includes estate roads from main access routes throughout the sites to residential plots. Also includes allowance for driveways and routes to individual plots and associated drainage. Blended rate applied to allow for landscaping and development across remaining areas of the site.

- £12.65mn, including 10% contingency

Offsite Highways and Associated Works (Item A16)

- 5.19 This item includes budgetary allowances for junction adaptations and public realm improvements outside of the East Norwich area to allow for mitigation/management of any wider traffic impacts from development.
- 5.20 No transport assessment has been undertaken as part of the SPD as this is an exercise required at planning application stage. Only at that point would actual interventions be known and specific costs applied.
- 5.21 Within the Cost Plan an allowance of £10.45mn has been included, including 10% contingency.
- 5.22 Pre-construction Phase (2022 – 2025).
- 5.23 This item benefits all sites. Furthermore, it has the potential to provide a benefit to the City of Norwich.

Environment + Open Space

Site wide low carbon/zero carbon heating and power network (Item EOS1)

- 5.24 At this stage the exact energy solution for the East Norwich sites is unknown and is subject to further detailed feasibility work. However, the Masterplan seeks to reduce carbon emissions and deliver energy savings where possible.
- 5.25 Given the timescales that East Norwich will be delivered, it is likely that technology will become more efficient and commercially viable as well as new technologies that will emerge, as such specific costing is not possible as detailed schemes and solutions have not been designed.
- 5.26 With no specific intervention able to be costed the Cost Plan includes an allowance for 'net zero' attainment in the future. This is based on an assumed uplift to general build costs for residential and commercial premises of 15% - this is based on research and experience of RPS in terms of built schemes and AY's experience of developer approaches on major regeneration projects.
- 5.27 Overall, this leads to an allowance within the Cost Plan of £82.3mn including a 10% contingency.
- 5.28 This item would be delivered in line with development phasing across the lifetime of the project and would benefit all sites. There may also be wider benefits to the city in terms of improved air quality.

5.29 It should be noted this cost item doesn't make a specific allowance for the provision of an Energy Centre within East Norwich. It is likely an onsite facility will be required, however the scale and nature of this will need to be scoped via detailed feasibility as such it sits outside of the IDP, RoA and Delivery Report.

Ecology and Archaeology (Item EOS3)

5.30 This item is a budgetary allowance for archaeological and ecological measures required to support the development of the East Norwich sites. It is anticipated that, given the wider ecology considerations made in the SPD these interventions will be modest for each site.

5.31 No specific ecology or archaeology interventions have been identified at this point, therefore an allowance of £1.1mn has been included in the Cost Plan, including a 10% contingency.

5.32 Pre-construction phase (2022 – 2025)

5.33 This item benefits all sites.

Other Environment + Open Space Allowances

5.34 Site-wide landscaping and public realm (Item EOS4)

- £7.15mn, including 10% contingency

Other Allowances to Enable Delivery

5.35 Demolition and alteration works (Item OEW1)

- including allowances for utilities disconnection, asbestos removal, building demolition and removal of hard standings etc
- £13.55mn, including 10% contingency

5.36 Reclamation and Earthworks (Item OEW2)

- based on a rate of £400,000/ha to cover remediation, decontamination etc
- £26.64mn, including 10% contingency

5.37 Offsite and onsite services (Item OEW3)

- covering utilities connection costs and for bringing services into the site to a fixed point
- £3.85mn, including 10% contingency

5.38 Offsite and onsite drainage (Item OEW4)

- to cater for surface water management, including SUDS etc
- £10.45mn, including 10% contingency

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Appendix II

RPS Cost Plan

It should be noted that the RPS Cost Plan has been prepared at a time of significant uncertainty in construction sector pricing, fuelled by labour and materials supply challenges, ongoing settlement of international trade relationships post Brexit, the continued impact of the COVID-19 pandemic and the Russian invasion of Ukraine. Throughout 2021 and 2022 price inflation has been severe, and this is expected to continue in the immediate term. However forecasts suggest prices will begin to stabilise in the latter part of 2022, with cost rises returning closer to trend during 2023, some forecasters predict prices may even fall modestly at some point later in this period.

Given this context costs are presented as understood at this moment in time and should be reviewed at the appropriate time when more is understood about the long term implications of the current context and more detail has been developed on particular infrastructure items.

COST PLAN Nr 2 Rev B DRAFT

FOR:

AVISON YOUNG

AT:

