

USW Caerleon Environmental Statement

Chapter C: Site and Scheme Description

29 November 2019



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C1.0 Introduction

C1.1 This Environmental Statement ('ES') chapter describes the site and its relationship to the wider area, provides a description of the proposed development, explains the scheme assumptions that have formed the basis of the Environmental Impact Assessment ('EIA') and considers the design rationale underpinning the proposals.

C1.2 The chapter is divided up into the following key sections:

- 1 Section C2.0 – describes the site and its surroundings;
- 2 Section C3.0 – describes the development;
- 3 Section C4.0 – outlines the construction methodology; and,
- 4 Section C5.0 – considers alternative forms of development and design.

C2.0

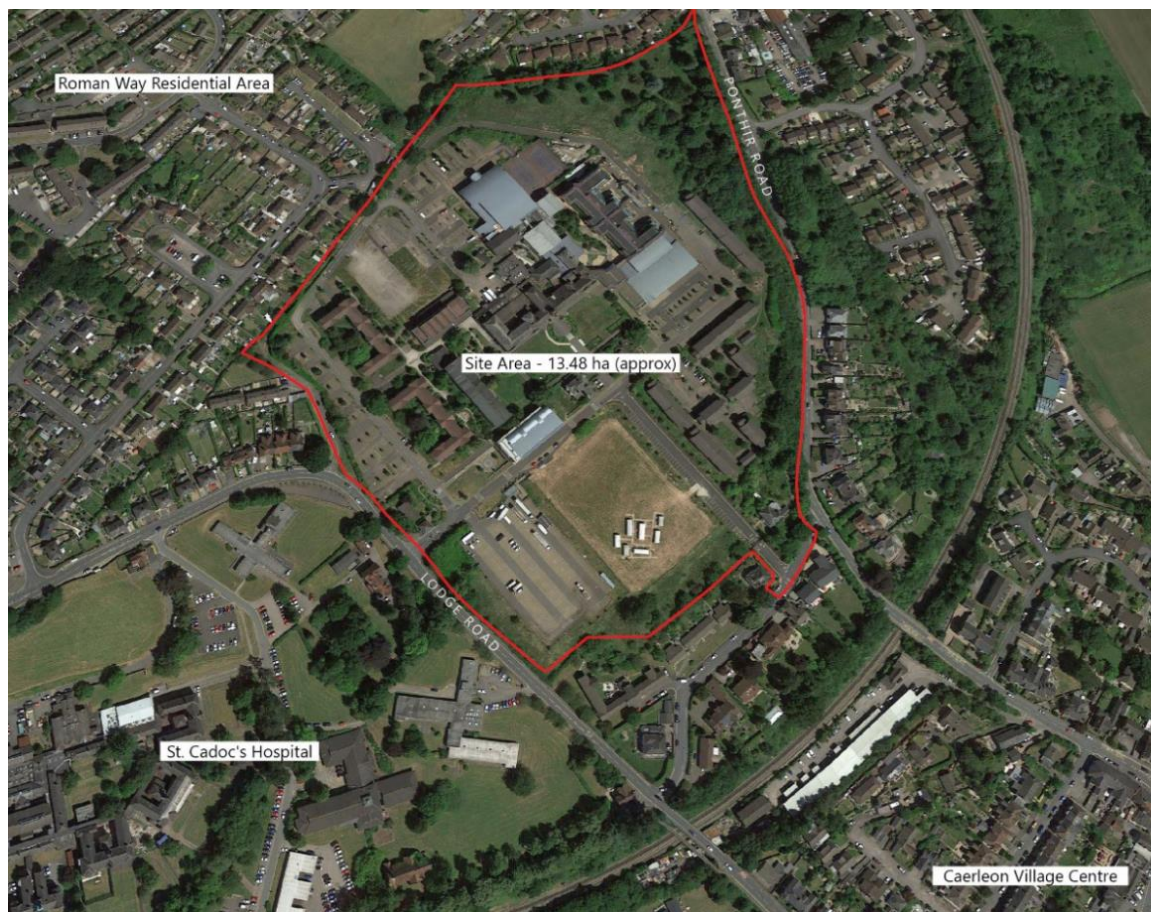
Site Location and Description

The Site

C2.1

The former University of South Wales ('USW') Campus at Caerleon is located in the Parish of Caerleon, within the principal area of Newport City in South Wales. The university closed the campus in 2014 and relocated to a new location in Newport.

