



NORCOT COMMUNITY CENTRE AND AFFORDABLE HOUSING, READING

DRAINAGE STRATEGY STATEMENT

Project Title	70012984 – RBC Housing Sites – Norcot CC
Subject	Drainage Strategy Advice
Date	08 June 2018
Client	Reading Borough Council
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Checked by	Jack Mason
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Notes	
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BACKGROUND

- 1.1 WSP was commissioned by Reading Borough Council (the Client), to provide advice on the provision of drainage for land located on the current position of Norcot Community Centre, Lyndhurst Road, Reading, Berkshire, RG30 6UB (the Site). It is understood that the client is intending to develop the land for residential purposes and requires this advice to confirm suitability for proposed use and support a planning application.

INTRODUCTION

- 2.1 The site is situated in an area previously used as the Norcot Community Centre in a predominately residential area. Terraced residential housing surrounds the proposed development area. The River Thames lies approximately 290m to the north-east of the development site.
- 2.2 A site location plan is shown below in Figure 1.

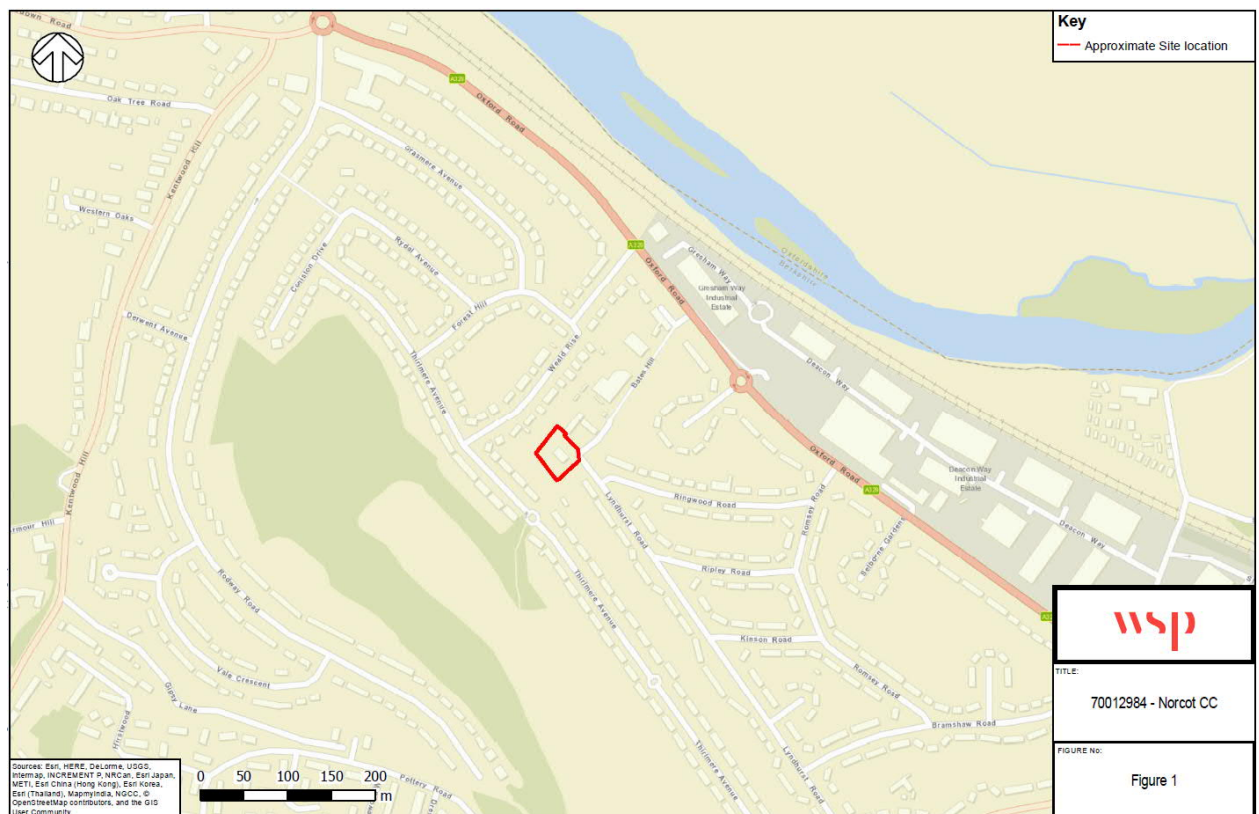


Figure 1: Site Location, attached as Appendix A

PLANNING POLICY GUIDANCE

RBC Core Strategy 2008 (Alterations Adopted 2015)