EAST NORWICH MASTERPLAN

JOB NR. LODI2347

12/04/2022





SECTION I - COST PLAN

COST PLAN Nr 2 Rev B DRAFT

SUMMARY

DESCRIPTION	TOTAL	CARROW WORKS	DEAL GROUND	MAY GURNEY	UTILITIES SITE
A DEMOLITION AND ALTERATION WORKS	£ 13,420,000	£ 8,250,000	£ 1,292,500	£ 2,557,500	£ 1,320,000
B RECLAMATION AND EARTHWORKS	£ 23,430,000	£ 8,800,000	£ 8,140,000	£ 1,320,000	£ 5,170,000
C OFF SITE HIGHWAYS & ASSOCIATED WORKS	£ 10,450,000	£ 3,300,000	£ 2,750,000	£ 1,650,000	£ 2,750,000
D ON SITE HIGHWAYS & ASSOCIATED WORKS	£ 46,949,125	£ 19,671,000	£ 8,491,250	£ 5,927,375	£ 12,859,500
E OFF SITE & ON SITE SERVICES	£ 3,850,000	£ 1,100,000	£ 1,100,000	£ 550,000	£ 1,100,000
F OTHER OFF SITE & ON SITE DRAINAGE	£ 10,450,000	£ 3,300,000	£ 3,300,000	£ 1,650,000	£ 2,200,000
G ECOLOGY & ARCHAEOLOGY	£ 1,100,000	£ 275,000	£ 275,000	£ 275,000	£ 275,000
H SITEWIDE LANDSCAPING	£ 16,280,000	£ 8,800,000	£ 2,915,000	£ 1,100,000	£ 3,465,000
I MARINA DEVELOPMENT	£ 18,000,000	£ -	£ 6,000,000	£ -	£ 12,000,000
J PLANNING OBLIGATIONS (WORKS TO BE DONE)	£ -	£ -	£ -	£ -	£ -
K SECTION 106 / CIL PAYMENTS	£ -	£ -	£ -	£ -	£ -
L CONTINGENCY (SEE ALLOWANCE IN SEPARATE SECTIONS)	£ -	£ -	£ -	£ -	£ -
M FEES	£ -	£ -	£ -	£ -	£ -
TOTAL SITE INFRASTRUCTURE COST	£ 143,929,125	£ 53,496,000	£ 34,263,750	£ 15,029,875	£ 41,139,500
N RESIDENTIAL LAND DEVELOPMENT	£ 626,233,806	£ 284,801,355	£ 183,912,210	£ 30,292,718	£ 127,227,523
O EMPLOYMENT LAND DEVELOPMENT	£ 62,988,002	£ 29,182,879	£ 11,899,102	£ -	£ 21,906,022
P EDUCATION LAND DEVELOPMENT	£ 9,350,000	£ 9,350,000	£ -	£ -	£ -
TOTAL SITE DEVELOPMENT COST	£ 698,571,808	£ 323,334,234	£ 195,811,312	£ 30,292,718	£ 149,133,544
COMBINED TOTAL	£ 842,500,933				

COST PLAN Nr 2 Rev B DRAFT

BREAKDOWN

DESCRIPTION	TOTAL	CARROW WORKS		DEAL GROUND		MAY GURNEY		UTILITIES SITE		
<u>Utility Disconnections & Decommissioning Works</u> Generally over site area (Provisional Sum)	£ 200,000	1 item	£ 100,000	£ 100,000	1 item	£ 25,000	£ 25,000	1 item	£ 50,000	£ 50,000
<u>Asbestos Removal</u> Allowance (Asbestos surveys of existing buildings to be completed)	£ -		£ -			£ -			£ -	
<u>Demolition Works</u> Demolition & Removal of items 1-44	£ 11,500,000	1 item	£ 6,900,000	£ 6,900,000	1 item	£ 1,150,000	£ 1,150,000	1 item	£ 1,150,000	£ 1,150,000
Removal of Hard Standings and Existing Roads	£ 500,000	1 item	£ 500,000	£ 500,000						
Sub - Total	£ 12,200,000		£ 7,500,000	£ 7,500,000		£ 1,175,000	£ 1,175,000		£ 1,200,000	£ 1,200,000
Contingency	£ 1,220,000	10%	£ 750,000	£ 750,000	10%	£ 117,500	£ 117,500	10%	£ 120,000	£ 120,000
Total Demolition and Alteration Works to Summary	£ 13,420,000		£ 8,250,000	£ 8,250,000		£ 1,292,500	£ 1,292,500		£ 1,320,000	£ 1,320,000
B RECLAMATION AND EARTHWORKS										
General allowance for site preparation, reclamation, retaining structures, remediation etc. Note; subject to receiving information from Design Team	£ 21,300,000	1 item	£ 8,000,000	£ 8,000,000	1 item	£ 7,400,000	£ 7,400,000	1 item	£ 4,700,000	£ 4,700,000
Sub - Total	£ 21,300,000		£ 8,000,000	£ 8,000,000		£ 7,400,000	£ 7,400,000		£ 4,700,000	£ 4,700,000
Contingency	£ 2,130,000	10%	£ 800,000	£ 800,000	10%	£ 740,000	£ 740,000	10%	£ 470,000	£ 470,000
Total Reclamation and Earthworks to Summary	£ 23,430,000		£ 8,800,000	£ 8,800,000		£ 8,140,000	£ 8,140,000		£ 1,320,000	£ 5,170,000
C OFF SITE HIGHWAYS & ASSOCIATED WORKS										
General allowance for S278 Works & other Miscellaneous Utilities (offsite) Note; subject to receiving information from Design Team	£ 9,500,000	1 item	£ 3,000,000	£ 3,000,000	1 item	£ 2,500,000	£ 2,500,000	1 item	£ 2,500,000	£ 2,500,000
Sub - Total	£ 9,500,000		£ 3,000,000	£ 3,000,000		£ 2,500,000	£ 2,500,000		£ 1,500,000	£ 2,500,000
Contingency	£ 950,000	10%	£ 300,000	£ 300,000	10%	£ 250,000	£ 250,000	10%	£ 150,000	£ 250,000
Total Off Site Highways & Associated Works to Summary	£ 10,450,000		£ 3,300,000	£ 3,300,000		£ 2,750,000	£ 2,750,000		£ 1,650,000	£ 2,750,000

