

Report to Planning applications committee
Date 18April 2013
Report of Head of planning services
Subject 11/02104/O Land North Of Carrow Quay, Geoffrey Watling Way, off Kerrison Road / Carrow Road, Norwich

Item
5(4)

SUMMARY

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| Description: | Outline application with full details of access for residential-led development of between 200 and 250 No. residential flats (Use Class C3) and 140 car parking spaces with commercial office space (Class B1a), groundsman's facilities (Class B8), community uses (Class D1) and associated works including Riverside Walk and access road [revised proposal description, site plan, request to change proposed planning conditions and additional information received]. | |
| Reason for consideration at Committee: | Contrary to Policy; Changes to Committee's original resolution. | |
| Recommendation: | Approve | |
| Ward: | Thorpe Hamlet | |
| Contact Officer: | Rob Parkinson | Senior Planning Officer 01603 212765 |
| Valid Date: | 23rd December 2011 | |
| Applicant: | Broadland Housing Association | |
| Agent: | Iain Hill, Ingleton Wood | |

INTRODUCTION

The Site

Location and Context

1. The development is proposed on the gravel car park site on the land north of the River Wensum, accessed from the east end of Geoffrey Watling Way, off Carrow Road / Kerrison Road, at the football club. The site now concerns but does not technically include the buildings used for groundman's facilities to the south of the Test Bed industrial building and on the northern edge of the car park.
2. The development is a slightly amended form of the existing planning application under consideration that was heard by planning applications committee on June 21st 2012, and which received a recommendation to approve subject to a number of planning conditions and obligations within an associated Section 106 Agreement.
3. The original planning committee report and minutes thereof is available to view on the Council website at www.norwich.gov.uk – follow links to Committee Meetings – 2012 – June – 21st June.

Planning History

4. There has been some change in the planning circumstances in the area since the planning application was originally considered in June 2012, but nothing to affect the site itself. The apartments of the Taylor Wimpey housing scheme are currently being built adjacent to this site under planning permission 10/01107/RM (below) finally approved in October 2012. A number of these details are currently under consideration within application 12/02263/D (below). The Sports in the Community facility building north of the test bed building is also the subject of an application to increase the height of the existing roof (13/00274/F, see below).
5. None of the proposals are considered to affect, or be affected by, this Carrow Quay application either in its original form or as proposed to be revised.

10/01107/RM - Reserved Matters for the access, appearance, landscaping, layout and scale of the revised design of the second phase of the residential development (174 residential units) for outline planning permission (App. No. 4/2002/1281/O) 'Replacement of South Stand (8000 seats), new corner stand (1500 seats), hotel, decked car park and residential development with associated highway works'. - Revisions to terms of proposed Section 106 Agreement, revised siting of the buildings, revised designs of proposed residential apartment blocks, and inclusion of materials and further details to satisfy the terms of conditions proposed within former committee resolution of 14th October 2010. (Approved - 05/10/2012)

12/02263/D - Details of condition 3 - phasing arrangements, condition 6 - landscape and maintenance, condition 7 - Car Club car parking space, condition 8 - cycle and refuse storage and car parking, condition 11 - brown roofs and biodiversity enhancement, condition 12 - water efficiency measures, condition 14 - surface water drainage, and condition 16 - flood risk evacuation arrangements of planning permission 10/01107/RM 'Reserved Matters for the access, appearance, landscaping, layout and scale of the revised design of the second phase of the residential development (174 residential units) for outline planning permission (App. No. 4/2002/1281/O) 'Replacement of South Stand (8000 seats), new corner stand (1500 seats), hotel, decked car park and residential development with associated highway works'. - Revisions to terms of proposed Section 106 Agreement, revised siting of the buildings, revised designs of proposed residential apartment blocks, and inclusion of materials and further details to satisfy the terms of conditions proposed within former committee resolution of 14th October 2010'. (Pending consideration)

13/00274/F - Extension of existing Community Sports facility and increased roof height to provide classroom and enlarged multi-use hall/dance studio area and relocated stores. (Pending consideration).

Equality and Diversity Issues

There are no significant equality or diversity issues or changes as a result of the proposal.

The Proposal

6. The original application is proposed to be amended to introduce a replacement football club groundsman's hut facility within this scheme as the opportunity presents itself for incorporating such requirements whilst the application is not yet

determined and the final reserved matters designs are still being worked-up. Likewise, to offer flexibility to the design and the operation of the housing scheme, it is also requested that additional office floorspace and community use floorspace is allowed to be brought into the scheme. The proposal description changes as a result, to now include uses in Class B8 (groundsman's facilities) and Class D1 (community uses).

7. The applicant has also requested certain changes be made to the planning committee's list of conditions on its June 2012 resolution to grant planning permission. The original conditions within the report were themselves amended in the 'late additions / updates report' to committee on 21st June, and are listed definitively in the minutes of the meeting, provided for reference at Appendix 1. The proposed amendments affect the previous conditions intended for: (i) providing 10% energy generation on site [condition 31]; (ii) specifying floorspaces allowed for non-residential uses [condition 4 and a new condition]; (iii) making a number of minor technical changes to the remaining original conditions.
8. Additionally, revised plans have also been submitted to amend the development site boundary, to technically allow the scheme to include necessary highway improvements and connections such as a bus stop which the original plans technically did not allow for. These are minor and do not affect the material nature of the application or its proposals.

Representations Received

9. The proposed additional information and revised proposals have been advertised on site and in the press and adjacent and neighbouring properties have been notified in writing, as have all contributors to the original application. No further letters of representation have been received.

ASSESSMENT OF PLANNING CONSIDERATIONS

Relevant Planning Policies

The following planning policies are relevant to the alterations proposed, although the full list of established national policy and adopted local policy remains unchanged from June 2012. In addition, the East of England Plan has since been revoked and the emerging new local plan policies have been submitted for examination, so being afforded some more 'weight'.

National Planning Policy Framework:

- Section 1 – Building a strong, competitive economy
- Section 2 – Ensuring the vitality of town centres
- Section 4 – Promoting sustainable transport
- Section 7 – Requiring good design

Relevant policies of the adopted Joint Core Strategy for Broadland, Norwich and South Norfolk 2011

- Policy 2 – Promoting good design
- Policy 3 – Energy and water
- Policy 5 – The economy
- Policy 6 – Access and transportation
- Policy 9 – Strategy for growth in the Norwich Policy Area

Policy 11 – Norwich City Centre
Policy 12 – Remainder of Norwich area
Policy 19 – The hierarchy of centres

Relevant saved policies of the adopted City of Norwich Replacement Local Plan 2004

HBE12 - High quality of design in new developments
EP22 - High standard of amenity for residential occupiers
EP18 - High standard of energy efficiency in new developments
EMP1 - Small scale business development
EMP2 - Expansion of existing businesses
EMP16 – Office development – sequential test and criteria
TRA3 – Modal shift measures in support of NATS
TRA5 - Approach to design for vehicle movement and special needs
TRA6 - Parking standards - maxima
TRA7 - Cycle parking standards

Supplementary Planning Documents and Guidance

Other Material Considerations

Written Ministerial Statement: Planning for Growth, March 2011.
The Localism Act 2011 – s143 Local Finance Considerations
Emerging policies of the forthcoming new Local Plan (submission document for examination, April 2013):

Site Allocations Development Plan Document – Pre-submission policies (April 2013).