Policy CS1: Sustainable Construction and Design

- 3.1 Developments incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the Environment Agency, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where

possible and in any case is no greater than the original conditions of the site. Particular care will be needed in areas of flood risk where different solutions may be required.

Sites and Detailed Policies Document 2012, (Alterations Adopted 2015)

Policy DM1: Adaption to Climate Change

- 3.2 All development shall minimise the impact of surface water runoff from the development in the design of the drainage system.

Pre-Submission Draft Local Plan (consultation closed, due to be submitted to SoS)

Policy CC3: ADAPTATION TO CLIMATE CHANGE

- 3.3 *All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change.*

Policy EN18: FLOODING AND SUSTAINABLE DRAINAGE SYSTEMS

- 3.4 *Major developments* must incorporate sustainable drainage systems (SuDS) as appropriate and in line with the Government's Technical Standards. Runoff rates should aim to reflect greenfield conditions and, in any case, must be no greater than the existing conditions of the site. Schemes should ensure that the movement of water through vertical infiltration as well as horizontal run-off does not worsen contamination effects. Wherever possible, SuDS provision should maximise ecological benefits, link into the existing Green Network, incorporate tree planting and landscaping and avoid damage to existing significant trees, including through changes to the site hydrology. All new developments in areas of flood risk should give priority to SuDS.*

*10 or more dwellings or equivalent non-residential or mixed developments

EXISTING DEVELOPMENT

- 4.1 The existing site is accessed from Lyndhurst Road. The site is set below residential gardens on the south-western and western edges. The site is adjacent to a public footpath from Lyndhurst Road to Thirlmere Avenue on its south-eastern boundary. The north-eastern area of the site is a slightly overgrown roadway and turning head, which is bounded by a residential apartment and associated grounds.
- 4.2 The ground surface is generally level, with a slope from west to east generally toward the site entrance area. The general surfaces on the site comprise hard-standing tarmac and concrete with a central building covering approximately 170m², giving a total site area of approximately 1800m² (0.180 hectares).

PROPOSED DEVELOPMENT

- 5.1 It is understood that there are currently proposals to develop the site into 21 residential units, comprising one-bed and two-bed apartments over 4 storeys with communal areas, gardens and car parking. Development plans for the site can be found in Appendix B.

DRAINAGE STRATEGY

- 6.1 On the understanding that the site is underlain by chalk bedrock with possible superficial drift of Silty/Clay Sands and Gravels; infiltration may be possible at this site. However, without investigation of contamination sources and ground water levels use of Infiltration solutions cannot

be assumed at this location. It is therefore assumed that surface water from this site would discharge to the local surface water receptor as in the existing situation, in this instance the Thames Water Sewer in Lyndhurst Road, see Appendix C.