COST PLAN Nr 2 Rev B DRAFT

BREAKDOWN

DESCRIPTION	TOTAL	CARROW WORKS		DEAL GROUND		MAY GURNEY		UTILITIES SITE	
D ON SITE HIGHWAYS & ASSOCIATED WORKS									
<u>Pedestrian / Cycle Routes</u>									
D1 Existing Pedestrian / Cycle Routes to be upgrade / converted	£ 700,000	1400 m	£ 500	£ 700,000					
D2 New Pedestrian / Cycle Routes	£ 1,608,750		Incl. Above		770 m	£ 750	£ 577,500	175 m	£ 750 £ 131,250
<u>Vehicular Routes</u>									
D3 Existing Vehicular Routes to be Upgraded	£ 1,350,000	1500 m	£ 900	£ 1,350,000					
D4 New Vehicular Routes	£ 4,625,000	1000 m	£ 1,250	£ 1,250,000	1000 m	£ 1,250	£ 1,250,000	400 m	£ 1,250 £ 500,000
<u>Site Access</u>									
D5 Remodelling of existing vehicular access from A147/A1054 roundabout (south of Carrow Works)	£ 500,000	1 item	£ 500,000	£ 500,000					
D6 New vehicular access at point of existing access form A147 (west of Carrow Works)	£ 750,000	1 item	£ 750,000	£ 750,000					
D7 Remodelling existing vehicular access from Bracondale (south of May Gurney)	£ 300,000							1 item	£ 300,000 £ 300,000
<u>Bridges / Underpass</u>									
D8 New vehicular bridge for cars, peds and cycles (across River Yare, north of May Gurney, south of Deal Ground)	£ 2,500,000							1 item	£ 2,500,000 £ 2,500,000
D9 New vehicular bridge for cars, peds and cycles (Fixed) (across River Wensum, south of Utilities Site)	£ 4,800,000							1 item	incl. £ 4,800,000 £ 4,800,000
D10 Improvement to existing underpass for peds and cycles (close to Trowse Bridge, between Carrow Works and Deal Ground)	£ 2,300,000	1 item	£ 2,300,000	£ 2,300,000	1 item	incl.		1 item	incl.
D11 New bridge across the River Wensum for peds and cycles on site of historic bridge alignment (north of Carrow Works)	£ 4,000,000	1 item	£ 4,000,000	£ 4,000,000					
D12 New bridge for Peds and Cycles across the River Yare (north-east of Deal Ground)	£ 2,000,000				1 item	£ 2,000,000	£ 2,000,000		
D13 Upgraded Cremorne Pedestrian and Cycle Bridge	£ 1,000,000							1 item	1,000,000 £ 1,000,000
<u>General Allowance</u>									
D14 General allowance for estate roads, other works, carrier drainage, road drainage, landscaping, land for sale costs, miscellaneous, etc Note; subject to receiving information from Design Team	£ 11,500,000	1 item	£ 4,500,000	£ 4,500,000	1 item	£ 3,000,000	£ 3,000,000	1 item	£ 1,500,000 £ 1,500,000
<u>Additional Items</u>									
Infrastructure to support Bus Services	£ 800,000	1 item	£ 800,000	£ 800,000					
Infrastructure to suport Electric Bike Hire	£ 600,000	1 item	£ 220,000	£ 220,000	1 item	£ 150,000	£ 150,000	1 item	£ 150,000 £ 150,000
Infrastructure to suport Electric Car Charging	£ 2,020,000	1 item	£ 940,000	£ 940,000	1 item	£ 560,000	£ 560,000	1 item	£ 80,000 £ 80,000
Sub - Total	£ 41,353,750			£ 17,310,000			£ 7,537,500		£ 5,161,250
Contingency	£ 2,475,375	10%	£ 1,101,000	£ 1,101,000	10%	£ 553,750	£ 553,750	10%	£ 266,125
Contingency (Bridges / Underpass)	£ 3,120,000	20%	£ 1,260,000	£ 1,260,000	20%	£ 400,000	£ 400,000	20%	£ 500,000
Total On Site Highways & Associated Works to Summary	£ 46,949,125		£ 19,671,000	£ 19,671,000		£ 8,491,250	£ 8,491,250		£ 5,927,375
E OFF SITE & ON SITE SERVICES									
Development-Wide Energy Centre Note; subject to receiving information from Design Team	TBC								
General allowance for Utilities Costs (electric, water, gas, etc.) Note; subject to receiving information from Design Team	£ 3,500,000	1 item	£ 1,000,000	£ 1,000,000	1 item	£ 1,000,000	£ 1,000,000	1 item	£ 500,000 £ 500,000
Sub - Total	£ 3,500,000			£ 1,000,000			£ 1,000,000		£ 500,000
Contingency	£ 350,000	10%	£ 100,000	£ 100,000	10%	£ 100,000	£ 100,000	10%	£ 50,000
Total Off Site & On Site Services to Summary	£ 3,850,000		£ 1,100,000	£ 1,100,000		£ 1,100,000	£ 1,100,000		£ 550,000
F OTHER OFF SITE & ON SITE DRAINAGE									
General Allowance for surface water, land drainage, foul water, etc. Note; subject to receiving information from Design Team	£ 9,500,000	1 item	£ 3,000,000	£ 3,000,000	1 item	£ 3,000,000	£ 3,000,000	1 item	£ 1,500,000 £ 1,500,000
Sub - Total	£ 9,500,000			£ 3,000,000			£ 3,000,000		£ 1,500,000
Contingency	£ 950,000	10%	£ 300,000	£ 300,000	10%	£ 300,000	£ 300,000	10%	£ 150,000
Total Other Off Site & On Site Drainage to Summary	£ 10,450,000		£ 3,300,000	£ 3,300,000		£ 3,300,000	£ 3,300,000		£ 1,650,000