CC17: Land adjoining Norwich City Football Club, Kerrison Road
R12: Kerrison Road/ Hardy Road, Gothic Works

Development Management Policies Development Plan Document – Pre-submission policies (April 2013).

DM1 Achieving and delivering sustainable development
DM2 Ensuring satisfactory living and working conditions
DM22 Planning for and safeguarding community facilities
DM28 Encouraging sustainable travel
DM29 Managing car parking demand in the city centre
* **DM30** Access and highway safety
DM31 Car parking and servicing

* This DM30 policy is currently subject to objections or issues being raised at pre-submission stage and so only minimal weight has been applied in its content. However, the main objective of ensuring safe passage around and within a development and prioritising pedestrian and cycle passage remains in place through Local Plan policies TRA3 and TRA5.

Procedural Matters Relating to the Development Plan and the NPPF

The Joint Core Strategy and Replacement Local Plan (RLP) have been adopted since the introduction of the Planning and Compulsory Purchase Act in 2004. With regard to paragraphs 211 and 215-216 of the National Planning Policy Framework (NPPF), both sets of policies have been subjected to a test of compliance with the NPPF. The 2011 JCS policies are considered compliant, but some of the 2004 RLP policies are considered to be only partially compliant with the NPPF, and as such those particular policies are given lesser weight in the assessment of this application. The Council has also reached submission stage of the emerging new Local Plan policies, and considers most of these to be wholly consistent with the NPPF. Where discrepancies or inconsistent policies relate to this application they are identified and discussed within the report; varying degrees of weight are apportioned as appropriate.

Principle of Development

Policy Considerations

10. As a maximum, the groundsman's hut will require 279sq.m. interior floorspace, which the submitted proposed block plans suggest would be approximately only 6% of the ground floor area, and be easily accommodated in the final floor plan designs without compromising the maximum 140 car-parking space quota permitted in the resolution [condition 5].
11. The applicant requests that additional commercial office space (Use Class B1(a)) be allowed in the proposal. The initial description included a small 190sq.m. area for a local neighbourhood office, and resolution condition 4 sets this as a maximum value. The applicant does not consider it necessary to set a maximum limit on the amount of commercial floorspace in any permission. The proposal also requests such flexibility for introducing community uses within the D1 use class, and not 'capping' such floorspace.
12. This is not considered an acceptable precedent, however, because office space and community uses are required to be located in sustainable, accessible and sequentially preferable locations where there is suitable means of public transport and similar uses. The site will eventually be much better served by public transport but any uncontrolled development could potentially compete and cause an impact on existing centres, or become such an attraction as to cause undesirable transport or amenity impacts at the site. In addition, the original condition was imposed to ensure the B1a use was large enough to ensure the facility served only the immediate scheme, and because the application has not been accompanied by a sequential assessment to try and justify the out-of-centre location (which would also be required for the newly-proposed D1 use).
13. It is therefore proposed to limit both B1a commercial floorspace to a maximum 400 sq.m. and D1 community uses to a maximum 300 sq.m, which should be sufficient to allow some level of service or activity to serve the local area. In addition, the locations will be required by condition to be provided at ground floor level only, to ensure both activity at street level and limit the potential for expansion, and the D1 uses would be restricted by conditions to preclude certain inappropriate uses such as bingo halls, dance halls and other such uses that are not community-based. In combination with the 279 sq.m. B8 uses, this allows up to 979sq.m. non-residential floorspace, which itself is fairly significant.

Other Material Considerations

14. Members may be aware that the policies for the site are proposed to be changed through the newly-submitted new local plan site specific allocations document. The proposal does not materially change the way the development of the site is considered against these policies, and the expectations of development are consistent in the emerging policy (having in part been based on the application of the time).
15. Neither are the newly-submitted development management policies expecting any significant change to local plan policy as may be considered to be affected by these revisions.
16. Members should note a number of changes to the form of proposed conditions

have resulted in the following amalgamations of those originally listed, as below:

- Condition 12, 13 and 14 regarding phasing have been combined to be more succinct and workable; there will be no change to the expected delivery of the riverside walk, bus gate, landscaping or access road however.
- Condition 22 regarding rainwater harvesting is proposed for amalgamation into condition 2 to require water storage, efficiency and harvesting as a part of the overall drainage and flood risk mitigation strategy;
- Conditions 38 and 29 regarding acoustic glazing and balconies / balustrades to be revised to be more specific to the application's acoustic survey and results provided therein, and be consistent with specifications at the adjoining site;
- Condition 61 can be deleted as this required lighting specifications to be agreed but was a repeat of other existing conditions. The bat friendly requirements can be transferred to the other pre-existing conditions.

The final numbering of the conditions may need to change before the permission is issued.

Housing Proposals

Affordable Housing

17. The changes requested do not affect the housing numbers proposed / approved in principle in this application. The alterations to the site plan do however suggest that land may become available for future development on the site of the existing groundsman's hut north of this site, which might include some residential proposals.

Impact on Living Conditions

18. There will be no impact on neighbouring uses as a result of including the groundsman's hut or revising the site plan, but the future designs of residential uses above the relocated stores will have to take into account the possible noise creation by vehicle movements and loading etc. Noise is likely to be minimal and the residential flats would likely be constructed on a thick podium over the car park, which noise should not penetrate.

Design

Layout, form and impact on adjoining conservation area

19. The inclusion of the relocated groundsman's hut in the layout will potentially create a further length of 'inactive frontage', which would not be ideal if it were sited in the position indicated in the suggested block layout, because the corner of the site shown is anticipated to be a key linking route between this site and the adjoining Gothic Works, where a busy corner would be beneficial for vibrancy and surveillance. However, the increased opportunity for new or expanded office space and community uses within the proposal means the development could provide even more activity and vibrancy than would otherwise be the case with the original proposal just having servicing and car parking at ground level. Notwithstanding these factors, this revisions proposed concern a matter of principle only and the design and finishing details would need to be accommodated within the reserved matters application.

20. The applicant now proposes that the scheme be built using a design and construction system known as Passivhaus. By its nature, Passivhaus can sometimes appear 'blocky' in its outlook as the emphasis is placed on a high quality of structural design and insulation which could minimise architectural flourishes. Pre-application discussions suggest the design can still be adventurous though,

and design is again an issue to be addressed at reserved matters.