- 6.2 If an infiltration solution was engineered for this location it is assumed it would not require infrastructure greater than any direct discharge solution and would therefore not affect the viability of the drainage strategy.
- 6.3 If supported by geo-technical investigation infiltration solutions could be utilised during detailed design process.
- 6.4 The site has an existing Surface Water discharge network controlling surface water. In line with local policy it is assumed rates will be reduced with regard to existing discharges rate and will be taken closer to calculated greenfield rates for the site. Based on the topographical survey (see Appendix D) an assessment of the existing drainage infrastructure suggests that the current site maximum discharge would be approximately 14 l/s based on a 100mm pipe with free discharge.
- 6.5 Due to the small size of the site the calculated Greenfield run-off rate of 0.1 l/s cannot be feasibly constructed within an outfall as there would be a significant chance of blockage for such a small orifice. In line with best practise a greenfield/trickle discharge of 2 l/s has been used as the threshold for discharge from this site. The final discharge rate will be subject to detailed design during construction process.
- 6.6 Based on a site area of 1800m² and an assumption that 60% of this area is impermeable an impermeable drainage area of 1080m² has been utilised.
- 6.7 Microdrainage software has been used to calculate the required volume of storage for the site. Based on an impermeable drainage area of 1080m² with a maximum discharge rate of 2 l/s the maximum storage volume to attenuate a 1 in 100 year + 40% for climate change event would be 64m³. See Appendix E for Microdrainage outputs.