COST PLAN Nr 2 Rev B DRAFT

BREAKDOWN

DESCRIPTION	TOTAL	CARROW WORKS		DEAL GROUND		MAY GURNEY		UTILITIES SITE				
G ECOLOGY & ARCHAEOLOGY												
General allowance for ecology and archaeology issues Note; subject to receiving information from Design Team	£ 1,000,000	1 item	£ 250,000	£ 250,000	1 item	£ 250,000	£ 250,000	1 item	£ 250,000	£ 250,000		
Sub - Total	£ 1,000,000			£ 250,000		£ 250,000		£ 250,000		£ 250,000		
Contingency	£ 100,000	10%		£ 25,000	10%		£ 25,000	10%		£ 25,000		
Total Ecology & Archaeology to Summary	£ 1,100,000			£ 275,000		£ 275,000		£ 275,000		£ 275,000		
H SITEWIDE LANDSCAPING												
Open Space Area		355,655 m2			282,849 m2			38,784 m2		183,993 m2		
General allowance for sitewide landscaping and public realm Note; subject to receiving information from Design Team	£ 6,500,000	1 item	£ 2,000,000	£ 2,000,000	1 item	£ 1,500,000	£ 1,500,000	1 item	£ 1,000,000	£ 1,000,000		
Low level riverside walk along banks of Wensum (Part of Flood Mitigation) Note; subject to receiving information from Design Team	£ 2,300,000				1 item	£ 1,150,000	£ 1,150,000	1 item	£ 1,150,000	£ 1,150,000		
Local public open and child play space as required Note; subject to receiving information from Design Team	£ 6,000,000	1 item	£ 6,000,000	£ 6,000,000	1 item	£ -	£ -	1 item	£ -	£ -		
Sub - Total	£ 14,800,000			£ 8,000,000		£ 2,650,000		£ 1,000,000		£ 3,150,000		
Contingency	£ 1,480,000	10%		£ 800,000	10%		£ 265,000	10%		£ 100,000		
Total Sitewide Landscaping to Summary	£ 16,280,000			£ 8,800,000		£ 2,915,000		£ 1,100,000		£ 3,465,000		
I MARINA DEVELOPMENT												
<u>Functional Construction</u>												
Excavation/disposal	£ 3,930,000				8460 m3	£125	£1,060,000			22925 m3	£125	£2,870,000
Sheet piling	£ 1,620,000				830 m2	£650	£540,000			1660 m2	£650	£1,080,000
Additional waterproofing to sheet piled walls	£ 405,000				25%		£135,000			25%		£270,000
Capping beam	£ 600,000				166 m	£1,200	£200,000			332 m	£1,200	£400,000
							<u>£1,935,000</u>					<u>£4,620,000</u>
<u>FF&Equipment</u>												
Jetties, lifting equipment, boat racking, etc	£ 3,000,000				1 item	£1,000,000	£1,000,000			1 item	£2,000,000	£2,000,000
<u>Buildings</u>												
Operational buildings (excl restaurants, retail, etc)	£ 4,000,000				1 item	£1,500,000	£1,500,000			1 item	£2,500,000	£2,500,000
Ground risk / Design development Contingency	£ 1,350,000				10%		£440,000			10%		£910,000
Sub - Total	£ 15,000,000			£ -			£ 5,000,000			£ -		£ 10,000,000
Contingency	£ 3,000,000	20%		£ -	20%		£ 1,000,000	20%		£ -		£ 2,000,000
Total Marina Development to Summary	£ 18,000,000			£ -			£ 6,000,000			£ -		£ 12,000,000

COST PLAN Nr 2 Rev B DRAFT

BREAKDOWN

DESCRIPTION	TOTAL	CARROW WORKS	DEAL GROUND	MAY GURNEY	UTILITIES SITE
J PLANNING OBLIGATIONS (WORKS TO BE DONE)					
Excluded - Advised by others		Excluded	Excluded	Excluded	Excluded
Sub - Total	£ -	£ -	£ -	£ -	£ -
Contingency	£ -	10% £ -	10% £ -	10% £ -	10% £ -
Total Planning Obligations to Summary	£ -	£ -	£ -	£ -	£ -
K SECTION 106 / CIL PAYMENTS					
Excluded - Advised by others		Excluded	Excluded	Excluded	Excluded
Sub - Total	£ -	£ -	£ -	£ -	£ -
Contingency	£ -	10% £ -	10% £ -	10% £ -	10% £ -
Total Section 106 / CIL Payments to Summary	£ -	£ -	£ -	£ -	£ -
L CONTINGENCY (SEE ALLOWANCE IN SEPARATE SECTIONS)					
Included within sections		Included	Included	Included	Included
Sub - Total	£ -	£ -	£ -	£ -	£ -
Contingency	£ -	10% £ -	10% £ -	10% £ -	10% £ -
Total Contingency to Summary	£ -	£ -	£ -	£ -	£ -
M FEES					
Excluded - Advised by others		Excluded	Excluded	Excluded	Excluded
Sub - Total	£ -	£ -	£ -	£ -	£ -
Contingency	£ -	10% £ -	10% £ -	10% £ -	10% £ -
Total Fees to Summary	£ -	£ -	£ -	£ -	£ -