Transport and Access

Transport Assessment

21. The proposal to include groundman's facilities will include more service vehicle movements directly to the site but these are minimal and outside of peak hours and dispersed from the existing site directly opposite, so is not considered to be a significant concern. The expanded areas for office and/or community use would theoretically increase the floorspace and potential to attract additional car journeys to the site, but this is not a significant issue and the impacts would be constrained by use of (amended) existing conditions and the (already-required) stringent Travel Plan requirements.

Car parking, cycle parking, cycle and pedestrian links and Travel Plan

22. Car parking quotas were originally fixed by condition to provide a maximum 140 spaces for residential use, with some 5 space maximum allowance for commercial use, and additional visitor spaces, at least 5% disabled space provision, and a car club car space through the travel plan, to be included in the layout [resolution condition 5].

23. These allowances were based on careful transport assessment and travel habit surveys of similar schemes in the area. It is not proposed to increase this maximum cap nor the stated non-residential uses, but instead introduce some flexibility in principle to vary the proportion of parking uses available at the site if the reserved matter designs and proportion of floorspace uses and distribution justify a variation. Therefore by varying the eventual final wording of the existing proposed planning conditions to accommodate any further office or community use parking needs as may be necessary, the scheme retains a baseline standard provision and flexibility for adaptaton. Cycle parking can likewise also be increased to match the needs of expanded office and community use in the reserved matters. The Travel Plan remains unchanged.

Environmental Issues

Waste Management

24. No changes will be needed to refuse and servicing arrangements, so long as additional space is allowed for in the final designs, as commercial refuse storage and collection is a private concern.

Flood Risk

25. Parts of the site are within Flood Risk Zone 2. The community uses and office uses, if restricted by condition to require flood risk protection and mitigation measures will not be vulnerable in flood risk terms, and it is considered appropriate to expand the terms of Condition 9 to require flood risk protection measures and finished floor levels as appropriate as per the existing office use requirements.

Energy Efficiency and Renewable Energy

26. The applicant now proposes that the scheme be built using a design and construction system known as Passivhaus, whereby the aim is to avoid the need to generate energy through maximum energy efficiency standards of design rather than the need to provide some proportion of its otherwise-unnecessary energy through renewable or decentralised sources on-site. This would mean the expectations of the original condition 31, and thereby the requirements of

development plan policy Joint Core Strategy policy 3, would not be met and so be contrary to policy.

27. The outline planning permission can provide this energy efficient requirement in principle, through a revised form of condition 31, and require design and construction to be of a high standard. However, there needs to be a clause in the condition that the prospective design includes 10% renewable energy generation measures on site if the energy efficiency standard is not met. This is practical, appropriate and reasonable.
28. The applicant has submitted a Passivhaus design statement, and this is appended at Appendix 2. Pre-application discussions on the design and specification of the reserved matters is very encouraging and the intention to use such features is laudable, but the principle is under consideration at this stage. Overall, whilst a Passivhaus design may not provide demonstrable renewable energy generation, the environmental performance of buildings that generate miniscule energy in the first instance is much more beneficial than 'standard' construction with some renewable features. The amendment to allow such high standards of energy efficiency instead of on-site 10% energy generation is therefore considered acceptable in principle and an amended condition can be used.

Plant

29. If buildings were designed without the renewable technologies or heating plant required there could be resultant benefits for neighbour and residential amenity if a potential source of noise is removed from the designs.

Local Finance Considerations

30. The revisions will help the development come forward expediently and act as 'enabling development' to release the potential of an underused adjoining site to the north.

Planning Obligations

31. Planning obligations as previously required by Committee resolution do not change as a result of this proposal.

Conclusions

32. The changes proposed will enhance the sustainability of the proposal in principle, and make the overall development much more functional to residents at the site. The design issues are all a part of the reserved matters consideration and the scheme will not cause a detrimental impact on future proposals or existing neighbouring developments, and will enhance development potential of an underused adjoining site. As such the alterations proposed enable the committee's original resolution to be retained, subject to the alterations to conditions as listed below.

RECOMMENDATIONS

To approve Application No 11/02104/O Land North Of Carrow Quay, Geoffrey Watling Way, off Kerrison Road / Carrow Road, Norwich, as revised, and grant planning permission to include the revised proposal description and site plan, subject to the

resolution of Planning Committee on 21st June 2012 with the following variations being made to proposed conditions:-

- New condition – the B8 use will be for groundsman’s facilities only, and limited to a maximum 279sq.m. internal floorspace;
- Condition 2 - development to be in accordance with a flood risk assessment and drainage strategy that follows the principles of the June 2012 scheme but in accordance with a scheme to be revised to reflect introduction of new uses;
- Condition 4 – revised terms, to limit commercial floorspace to a maximum 400 sq.m. and community uses to a maximum 300 sq.m, and for both facilities to be provided at ground floor only, and for D1 use to not include certain uses that are not community-based;
- Condition 5 – introduce flexibility for reserved matters to establish parking allowance for additional uses as necessary;
- Condition 9 – revise to require minimum finished floor level of non-residential use units to be 2.3m AOD;
- Condition 12, 13 and 14 regarding phasing to be amalgamated with no change to the overall content / delivery of the riverside walk, bus gate, landscaping or access road;
- Condition 22 regarding rainwater harvesting is proposed for amalgamation into condition 2 to require water storage, efficiency and harvesting as a part of the overall drainage and flood risk mitigation strategy;
- Condition 31 revised to allow highly energy efficient / Passivhaus construction in lieu of on-site energy generation, with contingency clauses as appropriate;
- Conditions 38 and 39 to be revised to be more specific to the application’s acoustic survey and results provided therein, and be consistent with specifications at the adjoining site;
- Condition 61 – delete, with bat friendly requirements transferred to other conditions.

Appendix 1:

Minutes and resolution of Planning Committee of 21st June 2012

Appendix 2:

Passivehaus design overview from applicant

**EXTRACT FROM THE MINUTES
PLANNING APPLICATIONS COMMITTEE
21 June 2012**

Present: Councillors Bradford (chair), Sands (M) (vice chair), Ackroyd, Blunt (substitute for Councillor Gee), Howard, Kendrick, Lay, Little, Neale, Rogers, and Stonard

ITEM 9

APPLICATION NO 11/02104/O: LAND NORTH OF CARROW QUAY, KERRISON ROAD, NORWICH

The senior planner (development) presented the report with the aid of plans and slides. As a further update to the report he said that in relation to paragraph 192, by way of a correction, stopping-up orders would require a separate process and payment from the developer rather than being included within Traffic Regulation Order procedures. The green wall mentioned at condition 37 was an idea to break up the design but would not be a requirement of planning permission. The street art was a historic requirement for comprehensive regeneration of the area and was not considered onerous on the applicant and could comprise any range of measures such as a plaque to commemorate the history of the site or landscaping feature. The senior planner then referred to the supplementary report of updates to reports which was circulated at the meeting and included details of additional representations received since the papers for the committee were published and further information on the application. The supplementary report also contained a list of changes to the conditions agreed by the applicant with the case officer. Members were advised that the application was compliant with the policy on affordable housing but could be subject to change when the detailed planning application was submitted; if this was the case members would be asked to consider any variations.