Figure C2.1 USW Caerleon - Site Boundary



C2.2

The site is located on a low ridge north of the historic core of Caerleon, overlooking the valley of the River Usk to the south and the Afon Lwyd to the east.

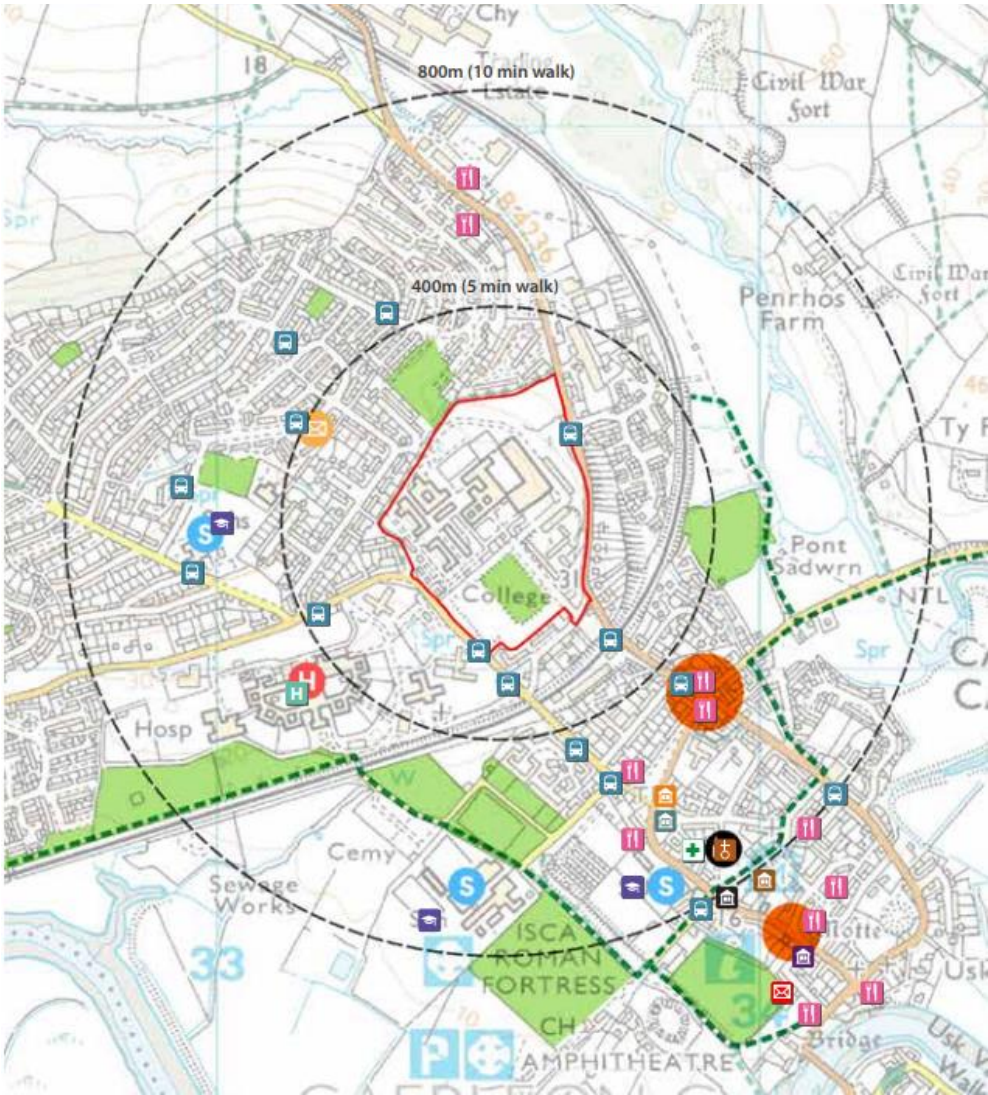
C2.3

The site, which is 13.46 hectares, currently contains lecture theatres, offices, student accommodation, catering and sports facilities and a library, surrounded by hardstanding and improved grassland, as well as a number of trees (see Figure C2.1), many of which are subject to a Tree Preservation Order ('TPO').

C2.4

Access into the site is currently off Lodge Road and College Crescent, which is a one-way road. It also has good connectivity to the road network, including the M4 motorway. The B4595 links Caerleon with Newport City Centre and a good bus service provides connections to main line rail services. It is understood that proposals were put forward in 2012 to build a new railway station around 500 metres from the site, which could further facilitate sustainable transport choices, however this has not been progressed to date. Figure C2.2 below provides a context analysis for the site.