COST PLAN Nr 2 Rev B DRAFT

BREAKDOWN

DESCRIPTION	TOTAL	CARROW WORKS				DEAL GROUND				MAY GURNEY				UTILITIES SITE											
O RESIDENTIAL LAND DEVELOPMENT																									
<i>Apartments</i>																									
1 Bed		54,093	m2	£	1,500	£	81,140,213	33,887	m2	£	1,500	£	50,830,463	2,713	m2	£	1,500	£	4,069,800	15,414	m2	£	1,500	£	23,120,625
2 Bed		48,684	m2	£	1,500	£	73,026,191	30,498	m2	£	1,500	£	45,747,416	2,442	m2	£	1,500	£	3,662,820	13,872	m2	£	1,500	£	20,808,563
3 Bed		5,409	m2	£	1,500	£	8,114,021	3,389	m2	£	1,500	£	5,083,046	271	m2	£	1,500	£	406,980	1,541	m2	£	1,500	£	2,312,063
Total	£	318,322,200				£	162,280,425					£	101,660,925					£	8,139,600					£	46,241,250
<i>Houses</i>																									
2 Bed		1,782	m2	£	1,750	£	3,119,266	1,340	m2	£	1,750	£	2,344,125	509	m2	£	1,750	£	890,851	1,664	m2	£	1,750	£	2,912,534
3 Bed		19,607	m2	£	1,700	£	33,331,581	14,735	m2	£	1,700	£	25,048,650	5,600	m2	£	1,700	£	9,519,375	18,307	m2	£	1,700	£	31,122,504
4 Bed		12,477	m2	£	1,650	£	20,587,153	9,377	m2	£	1,650	£	15,471,225	3,563	m2	£	1,650	£	5,879,614	11,650	m2	£	1,650	£	19,222,723
5 Bed		1,782	m2	£	1,600	£	2,851,900	1,340	m2	£	1,600	£	2,143,200	509	m2	£	1,600	£	814,492	1,664	m2	£	1,600	£	2,662,888
Total	£	177,922,080				£	59,889,900					£	45,007,200					£	17,104,332					£	55,920,648
<i>(The rates above include a ~15% allowance for achieving sitewide low / net zero carbon production)</i>																									
<i>Podiums</i>																									
Residential Podiums		20,219	m2	£	750.00	£	15,164,138	8,789	m2	£	750.00	£	6,592,050	-	m2	£	750.00	£	-	5,148	m2	£	750.00	£	3,861,038
Total	£	25,617,225				£	15,164,138					£	6,592,050					£	-					£	3,861,038
<i>Residential Land Development Abnormals</i>																									
Sub - Total	£	521,861,505				£	237,334,463					£	153,260,175					£	25,243,932					£	106,022,936
Contingency		104,372,301		20%		£	47,466,893		20%			£	30,652,035		20%			£	5,048,786		20%			£	21,204,587
Total Residential Land Development to Summary	£	626,233,806				£	284,801,355					£	183,912,210					£	30,292,718					£	127,227,523
O EMPLOYMENT LAND DEVELOPMENT																									
<i>Employment Development</i>																									
General Employment Use		27,926	m2	£	950	£	26,529,890	11,387	m2	£	950	£	10,817,365	-	m2	£	-	£	-	20,963	m2	£	950	£	19,914,565
Total	£	57,261,820				£	26,529,890					£	10,817,365					£	-					£	19,914,565
<i>Employment Land Development Abnormals</i>																									
Sub - Total	£	57,261,820				£	26,529,890					£	10,817,365					£	-					£	19,914,565
Contingency		5,726,182		10%		£	2,652,989		10%			£	1,081,737		10%			£	-		10%			£	1,991,457
Total Employment Land Development to Summary	£	62,988,002				£	29,182,879					£	11,899,102					£	-					£	21,906,022
P EDUCATION LAND DEVELOPMENT																									
<i>Education Development</i>																									
2FE Primary School		2,245	m2	£	3,750	£	8,500,000	-	m2	£	-	£	-	-	m2	£	-	£	-	-	m2	£	-	£	-
Use - TBC		-	m2	£	-	£	-	-	m2	£	-	£	-	-	m2	£	-	£	-	-	m2	£	-	£	-
Total	£	8,500,000				£	8,500,000					£	-					£	-					£	-
<i>Education Land Development Abnormals</i>																									
Sub - Total	£	8,500,000				£	8,500,000					£	-					£	-					£	-
Contingency		850,000		10%		£	850,000		10%			£	-		10%			£	-		10%			£	-
Total Employment Land Development to Summary	£	9,350,000				£	9,350,000					£	-					£	-					£	-

COST PLAN Nr 2 Rev B DRAFT

ASSUMPTIONS

DESCRIPTION	COMMENT
A DEMOLITION AND ALTERATION WORKS	
<p><u>Utility Disconnections & Decommissioning Works</u> Generally over site area (Provisional Sum)</p>	
<p><u>Asbestos Removal</u> Allowance (Asbestos surveys of existing buildings to be completed)</p>	<p>Asbestos Surveys of site and existing structures yet to be completed. Assumption made from the information available.</p>
<p><u>Demolition Works</u> Demolition & Removal of items 1-44 Removal of Hard Standings and Existing Roads</p>	<p>Items 1-44 of document '211012_Existing Building Areas Schedule_Retained' provided by A&M identifies existing buildings to be demolished and the estimated floor area of these structures. Demolition estimates are based on an estimated demolition area of approximately 96,300m² which has been split as follows: Carrow Works = 60% Deal Ground = 10% May Gurney = 20% Utilities Site = 10%</p>
B RECLAMATION AND EARTHWORKS	
<p>General allowance for site preparation, reclamation, retaining structures, remediation etc. Note; To be reviewed and refined as part of future design work</p>	<p>Allowance for pre-construction works based on an estimated cost of £400,000/ha over the total areas of each site.</p>
C OFF SITE HIGHWAYS & ASSOCIATED WORKS	
<p>General allowance for S278 Works & other Miscellaneous Utilities (offsite) Note; To be reviewed and refined as part of future design work</p>	<p>Allowance for additional crossings and provisions to assist with pedestrian and vehicular movement around site. Additional items may be included within future Masterplan revisions to allow for the management of additional traffic due to the introduction of this development.</p>