- 6.8 This volume can be provided with the redline boundary outside of adoptable roads and structures. The most appropriate area would appear to be beneath the car parking area proposed for the property. For reference an 80m² storage structure 0.8m deep would provide the required storage for this volume. This is assumed to be a worst case scenario and establish that a suitable drainage mitigation solution can be used on site. It is likely that the required storage volume would be smaller when engineering considerations and detailed design are undertaken.
- 6.9 The foul water discharge from the site would be connected to the existing Thames Water infrastructure in Lyndhurst Road.

SUMMARY

- 7.1 Site is currently developed but unused including surface and foul drainage systems.
- 7.2 The site will be developed to provide 21 one & two bedroom residential dwellings.
- 7.3 If supported by geo-technical investigation infiltration solution could be utilised during detailed design process. It has been assumed that surface water from this site will discharge to the local SW system as for the existing development to establish that a suitable drainage mitigation solution can be used on site.
- 7.4 Surface Water runoff will be limited to 2 l/s (lowest possible engineered design, this level is subject to detailed design).

- 7.5 Surface water attenuation will be provided to limit runoff up to the 1 in 100 year + 40 climate change event. The maximum calculated size for this storage would be 64m³. This can be provided within the redline boundary outside of adoptable roads and structures.
- 7.6 Foul Water drainage would be connected to the existing infrastructure within Lyndhurst Road.

APPENDIX A

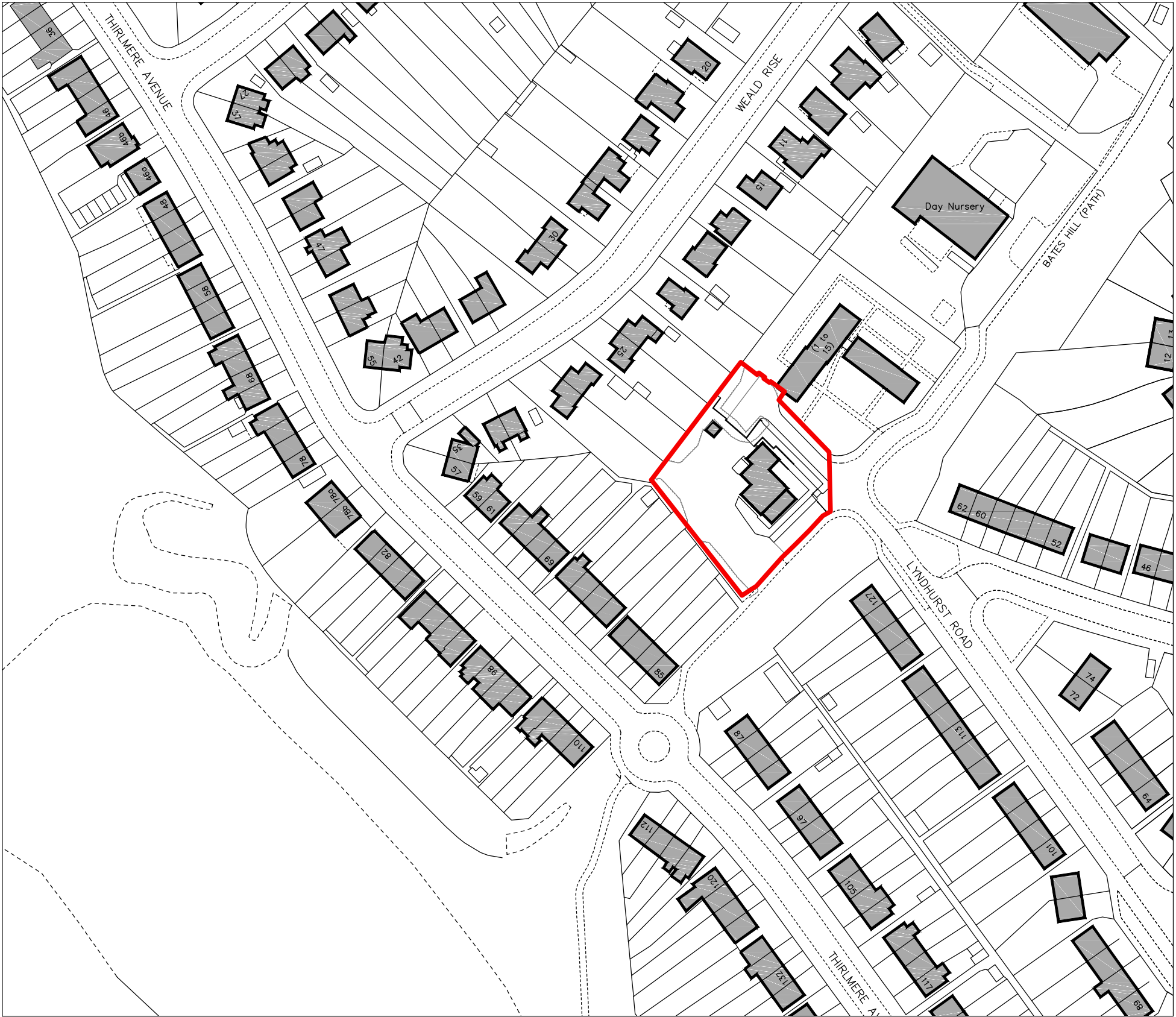
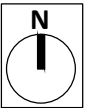
SITE LOCATION