Figure C2.2 Former USW Caerleon Site Context Analysis



Key:

- Application Site Boundary
- Local Centre Retail
- Environmental Space
- Long Distance Footpath/Cycleway

Facilities:

- | | |
|--|--|
| Caerleon Town Hall | Primary/Junior and Secondary Schools |
| Caerleon Library & Information Centre | Caerleon Post Office |
| Isca Medical Centre | National Roman Legion Museum |
| Caerleon Tourist Information Centre | Roman Fortress & Baths |
| Bus Stop | St Cadoc's Church |
| Pubs & restaurants | St Cadoc's Hospital |

- C2.5 The site lies on a low promontory that extends east at around 50 metres Above Ordnance Datum ('AOD'). It occupies an elevated position, visible from near and longer ranging vantage points.
- C2.6 The former university campus comprises an assortment of buildings ranging from the Edwardian Main Building, which dates from 1912, to the 'Kegie', a modern University teaching facility completed in 2007. The site has several large areas of surface car parking, a modern university sports hall and a Rugby Pitch.
- C2.7 There are four listed buildings within the site, namely:
- The former Caerleon Teacher Training College Building¹ (Grade II);
 - The Caretaker's/Gardener's Lodge (Grade II);
 - The Principal's Residence (Grade II); and,
 - Gate Piers (Grade II).
- C2.8 The site also lies within an Archaeologically Sensitive Area. A Desk Based Assessment has demonstrated that there is a moderate to high potential for undisturbed archaeological deposits to be encountered within the site, however there is considerable development on the existing site and construction works associated with this are likely have diminished the archaeological potential.
- C2.9 There are no statutory or non-statutory ecological designations within the site, however, Phase 1 and 2 Habitat Surveys have found that the following species / species groups may be present within the site:
- Bats – the buildings on site offer potential for roosting bats and mature trees around the site boundaries offer linear connectivity and foraging and commuting opportunities for bats. Bat surveys identified activity within the site, with Felthorpe House and the Camelot/Dolaucothi accommodation block being confirmed as roosts.
 - Birds – mature trees provide some nesting and foraging habitat for garden and farmland bird species.
 - Reptiles – the site offers suitable habitat that could support common reptile species although surveys undertaken during suitable weather conditions did not record any reptiles.
 - Hedgehogs – these were regularly recorded foraging across the campus.

Surroundings

- C2.10 The site is approximately 4 miles to the north east of the City of Newport, is a 10-minute walk from Caerleon Village Centre and 300m to the north west of Goldcroft Common District Centre.
- C2.11 The site is predominantly surrounded by housing, with areas of open amenity space to the north. Lodge Road/St Cadoc's Close define the western boundary of the site and Ponthir Road defines its eastern boundary. Surrounding development is therefore mainly residential in nature, though St Cadoc's hospital lies to the south west and a small industrial estate is located to the north east.
- C2.12 The immediate residential context of the site reflects the wider environment, with the northern portion of Caerleon being predominantly residential.
- C2.13 Caerleon has a significant heritage and archaeological context, being the location of a Roman legionary fortress and a site of an Iron Age Hill Fort. Substantial areas in and around Caerleon

¹ It is understood that the original building suffered a fire in 1992 that damaged part of the roof.

(not including the application site) are protected as part of the Caerleon Roman Legionary Fortress, a Scheduled Monument of international significance.

C2.14 A Conservation Area has also been designated at Caerleon, covering the later historic core of the town, as well as the whole of the area of the Roman Fort, and the fields of the west side that stretch down to the River Usk. The site itself is not included in the Conservation Area, which is some 150m away.

C2.15 As confirmed above, there are no statutory or non-statutory ecological designations on the site itself, however:

- The River Usk Special Area of Conservation ('SAC') and Site of Special Scientific Interest ('SSSI') (Statutory Designations) approximately 1km to the south of the site. This is designated for its river running over sandstone and for its associated plant and animal communities.
- There are 15 non-statutory Site(s) of Importance for Nature Conservation ('SINCs'), the closest of which is the Afon Llwyd Grasslands located approximately 0.3km to the north east of the site. The SINCs are designated for a range of habitats including marshy grassland, riparian habitats, ancient semi-natural woodland and reedbeds.