Discussion ensued in which members commented on the fact that the development was car free but that the site was not on a direct bus route. Members were advised that it was envisaged that an existing bus route would be diverted to include Geoffrey Watling Way. It was also noted that the scheme would connect into and improve existing pedestrian and cycle routes from the site to the city centre, railway station and the riverside walk, itself being designed to be wide enough to accommodate a shared surface route for cyclists as well as pedestrians. Discussion also followed around the implications for nearby train deliveries and its potential noise impacts and the energy efficiency of the development. Cycle parking was noted by members as being shown to currently be too low at present, but officers advised that this would be required by conditions to be provided for each residential unit.

RESOLVED to approve application no 11/02104/O at Land North Of Carrow Quay, Kerrison Road, Norwich, and grant planning permission, subject to the completion of a satisfactory S106 agreement to include the provision of contributions to affordable housing, street trees provision and maintenance, riverside walk and cycle route,

water-borne recreation facilities, sustainable transport improvements, strategic highways safety management through CCTV enhancement, traffic regulation orders and processing of highways works, travel plan completion and fulfillment to include membership of the car club and a bond (or equivalent means of financial security) and annual travel plan monitoring contributions, library contributions, and monitoring contributions, and subject to the following conditions:

Further info and commencement

1. Submission of reserved matters (scale, layout, appearance and landscaping) within 3 years and commencement by whichever is the later of:
 - a. either 5 years of this permission; or,
 - b. within 2 years of approval of reserved matters (or in the case of submission of reserved matters on different dates, two years from approval of final reserved matter to be approved).
2. Development shall be in accordance with plans and details as approved including the Flood Risk Assessment and its Appendix M proposed drainage strategy plan D133709_SK-01 RevP2 and associated calculations and capacity for certain storage.
3. Cap on numbers – minimum of 200 and maximum of 250.
4. Cap on office floorspace – maximum 190 sq.m.
5. Cap on car parking – maximum of 140 spaces overall, which shall include a maximum 5 spaces for the office space, some spaces for visitors to the site, including for office visitors, and a minimum 5% for disabled users of the offices and some disabled spaces for residents.
6. Limits / parameters of scale – maximum heights at eastern end and maximum heights of development overall.
7. Limits / parameters of layout – maximum depth of to be specified for the building, required clearance of 8-9m from the river edge, minimum of at least 1 through-passage within the development from the access road to riverside.
8. Minimum finished floor level of residential units to be 3.78m above Ordnance Datum (AOD).
9. Minimum finished floor level of commercial uses to be 2.3m AOD..
10. Removal of permitted development rights for satellite dishes, gates walls and fences, and removal of local development order rights for changing window and door replacements.

Prior to commencement of development / each phase

11. Development shall not be commenced until details of scale, layout, appearance and landscaping have been submitted and approved.
12. Phasing plan to be agreed for development at this site – to show delivery of road, of riverside walk and associated landscaping at this site, of access improvements, of bus gate provision, and affordable housing. The details shall include a masterplan for the entire length of the riverside walk and landscaping scheme, and incorporation of river features in principle, including scenarios for this development site, showing relationship to, and links with, pontoons / possible river taxis – to be approved prior to commencement and riverside walk to be provided prior to occupation.
13. Phasing plan to be agreed for delivery of riverside walk along its full length (but not including this development site), from Carrow Bridge to the railway bridge.
14. Phasing plan timescales for provision to be agreed for delivery of an adoptable standard of access and estate roads around and outside this

- development site, including street landscaping and tree planting and the necessary works to the area around the football club south stand.
15. Road construction content and design details of the access road (to an adoptable standard) for development at this site – to include: levels, traffic and speed control measures, carriageway markings, alignment, dimensions, materials, drainage, street tree planting and irrigation, street furniture, lighting, pavements, crossovers, shared surfacing and other hard landscaping, and utilities routes to avoid trees, for example.
 16. Details of all necessary works to the river and a protected species survey and protection / impact mitigation proposals.
 17. Details of site investigation and risk assessment for protection of controlled waters; verification reports; monitoring and maintenance procedures of contingency action as necessary.
 18. Development contamination precaution requirements.
 19. Details of reports concerning use of imported soils.
 20. Details of foundation plans with regard to archaeological preservation and a method statement, with development to follow approved method statement.
 21. Details of a construction management plan.
 22. Details of car park containment barriers for 1 in 100 year and 1 in 1000 year flood events to be designed into the RM scheme, or in the event that this isn't proposed, details of car park flood warning and evacuation plan procedures instead, to show how cars can be relocated to a dry location above flood levels, all to be agreed with the Environment Agency.
 23. Details of water harvesting system as required by drainage strategy, which shall demonstrate at least 161m³ rainwater harvesting capacity.
 24. Details of final site design and development's relationship to the adjoining site's proposed flood defence wall.
 25. Details of Japanese Knotweed eradication plans.
 26. Cycle parking for residents and visitors of residents to be agreed and thereafter provided prior to occupation.
 27. Cycle parking for office staff and office visitors (close to entrance) to be agreed and provided prior to first use of office.
 28. Scheme for flood resilient construction measures in the commercial development to be agreed.
 29. Site contamination investigation and mitigation – four-part requirement, including provision of contamination mitigation measures and verification reports as relevant and details of proposals for long term contamination monitoring, precaution, maintenance and contingency plans.
 30. Details to be agreed for installing pollution control measures, to include infiltration measures to prevent pollutant discharge into the river.
 31. Details of energy efficiency proposals and details of providing at least 10% of site's energy demand from renewable energy sources on site.
 32. Biodiversity enhancement and green infrastructure plan schemes to be agreed, to include enhanced biodiversity and biomass in landscaping and tree planting, improved riverside green links habitat corridor, bat and swift boxes, to include developing a belt of native tree species, reinforced by further planting within the development itself, and to include shrubs that provide nectar for insects and/or fruit for birds.
 33. Details of refuse stores for residential and details of collection, including office waste management, and provision of stores prior to occupation.
 34. Details of water efficiency savings around the site, to include a minimum of achieving at least 105 litres/person/day for all residential dwellings.