COST PLAN Nr 2 Rev B DRAFT

ASSUMPTIONS

DESCRIPTION	COMMENT
D ON SITE HIGHWAYS & ASSOCIATED WORKS	
<u>Pedestrian / Cycle Routes</u>	
D1 Existing Pedestrian / Cycle Routes to be upgrade / converted	Rates based on benchmark provided from previous similar projects. Route lengths measured from Masterplan Site Layout provided by A&M.
D2 New Pedestrian / Cycle Routes	Rates based on benchmark provided from previous similar projects. Route lengths measured from Masterplan Site Layout provided by A&M.
<u>Vehicular Routes</u>	
D3 Existing Vehicular Routes to be Upgraded	Rates based on benchmark provided from previous similar projects. Route lengths measured from Masterplan Site Layout provided by A&M.
D4 New Vehicular Routes	Rates based on benchmark provided from previous similar projects. Route lengths measured from Masterplan Site Layout provided by A&M.
<u>Site Access</u>	
D5 Remodelling of existing vehicular access from A147/A1054 roundabout (south of Carrow Works)	
D6	
D7 New vehicular access at point of existing access form A147 (west of Carrow Works)	
D7 Remodelling existing vehicular access from Bracondale (south of May Gurney)	
<u>Bridges / Underpass</u>	
D8 New vehicular bridge for cars, peds and cycles (across River Yare, north of May Gurney, south of Deal Ground)	Estimated dimensions: Span = 16m, Width = 13.3m. Assumed steel construction with concrete infills.
D9 New vehicular bridge for cars, peds and cycles (Fixed) (across River Wensum, south of Utilities Site)	Estimated dimensions: Span = 29m, Width = 13.3m. Assumed steel construction with concrete infills.
D10 Improvement to existing underpass for peds and cycles (close to Trowse Bridge, between Carrow Works and Deal Ground)	Assumed Option 2 of 'R_220211_Underpass Feasibility Study_draft_FINAL_220218'
D11 New bridge across the River Wensum for peds and cycles on site of historic bridge alignment (north of Carrow Works)	Estimated dimensions: Span = 30m, Width = 6.8m. Assumed steel construction with concrete infills.
D12 New bridge for Peds and Cycles across the River Yare (north-east of Deal Ground)	Estimated dimensions: Span = 20m, Width = 2.4m. Assumed steel construction.
D13 Upgraded Cremorne Pedestrian and Cycle Bridge	Assumed resurfacing and structural reinforcement works to existing bridge. No allowance for upgrade to provide vehicular access.
<u>General Allowance</u>	
D14 General allowance for estate roads, other works, carrier drainage, road drainage, landscaping, land for sale costs, miscellaneous, etc Note; To be reviewed and refined as part of future design work	Includes estate roads from main access routes throughout the sites to residential plots. Also includes allowance for driveways and routes to individual plots and associated drainage. Blended rate applied to allow for landscaping and development across remaining areas of the site.
<u>Additional Items</u>	
Infrastructure to support Bus Services	Assumed total 6nr Bus stops and associated infrastructure incl. signage, road widening, additional kerbs and bus shelters as required.
Infrastructure to support Electric Bike Hire	Provision of 64nr electric bikes (£1,000 per bike) and 32nr charging points (£300 per stand) at 8nr locations (£50,000 per location) spread across sites as designed by A&M. Additional allowance of approximately 20% included for design development.
Infrastructure to support Electric Car Charging	Assumed approximately 1,000nr EV Charging Points (£2,000 per point) across all sites and associated supporting infrastructure. Electric vehicle charging provided for Residential, Employment and Public use.
E OFF SITE & ON SITE SERVICES	
General allowance for Utilities Costs (electric, water, gas, etc.) Note; To be reviewed and refined as part of future design work	Allowance for the connection of utilities throughout the sites to developments.
F OTHER OFF SITE & ON SITE DRAINAGE	
General Allowance for surface water, land drainage, foul water, etc. Note; To be reviewed and refined as part of future design work	Allowance for drainage solutions across all sites to all buildings, public spaces and main vehicular / cycle / pedestrian routes.
G ECOLOGY & ARCHAEOLOGY	
General allowance for ecology and archaeology issues Note; To be reviewed and refined as part of future design work	General allowance for the resolution of any ecological / archaeological issues which may be identified after relevant surveys have been conducted across the sites.

COST PLAN Nr 2 Rev B DRAFT

ASSUMPTIONS

DESCRIPTION	COMMENT
H SITEWIDE LANDSCAPING	
<p>General allowance for sitewide landscaping and public realm</p> <p>Note; To be reviewed and refined as part of future design work</p> <p>Low level riverside walk along banks of Wensum (Part of Flood Mitigation)</p> <p>Note; To be reviewed and refined as part of future design work</p> <p>Local public open and child play space as required</p> <p>Note; To be reviewed and refined as part of future design work</p>	<p>General Landscaping across areas as provided by A&M within SPD. Rates based on recently completed comparable projects.</p> <p>Assumed 8m width for riverside walk and any necessary flood mitigation measures included. Allowance split between sites as measured from Masterplan drawings. Actual location of riverside walk TBC. Rates based on recently completed comparable projects.</p> <p>Allowance for 9nr play spaces and any associated equipment and furniture across all sites as designed by A&M. Rates based on recently completed comparable projects.</p>
I MARINA DEVELOPMENT	
<p>General allowance for the construction of Marina areas</p> <p>Note; To be reviewed and refined as part of future design work</p>	<p>Items included as identified within the cost plan. Surrounding buildings and Car Parking excluded.</p>
J PLANNING OBLIGATIONS (WORKS TO BE DONE)	
<p>Excluded - Advised by others</p>	<p>Rates and allowances to be confirmed by others. Estimates provided within IDP.</p>
K SECTION 106 / CIL PAYMENTS	
<p>Excluded - Advised by others</p>	<p>Rates and allowances to be confirmed by others. Estimates provided within IDP.</p>
L CONTINGENCY (SEE ALLOWANCE IN SEPARATE SECTIONS)	
<p>Included within sections</p>	
M FEES	
<p>Excluded - Advised by others</p>	<p>Rates and allowances to be confirmed by others. Estimates provided within IDP.</p>