APPENDIX B

PROPOSED DEVELOPMENT

This drawing to be read in accordance with the specification/Bills of Quantities and related drawings. No Dimensions to be scaled from this drawing. All stated dimensions to be verified on site and the Architect notified of any discrepancies.



Project

Norcot Community Centre
Lyndhurst Road
Tilehurst
Reading

Title

Location Plan

Scale 1:1250 @A1	Date 15/04/2018
Drawn RSB	Checked MS

Drawing Number 7870_PL101	Revision A
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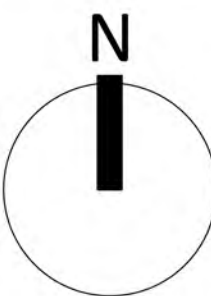
NOTES

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No Dimensions to be scaled from this drawing. All stated dimensions to be verified on site and the Architect notified of any discrepancies.

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Scale bar 100mm at 1:1



Project

Norcott Community Centre
Lyndhurst Road
Tilehurst
Reading

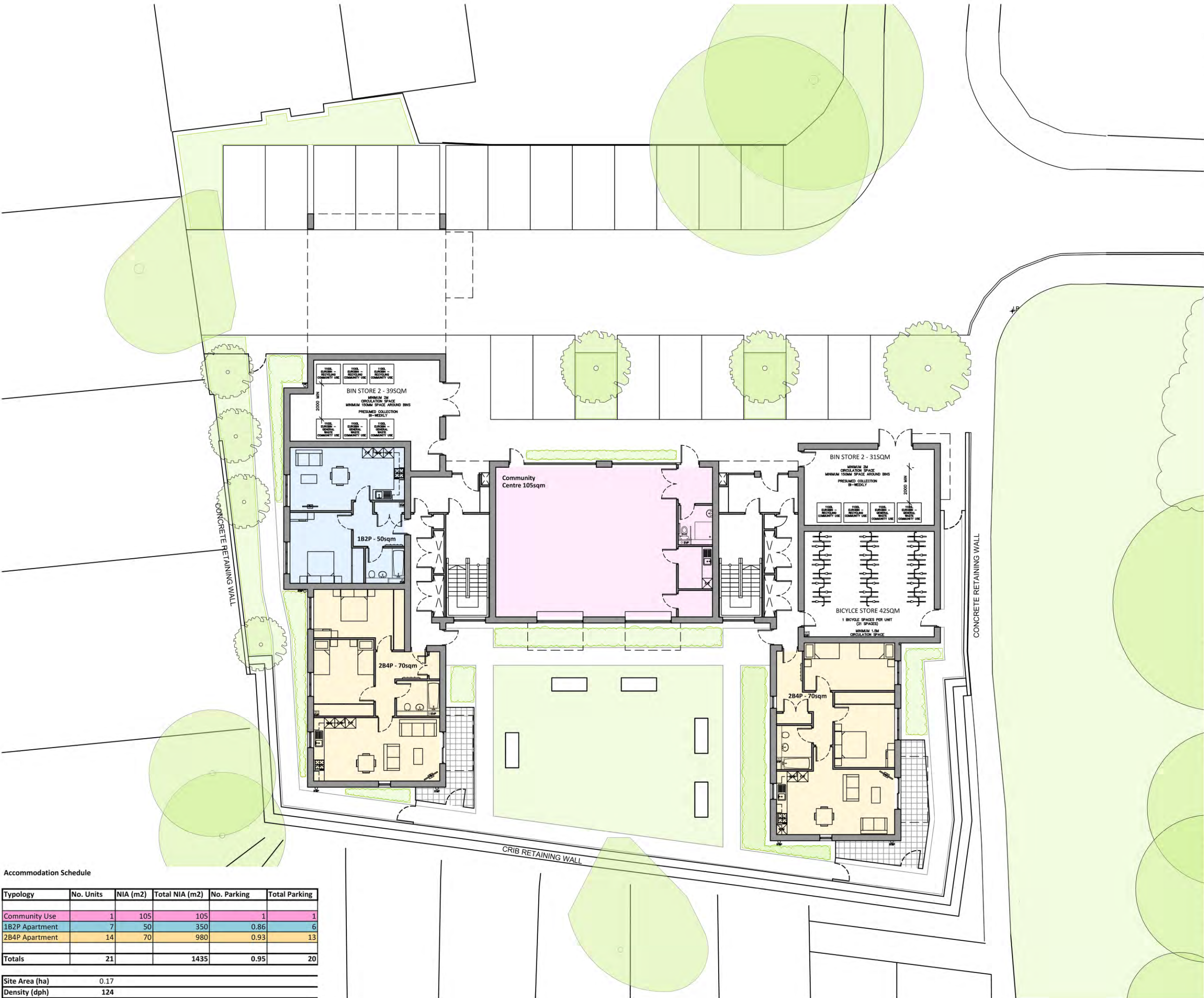
Title

Rendered Site Plan

Scale	@ A1	Date	11/04/18
Drawn	AS	Checked	MS
Drawing Number	7870_PL_103	Revision	A

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Accommodation Schedule

Typology	No. Units	NIA (m2)	Total NIA (m2)	No. Parking	Total Parking
Community Use	1	105	105	1	1
1B2P Apartment	7	50	350	0.86	6
2B4P Apartment	14	70	980	0.93	13
Totals	21		1435	0.95	20
Site Area (ha)	0.17				
Density (dph)	124				

NOTES

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0

50

Scale bar 50mm at 1:1

Proposed Trees

Existing Trees

Proposed Planting

Existing Planting

Please note that trees adjacent to the site are correct and have been surveyed. And trees along the earthwork bank, are estimated sizes, based on maps.