35. Details of the design security measures to be included in the proposals, to include best endeavours to reach full Secured by Design accreditation, and to include details where possible concerning: car park security and access control systems; lighting, reflective paint, entrance access controls; CCTV; natural surveillance; and public and private space boundaries.
36. Hard and soft landscaping materials and plant species, to show regard to green infrastructure and biodiversity enhancement plans previously required, and to detail provision for on-site amenity space landscaping.
37. Details of plinth wall around the street frontage, including any possible green wall treatments to south elevation, and boundary treatments to stairs and podium amenity areas.
38. Details of all acoustic glazing specifications, to include a red rating façade protection treatment with a dB reduction of at least 27dB when closed, with details of ventilation as necessary.
39. Details of all balustrades and balconies, and roof-top garden acoustic barriers as appropriate, including noise mitigation standards with at least 1.5m height to the barriers.
40. Details of visitor, drop-off and servicing parking.
41. Details of boundary treatments, gates, street-scape fenestration and activity, stairs and entrances to south elevation / riverside walk and safety barriers, and details of level access direct from south-elevation to riverside walk area.
42. Details of all materials, including roofing, windows, façade, walls, doors, eaves, verges, rainwater goods etc.
43. Details of riverside walk landscaping, to include a specification with: lighting; bollards to prevent unauthorised vehicular access but allow service vehicles; seating; life belts; ducting for future electrical/CCTV supply cables to enable CCTV coverage at a later date; an access to the river bank for service vehicles; mooring bollards; safety chains; safety ladders; and riverbank fendering as necessary, with a minimum 3.75m shared surface within an 8-9m landscape area.
44. Details of Flood Resilient Construction methods in the commercial units.
45. Details of an art installation or public art strategy to be included within the landscaping and public realm around the site.
46. Dust control measures and materials storage proposals.
47. Details of provision of appropriate levels of fire hydrants.
48. Details of car parking and motor cycle parking.
49. Details of obscure glazing to all bathroom windows.
50. Requirement for landscaping maintenance and management plans.
51. Ongoing landscaping maintenance requirements.

Prior to first occupation

52. Estate roads needs to be constructed to an adoptable standard prior to occupation.
53. No occupation of any part of the development until the access road has been provided in accordance with details to be approved by condition on road design, above.
54. Works to create the Toucan crossing and Carrow Rd / Koblenz Ave improvement has been provided to a standard to be agreed, to adoptable levels.
55. Car parking to be provided and made available as per details to be agreed in advance.
56. Car parking management plan, including arrangements for allocation of spaces to particular uses, residents and visitors, and provision for, and use of, car club space.
57. Details of managing and maintenance plans for the surface water drainage system for the lifetime of the development.
58. Details of a flood evacuation and response plan to be agreed, based on principles of Appendix O of the FRA.
59. residential flood response plans including access and evacuation plans.
60. commercial elements flood response plans including access and evacuation plans.
61. Lighting scheme details, to be only low spill, 'bat friendly' external lighting which limits the amount of light directed over the river.
62. Travel Plan to be revised and completed along the principles of the Travel Plan submitted with the application, and implemented on occupation thereafter.
63. Details of plant and machinery to be approved before installation.

(Reasons for approval: The decision to approve the development subject to the conditions and the fulfilment of the Section 106 Agreement has been taken with regard to the provisions of national planning policy, the development plan and all other material considerations. The proposed residential development will help meet the city's identified housing need and make an efficient and appropriate use of this brownfield redevelopment site in a manner consistent with the principles of regeneration of the East Norwich area. The conditions imposed will ensure the development not only makes residential and car-free development sustainable and accessible whilst avoiding detrimental impacts on highway safety, it will also provide a high quality of design which accounts for the necessary restrictions imposed through its prominent riverside location and proximity to the conservation area and established local industry. Subject to agreement of appropriate forms of reserved matters and compliance with conditions, the proposals will also provide acceptable levels of amenity for future residents, and will also complete the Riverside Walk recreation facility for the enjoyment of both the residents and city of Norwich, and provide a key habitat link towards the Broads.

As such the development is in accordance with the objectives of the National Planning Policy Framework, policies SS1, T14, ENV3, ENV6, ENV7, WAT1, WM6, ENG1 and NR1 of the East of England Plan (2008), saved policy T.2 of the adopted Norfolk Structure Plan (1999), policies 1, 2, 3, 4, 6, 9, 12, 19 and 20 of the Joint Core Strategy for Broadland, Norwich and South Norfolk, and saved policies NE1, NE4, NE8, NE9, HBE4, HBE7, HBE12, HBE13, HBE14, EP1, EP5, EP6, EP16, EP17, EP18, EP22, TVA3, EMP1, EMP7, EMP9, EMP14, EMP15, EMP 16 HOU5, HOU6, HOU9, HOU12, HOU18, SR2, SR4, SR7, SR11, SR12, TRA3, TRA5, TRA6, TRA7,

TRA8, TRA9, TRA10, TRA11, TRA12, TRA14, TRA15, TRA16, TRA18 and CC14 of the adopted City of Norwich Replacement Local Plan (2004.)

- (2) to authorise any appropriate enforcement action and the taking of legal proceedings, including prosecution if necessary, in respect of the delivery of the riverside walk and access road.

PASSIVHAUS OVERVIEW

Riverside, Norwich

- A: *What is Passivhaus?*
B: *How is Passivhaus achieved?*
C: *What are the implications on overall design aesthetic and technical specification?*
D: *How Does Passivhaus Compare to Code for Sustainable Homes Level 3?*
E: *Why is Broadland Housing going Passivhaus?*

a) What is Passivhaus?

Passivhaus is an energy performance standard for buildings, which generally goes beyond most countries' statutory design legislation for conservation of fuel and power.

Passivhaus was developed in the late 1980s by Professors Bo Adamson and Wolfgang Feist, and now boasts over 25,000 certified buildings across Europe, not to mention growing numbers on other continents (inc. Americas and Australasia). Within the context of this worldwide take-up of Passivhaus, the UK is beginning to come to terms with its clear benefits although, at present, there are few (approximately 50) certified developments here.

Passivhaus is a registered company – intended to streamline and verify building performance - but the principles behind the passive design approach are not right-protected. Rather, they are in many ways a progression of established Northern European construction techniques, developed into a building design and construction philosophy that is flexible to most climates and locations. Whilst originally developed to suit residential developments, Passivhaus has in recent years evolved to allow application in other building typologies such as schools, universities and offices.

The Passivhaus Standard is embodied in two aims for a new residential property:

- Maximum space heating demand less than 15kWh/m²/year
- Total primary energy load less than 120kWh/m²/year

This is achieved by;

- Super insulated building
- Air tight – leakage through fabric no more than 0.6 air changes per hour
- No central heating system
- Continuous supply of fresh and clean air through heat recovery ventilation system

b) How is Passivhaus achieved?

The Passivhaus Standard requires the adoption of several design principles. In the first instance, the concept behind Passivhaus is that a highly insulated box is created to ensure that the internal environment does not fluctuate in line with the external weather/climate. The stable internal environment is then conditioned by Mechanical Ventilation (MV) systems to guarantee optimum air quality. The insulated box is primarily heated by solar gain (through windows) or internal gains from occupants and equipment – with only a small heated towel rail, or similar, supplementing the internal temperature.