COST PLAN Nr 2 Rev B DRAFT

ASSUMPTIONS

DESCRIPTION	COMMENT
O RESIDENTIAL LAND DEVELOPMENT	
<u>Apartments</u> 1 Bed 2 Bed 3 Bed	53m2 75m2 98m2 Rates Reviewed and updated where necessary. To be reviewed further against viability assessment and detailed specification.
<u>Houses</u> 2 Bed 3 Bed 4 Bed 5 Bed	86m2 111m2 124m2 130m2 Rates Reviewed and updated where necessary. To be reviewed further against viability assessment and detailed specification.
<i>(The rates above include a ~15% allowance for achieving sitewide low / net zero carbon production)</i>	Assumed provision of net zero carbon achievement throughout. No allowance for on-site energy centre included.
<u>Podiums</u> Residential Podiums	Provision of some basement/Ground Level parking, bicycle stores and bin stores. Grilles for acceptable street frontage where necessary. Design Team to provide outline plans for residential Podiums across sites and what may be included.
O EMPLOYMENT LAND DEVELOPMENT	
<u>Employment Development</u> General Employment Use	Types of employment use TBC. Blended rate provided to reflect varying uses across Employment areas provided. Industrial (circa £550/m2) up to Shell and Core Office Space (circa £1,500/m2)
P EDUCATION LAND DEVELOPMENT	
<u>Education Development</u> 2FE Primary School Use - TBC	Rate based on previous project experience. Land cost excluded.



SECTION 2 - A&M SCHEDULE OF AREAS (P06 DRAFT)

(DATED 18.02.2022)
(RECIEVED 29.03.2022)

Allies and Morrison

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 London SE1 0HX
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 info@alliesandmorrison.com

project name **EAST NORWICH**
 project number 20118

doc. name **AREA SCHEDULE - SUMMARY**
 doc. number 20118_2QA_001

doc. revision **P06 | 18.02.2022 | Draft Option**

Disclaimer Note:

1. Areas provided in this schedule represent design intent only and are to be confirmed by others. These figures are interim measures, they are subject to change as the design develops and should not be taken as final.
2. This schedule is not to be used for sales or marketing purposes.
3. GEA "mass footprints" are measured. Balconies are not defined.
3. Balconies are quoted separately and not included within the unit NIA.
4. Net areas are calculated from GEA areas, not measured (VARYING EFFICIENCIES BASED ON USE).
5. Does not include existing buildings area.

Ratio's

GEA:GIA	0.95
GIA:NIA (Apartments)	0.80
GIA:NIA (Houses)	1.00
GIA:NIA (Podium)	1.00
<hr/>	
GIA:NIA (School)	0.90
GIA:NIA (Employment)	0.80

Zone/Use	GEA sqm	GIA sqm	NIA sqm
Carrow Works	204,448	194,226	166,778
Residential Apartments	113,881	108,187	86,550
Residential Houses	37,525	35,649	35,649
Residential Podium	21,283	20,219	20,219
School	2,363	2,245	2,020
Employment	29,396	27,926	22,341
Deal Ground	120,779	114,740	98,908
Residential Apartments	71,341	67,774	54,219
Residential Houses	28,200	26,790	26,790
Residential Podium	9,252	8,789	8,789
Employment	11,986	11,387	9,109
May Gurney	16,429	15,608	14,522
Residential Apartments	5,712	5,426	4,341
Residential Houses	10,717	10,181	10,181
Utilities Site	94,973	90,224	79,866
Residential Apartments	32,450	30,828	24,662
Residential Houses	35,038	33,286	33,286
Residential Podium	5,419	5,148	5,148
Employment	22,066	20,963	16,770
Grand Total	436,629	414,798	360,075

RPS Calcs
47%
28%
4%
22%

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project name **EAST NORWICH**
 project number 20118

doc. name **AREA SCHEDULE - RESIDENTIAL SUMMARY**
 doc. number 20118_2QA_003

doc. revision **P06 | 18.02.2022 | Draft Option**

Disclaimer Note:

1. Areas provided in this schedule represent design intent only and are to be confirmed by others. These figures are interim measures, they are subject to change as the design develops and should not be taken as final.
2. This schedule is not to be used for sales or marketing purposes.
3. GEA "mass footprints" are measured. Balconies are not defined.
3. Balconies are quoted separately and not included within the unit NIA.
4. Net areas are calculated from GEA areas, not measured (VARYING EFFICIENCIES BASED ON USE).

Use	NIA sqm	Percentage
Residential Apartments	169,772	61.58%
Residential Houses	105,906	38.42%
Grand Total	275,678	100.00%

Zone/Use	NIA sqm	Percentage	Units
Carrow Works			
Residential Apartments	86,550	71%	1380
Residential Houses	35,649	29%	312
			1692
Deal Ground			
Residential Apartments	54,219	67%	864
Residential Houses	26,790	33%	234
			1099
May Gurney			
Residential Apartments	4,341	30%	69
Residential Houses	10,181	70%	89
			158
Utilities Site			
Residential Apartments	24,662	43%	393
Residential Houses	33,286	57%	291
			684
Grand Total	275,678	100%	3633

Site Wide Estimates

Apartments

No. Bedrooms	No. People	sqm	%	Units Total
1 BED	2	53	50.00%	1602
Apartments	4	75	45.00%	1019
3 BED	6	98	5.00%	87
				2707

Houses

No. Bedrooms	No. People	sqm	%	Units Total
2 BED	4	86	5.00%	62
3 BED	5	111	55.00%	525
4 BED	6	124	35.00%	299
5 BED	7	130	5.00%	41
				926
				Total Units 3633

RPS Calcs for GIA

(based on on 0.8:1 ratio)