N

Project

Norcot Community Centre
Lyndhurst Road
Tilehurst
Reading

Title

Proposed Ground Floor

Scale
1:200 @ A3

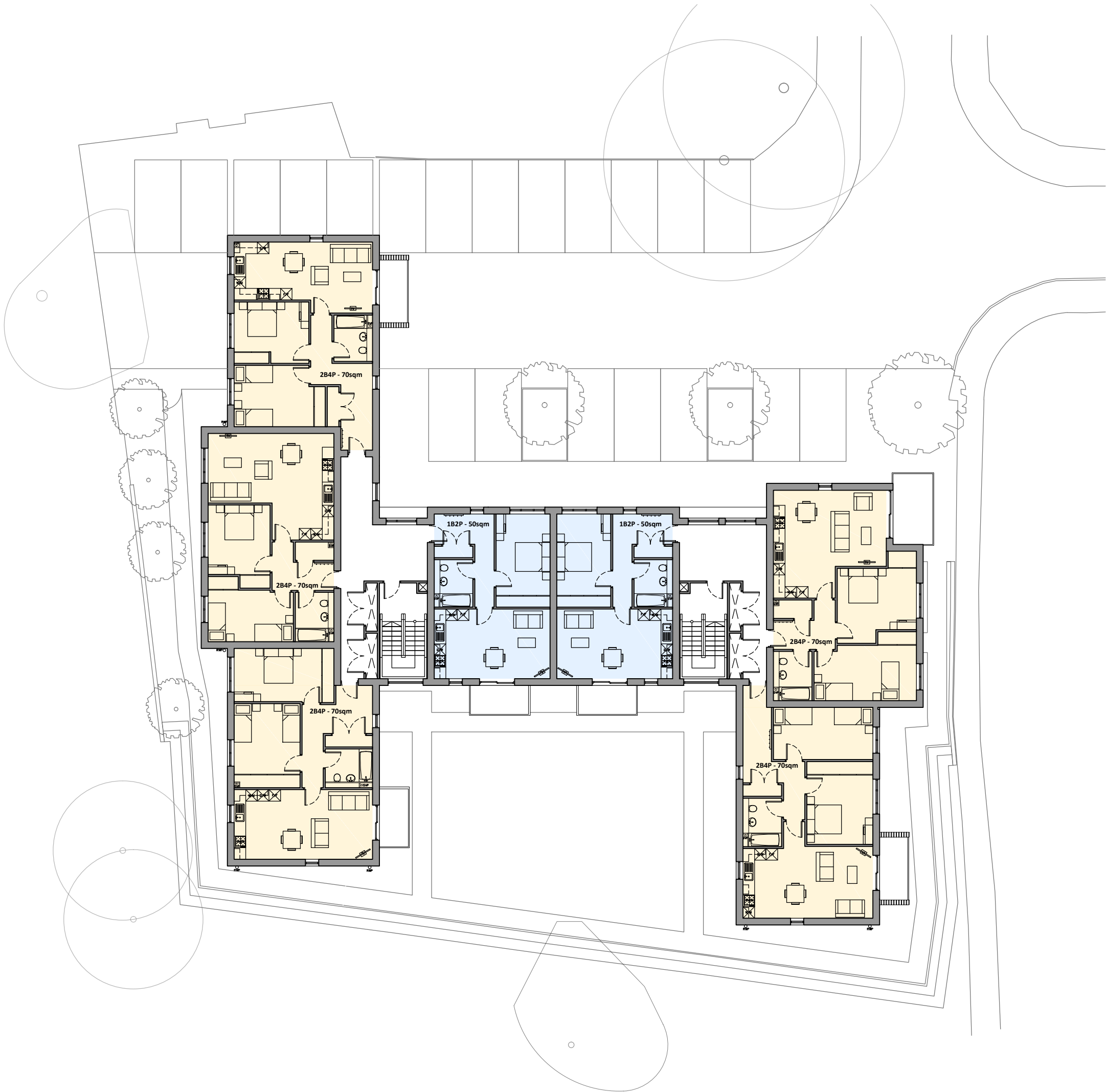
Date
12/04/2018

Drawn
RSB

Checked
MS

Drawing Number
7870_PL104

Revision
A



NOTES

This drawing to be read in accordance with the specification/Bills of Quantities and related drawings. No Dimensions to be scaled from this drawing. All stated dimensions to be verified on site and the Architect notified of any discrepancies.

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Scale bar 50mm at 1:1



Proposed Trees



Existing Trees



Proposed Planting



Existing Planting

Please note that trees adjacent to the site are correct and have been surveyed. And trees along the earthwork bank, are estimated sizes, based on maps.



Project

Norcot Community Centre
Lyndhurst Road
Tilehurst
Reading

Title

Proposed First & Second Floor

Scale 1:200 @ A3	Date 12/04/2018
Drawn RSB	Checked MS
Drawing Number 7870_PL105	Revision A

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