In practice, this scenario is achieved through high levels of insulation around an airtight building fabric, which is detailed to remove almost all thermal bridges. Additional energy savings are given by the specification of Mechanical Ventilation system with Heat Recovery (MVHR), which captures heat from exhaust air and uses it to pre-heat the incoming fresh air supply.

The process of determining Passivhaus Standard is based around the Passivhaus Planning Package (PHPP), which is a technical calculation tool for modelling building performance. Data is inputted to PHPP through the design phase, with results used to inform various elements of the building proposal (including glazing ratios, insulation thicknesses, orientation etc.). During construction, the building is tested for air-tightness and integrity of the fabric with respect to thermal bridging. Post-completion, all data is recalculated in the PHPP software, taking into account any evolutionary design or specification amendments.

As required - and subject to satisfactory PHPP and air-tightness results – a building can then be certified as Passivhaus.

c) What are the implications on overall design aesthetic and technical specification?

The reliance on passive heating gains (including solar) to bring internal spaces up to temperature places significant importance on the thermal integrity of the external fabric. As such, detailed design is needed much earlier to mitigate thermal bridging risks around junctions and window reveals etc.

U-values of the external fabric will typically be in excess of current UK Building Regulations, with roofs and walls performing at $0.15\text{W}/\text{m}^2\text{K}$ (compared to $0.25\text{W}/\text{m}^2\text{K}$ in AD Part L). This performance needs to be maintained across the building envelope, leading to triple-glazed windows and doors (notionally $0.9\text{W}/\text{m}^2\text{K}$ compared to $2.0\text{W}/\text{m}^2\text{K}$ in AD Part L).

Alongside this, the sensitivity of the fabric performance to thermal bridging and air leakage tends to naturally induce simple geometric building forms. Whilst undulation can be achieved within facades, it needs to be very carefully deployed as all corners and steps represent a compromise in the external fabric performance.

Passive solar gain within the scheme also needs to be carefully managed – it is beneficial in winter but carries an overheating risk during summer months. As a result, window sizes and positions are informed by the Passivhaus design calculations, and shading control is usually necessary on buildings.

d) How Does Passivhaus Compare to Code for Sustainable Homes Level 3?

The Standard Assessment Procedure (SAP) represents the national standard for demonstrating energy performance in dwellings, and a calculation is required as part of a Building Control submission for all development work.

SAPs will be used to demonstrate that properties within this development have been constructed to ensure a reduction in the energy demand required to meet current Building Regulations (Approved Document Part L1A: Conservation of Fuel & Power (new Dwellings)) of at least 30%.

In real terms, a Code 3 two-bedroom apartment (65m²) could be expected to achieve a Fabric Energy Efficiency of 48kWh/m²/year – giving an annual space heating demand of 3120kWh/year.

Where the same property is built to Passivhaus standards, the Fabric Energy Efficiency is required to be 15kWh/m²/year – giving an annual space heating demand of approximately 975kWh/year.

A Passivhaus dwelling would, therefore, achieve a reduction in heating energy demand - over a similar Code 3 property – of at least 30%.

e) Why is Broadland Housing going Passivhaus?

Overview

Broadland Housing has committed in its corporate strategy for 75% of new development to be to Passivhaus standards. This is a major step towards zero carbon in advance of the Government target of 2016.

There are two reasons for favouring Passivhaus;

- A preference for fabric first over renewable technologies
- Passivhaus has a better record of delivering real savings in energy use for building users than the Code for Sustainable Homes

These issues are explained more fully below.

Renewable Technologies

A number of local authorities have been keen to promote the use of renewable technologies with the aim of providing more energy efficient and cheaper to run buildings. The cost of installing renewable technology has fallen in recent years with increased take up by developers and availability of grants from Government and energy companies.

However, renewable technology remains difficult to justify for the following reasons;

- Increased energy bills (please see examples below)
- Lengthy pay back of financial investment from savings in running costs
- Lengthy pay back of embodied energy used in manufacture from savings in carbon generated for energy consumption during operation of building
- Renewable technologies have a limited life span and need to be replaced
- Some technologies require annual maintenance that involves vehicle journeys
- Poor customer satisfaction

Broadland Housing has installed several renewable technologies. The results are often far from satisfactory as explained below;

Solar thermal panels

Broadland Housing has installed many solar thermal panels with some success. Solar thermal is used to heat hot water and some tenants report not having to use their heating system in the summer months. However, tenants do not appear to achieve the energy savings predicted at design stage. Savings are not sufficient to justify the capital investment.

Photovoltaic panels

Broadland Housing has fitted a number of photovoltaic panels that generate electricity from the sun. Our first panels were funded by the City Council on a pair of houses on The Avenues. Photovoltaic panels generate electricity during the day that only benefits

people who tend to be at home at the same time. It usually supplements electricity for appliance usage rather than heating and so does not directly contribute to affordable warmth.

The tenants at The Avenues reported difficulties in finding an energy supplier who would pay credits for electricity being put into the National Grid. Generally tenants do not appear to achieve the energy savings predicted at design stage. Savings are not sufficient to justify the capital investment.

Air source heat pumps

Broadland Housing has installed 49 air source heat pumps. However, many tenants have reported higher electricity costs than before. Bills can vary significantly by as much as 100%. Operating controls are counter intuitive. Residents who continue to operate controls in a familiar way use more primary electricity than a standard heating system, resulting in higher bills.

Air exhaust heat pumps

Broadland Housing has installed 57 air exhaust heat pumps. Unfortunately complicated arrangements for ducting makes this type of system unsuitable for the design and build contracts favoured by housing providers. Another housing association recently decided to remove air exhaust systems from a recently completed development due to high running costs. Even where the systems were installed on a Broadland Housing scheme by an accredited installer, tenants reported higher energy bills.

Ground source heat pumps

This is one of the most expensive types of renewable technology to install. Broadland Housing trialed a ground source heat pump at Bodham in North Norfolk. Unfortunately the tenant complained that running costs actually increased. Further investigations found that dry ground conditions made the location unsuitable. The system was eventually removed. Areas in Norwich with underlying chalk have similarly unsuitable ground conditions.

Code for Sustainable Homes

Broadland Housing has developed several hundred dwellings to Code levels 3 and 4. However, our experience to date is that the estimated level of energy use isn't actually achieved by tenants. It is a tick box exercise that does not focus on the building user. This is particularly a problem for Code level 4 in areas without mains gas, where reliance on renewable for compliance actually results in tenants advising they are paying more for their electricity than traditional forms of heating. There is a growing belief that energy costs tend to be 30% higher than that predicted by Code Assessors, who often rely for their calculations on data provided by product manufacturers.