Total NIA (m2)	Total GIA (m2)
84,886	106,107
76,397	95,497
8,489	10,611
169,772	212,215

(based on on 1:1 ratio)

Total NIA (m2)	Total GIA (m2)
5,295	5,295
58,248	58,248
37,067	37,067
5,295	5,295
105,906	132,383

Carrow Works Estimates

Apartments

No. Bedrooms	No. People	sqm	%	Units Total
1 BED	2	53	50.00%	817
2 BED	4	75	45.00%	519
3 BED	6	98	5.00%	44
				1380

Houses

No. Bedrooms	No. People	sqm	%	Units Total
2 BED	4	86	5.00%	21
3 BED	5	111	55.00%	177
4 BED	6	124	35.00%	101
5 BED	7	130	5.00%	14
				312

Total Units **1692**

RPS Calcs for GIA

(based on on 0.8:1 ratio)

Total NIA (m2)	Total GIA (m2)
43,275	54,093
38,947	48,684
4,327	5,409
86,550	108,187

(based on on 1:1 ratio)

Total NIA (m2)	Total GIA (m2)
1,782	1,782
19,607	19,607
12,477	12,477
1,782	1,782
35,649	44,561

Deal Ground Estimates

Apartments

No. Bedrooms	No. People	sqm	%	Units Total
1 BED	2	53	50.00%	512
2 BED	4	75	45.00%	325
3 BED	6	98	5.00%	28
				864

Houses

No. Bedrooms	No. People	sqm	%	Units Total
2 BED	4	86	5.00%	16
3 BED	5	111	55.00%	133
4 BED	6	124	35.00%	76
5 BED	7	130	5.00%	10
				234

Total Units **1099**

RPS Calcs for GIA

(based on on 0.8:1 ratio)

Total NIA (m2)	Total GIA (m2)
27,110	33,887
24,399	30,498
2,711	3,389
54,219	67,774

(based on on 1:1 ratio)

Total NIA (m2)	Total GIA (m2)
1,340	1,340
14,735	14,735
9,377	9,377
1,340	1,340
26,790	33,488

May Gurney Estimates

Apartments

No. Bedrooms	No. People	sqm	%	Units Total
1 BED	2	53	50.00%	41
2 BED	4	75	45.00%	26
3 BED	6	98	5.00%	2
				69

Houses

No. Bedrooms	No. People	sqm	%	Units Total
2 BED	4	86	5.00%	6
3 BED	5	111	55.00%	50
4 BED	6	124	35.00%	29
5 BED	7	130	5.00%	4
				89

Total Units **158**

RPS Calcs for GIA

(based on on 0.8:1 ratio)

Total NIA (m2)	Total GIA (m2)
2,171	2,713
1,954	2,442
217	271
4,341	5,426

(based on on 1:1 ratio)

Total NIA (m2)	Total GIA (m2)
509	509
5,600	5,600
3,563	3,563
509	509
10,181	12,726

Utilities Site Estimates

Apartments

No. Bedrooms	No. People	sqm	%	Units Total
1 BED	2	53	50.00%	233
2 BED	4	75	45.00%	148
3 BED	6	98	5.00%	13
				393

Houses

No. Bedrooms	No. People	sqm	%	Units Total
2 BED	4	86	5.00%	19
3 BED	5	111	55.00%	165
4 BED	6	124	35.00%	94
5 BED	7	130	5.00%	13
				291

Total Units **684**

RPS Calcs for GIA

(based on on 0.8:1 ratio)

Total NIA (m2)	Total GIA (m2)
12,331	15,414
11,098	13,872
1,233	1,541
24,662	30,828

(based on on 1:1 ratio)

Total NIA (m2)	Total GIA (m2)
1,664	1,664
18,307	18,307
11,650	11,650
1,664	1,664
33,286	41,608



SECTION 3 - MASTERPLAN DRAWING (DRAFT)



DRAFT - 11.02.2022

REV	DATE	DESCRIPTION	CKD
P1	06/09/21	Final Draft	IP
P2	12/10/21	Draft	IP
P3	27/10/21	Draft	IP
P4	10.02.22	Draft	IP

Do not scale from this drawing. Use figured dimensions only. Figured dimensions are in millimetres unless noted otherwise. All dimensions and levels shall be verified on site before proceeding with works. Detailed site survey to be carried out to verify positions and level relationships with site features and ordnance survey. The Architect must be notified of any discrepancy. Boundaries are indicative only and are to be verified by others. Where building components are described in the specification as Descriptive Specification (Contractor Design) elements shown on this drawing pertaining to those components are to be read as "Issued for Design Intent only". Allies & Morrison LLP is not responsible for any errors caused by the transmission, translation, software or computer systems. Allies & Morrison LLP is not responsible for any errors caused by the use of any software made of the drawings or models other than that for which they were produced by Allies & Morrison LLP for the Client. All Intellectual Property Rights reserved.

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East Norwich
Illustrative Site Plan
 SKETCH DRAWINGS
 20118-AAM-SK-001
 A&M JOB No: 20118

P4
 Revision

SCALE 1 : 2500 @A1 1 : 5000 @A3



SECTION 4 - INFORMATION USED

Information Used

DRAFT Final_East Norwich_SPD_lowest res

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20118_AAM_SK_001 - Illustrative Site Plan	P4
20118_AAM_SK_027 - Illustrative Ground Floor Land Use Plan	P1
20118_AAM_SK_028 - Illustrative Upper Floor Land Use Plan	P1
20118_Schedule_Area Schedule_220318	P06
R_220211_Underpass Feasibility Study_draft_FINAL_220218	Feb-22
211012_Existing Building Areas Schedule_Retained	
20118_DemoPlan_211012	
R_220211_Underpass Feasibility Study_draft_FINAL_220218	

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