Fabric First

Broadland Housing has had a fabric first approach for many years. This involves specifying high levels of insulation to external walls to reduce heat loss. As a result less energy is needed for space heating. This approach provides a long term and low maintenance solution to providing affordable warmth to residents, many of whom are on limited budgets. The cost of this approach is actually more expensive than fitting renewable technology to a building of standard construction, but we believe it worth the investment.

2016 target for zero carbon

Broadland Housing has been considering design solutions to achieve the forthcoming Government 2016 zero carbon target. The higher Code for Sustainable Homes levels 5 and 6 take steps to achieve this. However, even with a fabric first approach, they rely on renewable technologies to achieve reduced energy consumption.

Broadland Housing therefore began looking to other building standards to see if any were better aligned to its fabric first philosophy. The Passivhaus standard stood out because it uses such a high level of fabric first, that a heating system is no longer required. Space heating is estimated to reduce by 88%.

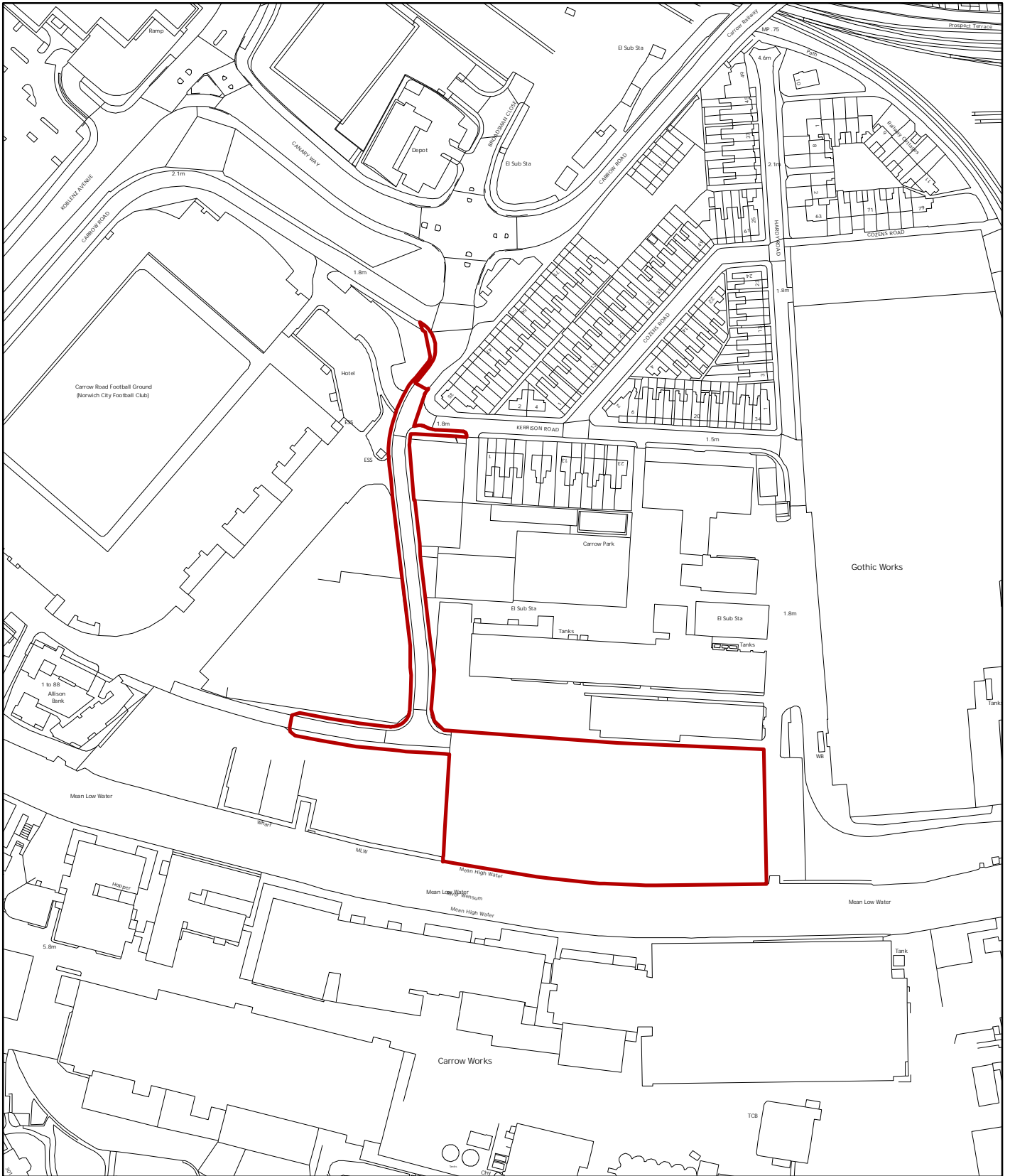
Whilst the Code for Sustainable Homes considers a wide range of ecological design features, Passivhaus just focuses on the comfort and energy use of the occupants. That is not to say that other standards cannot be included, such as embodied energy of the building fabric and reduced water consumption.

Unlike the Code for Sustainable Homes, studies of completed Passivhaus developments show that on average, residents do achieve the predicted saving in energy use.

Future Climate

Broadland Housing has also been conducting a research project for the Technology Strategy Board on how to future proof buildings for the predicted increase in temperatures from climate change. This predicts that energy usage for space heating will reduce as temperatures increase. However, energy demand is likely to increase for air conditioning. This future climate will make some forms of technology less effective.

The approach to Passivhaus requires such careful consideration of keeping internal temperatures within design parameters, that solar shading is generally required. This shades the hot summer sunshine but not the lower winter sunshine. This solar shading has been shown to future proof against rising global temperatures which mitigates an increase in energy demand for air conditioning.



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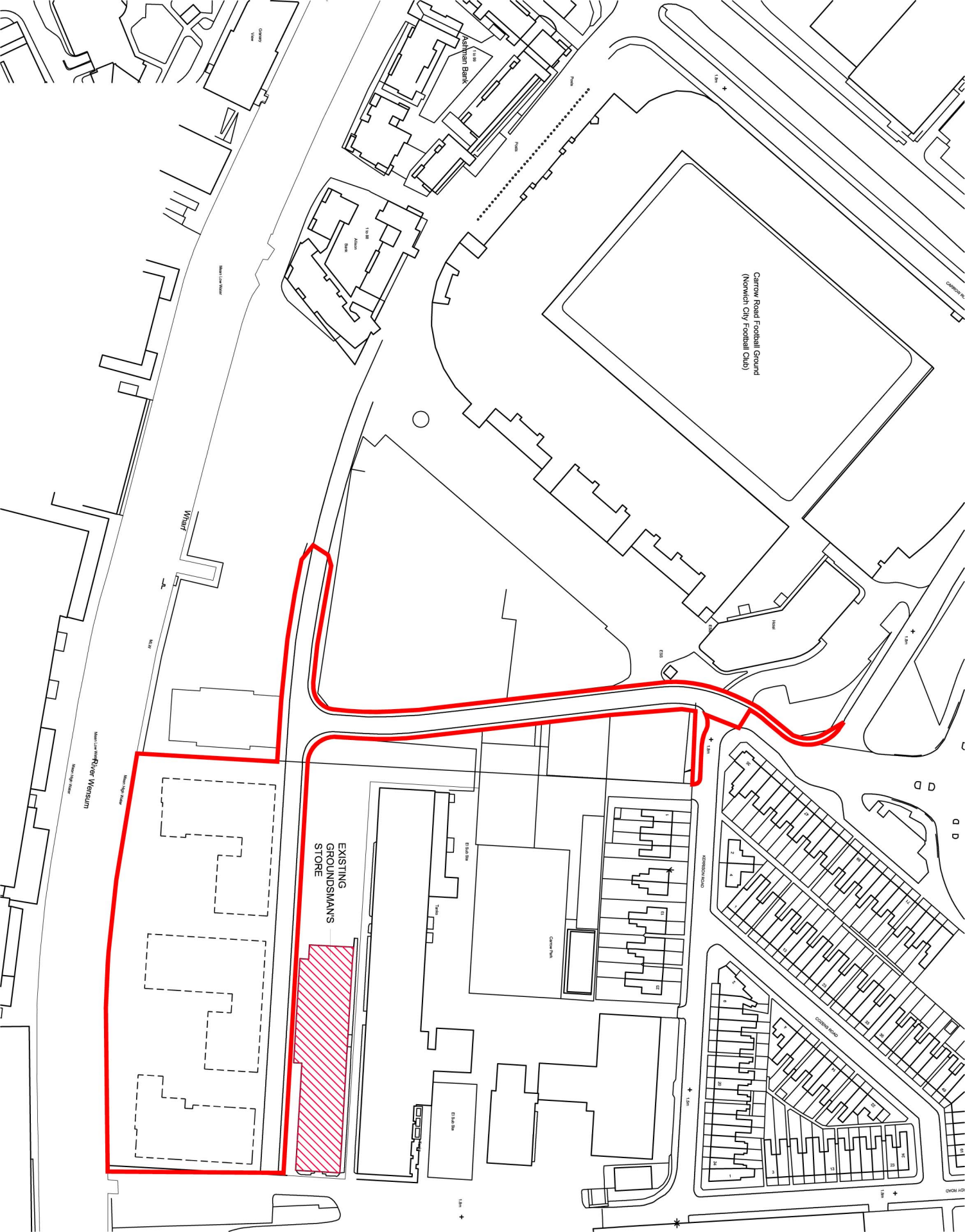
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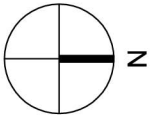




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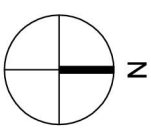
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Client: Broadland Housing Group

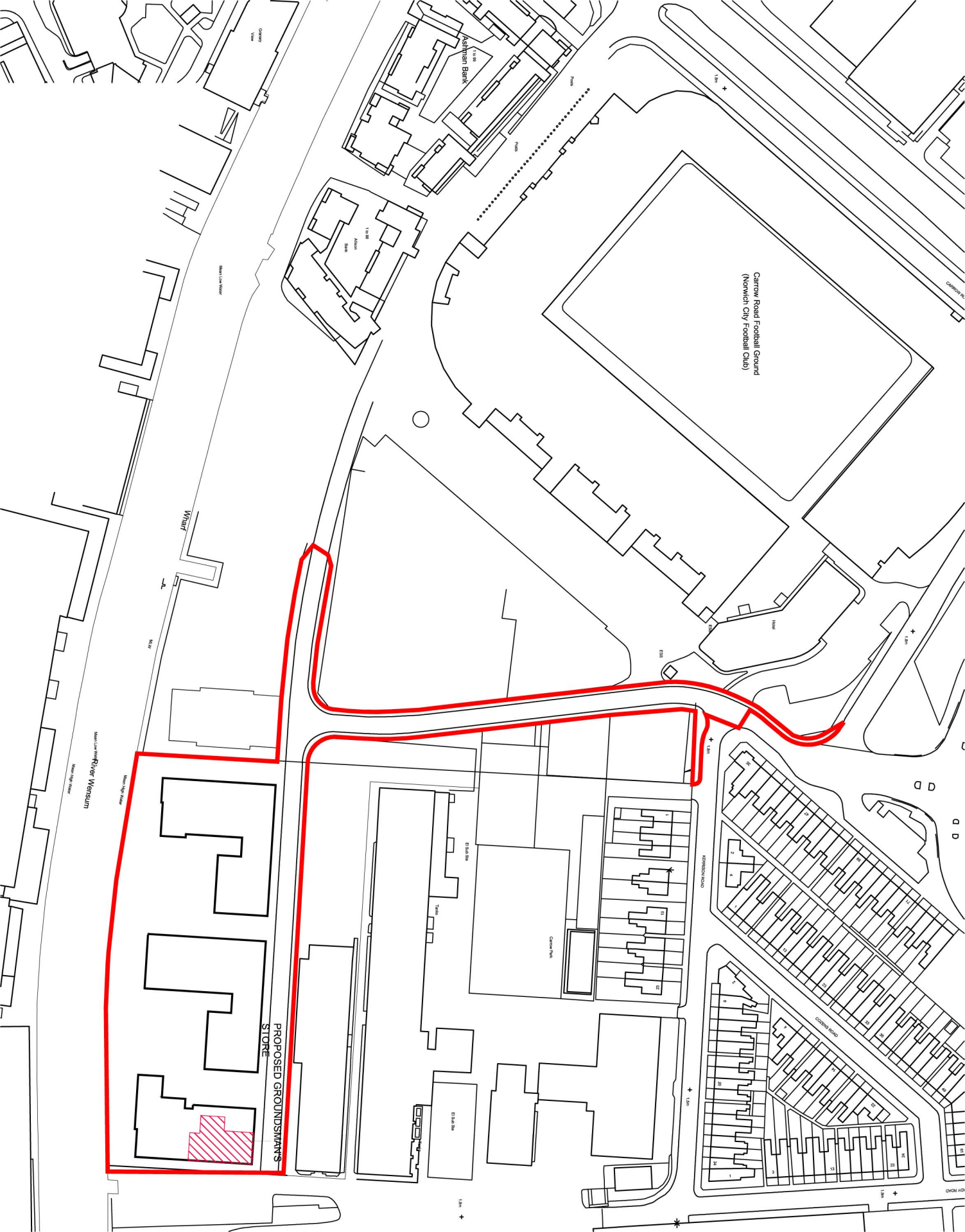
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Mean High Water


Mean High Water

**PROPOSED GROUNDSMAN'S
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