C2.16 Newport City Council has a number of Air Quality Management Areas ('AQMA's'), with the closest to the site being at Caerleon High Street, some 750 metres to the south east of the site. The Caerleon AQMA extends part way along Castle Street, along High Street (as far as its junction with Cross Street) incorporating housing adjacent to the AQMA, and along the highway to the junction of Caerleon Road and Belmont Hill/New Road. The AQMA was reviewed and enlarged in July 2018 and is principally designated due to nitrogen dioxide (NO₂) and particulate matter levels arising from vehicle emissions.

Sensitive Environmental Receptors

C2.17 Having considered the nature and receptors on the site and in the wider environment the following sensitive environmental receptors have been identified:

- a Arboriculture (in particular TPO trees)
- b Views (short and long range)
- c Transport and Accessibility
- d Heritage Assets (Listed Buildings, Archaeology, Caerleon Conservation Area)
- e Ecology (Flora and Fauna, the River Usk SAC and SSSI and SINCs)
- f Air Quality (Caerleon AQMA, nearby residential development)

C3.0

Description of Development

C3.1

A full planning application has been submitted to Newport City Council ('NCC') for:

- 1 The demolition of existing buildings within the site, with the exception of the Listed Buildings and Felthorpe House.
- 2 The development of 218 dwellings, including 170 new build houses and the creation of 49 apartments within the listed buildings that are to be converted/retained within the site. Affordable housing will be provided at 10%.
- 3 Landscaping (including re-grading) and sustainable drainage works.
- 4 Access/Infrastructure works.
- 5 Removal and relocation of specified TPO trees (the remainder of TPO trees will be retained).

C3.2

Table C3.1 below provides a schedule of key plans of the proposed development. A copy of these is provided at Appendix C1 (apart from the Site Location Plan, which is provided at Appendix A1 and the Landscape Strategy, which is provided at Appendix C2). It should be noted that the application submission comprises a considerable number of additional detailed plans for each house type and the listed building works.

Table C3.1 Schedule of Key Plans

Drawing Number	Drawing Title
18137 (05) 1090	Site Location Plan (see Appendix A1)
18137 (05) 1100	Existing Site Plan
18137 (05) 1101 Revision H	Proposed Site Plan
18137 (05) 1103 Revision D	External Finishes Layout
18137 (05) 1104 Revision D	Enclosures Layout
18137 (05) 1105	Existing Site Sections
18137 (05) 1106 Revision B	Proposed Street Elevations 1
18137 (05) 1107 Revision A	Proposed Street Elevations 2
18137 (05) 1108 Revision A	Proposed Street Elevations 3
18137 (05) 1109	Enclosures Details
18137 (05) 1110 Revision C	Affordable Tenure Layout
18137 (05) 1112 Revision A	Demolitions
18137 (05) 1113 Revision C	Refuse Collection Strategy Layout
18137 (05) 1114 Revision C	Storey Height Plan
18137 (05) 1115	Enclosure Details
18137 (05) 1240	Listed Building Outbuilding Conversion – Plans
18137 (05) 1241	Listed Building Outbuilding Elevations (Sheet 1 of 2)
18137 (05) 1242	Listed Building Outbuilding Elevations (Sheet 2 of 2)
184326A-A01 Revision A	Junction General Arrangement
Edp5601_d025b (Sheets 1-19)	Proposed Landscape Strategy (see Appendix C2)

Demolition

C3.3

In order to facilitate the delivery of 218 new homes within the site it is necessary to demolish much of the existing built development within the site.

C3.4

The description of development confirms that all listed buildings and listed structures within the site will be retained. Felthorpe House will also be retained. Buildings to be demolished include

the 'Kegie' building, a modern university teaching facility completed in 2007, as well as a leisure centre and student accommodation. Large areas of surface car parking and the rugby pitch will also be removed, although alternative open space and play provision will be located in the position of the existing rugby pitch.

Land Use and Form of Development

- C3.5 The initial phase of development will comprise the demolition of existing buildings associated with the USW campus within the site, apart from the listed buildings that are being retained for conversion.
- C3.6 The development will provide 218 new dwellings, of which 170 will be new-build houses and 49 will be apartments created within the retained and converted listed buildings within the site.
- C3.7 22 (10%) of the properties will be affordable housing and will consist of 1, 2- and 3-bedroom houses.
- C3.8 A schedule of house size and type is provided in Table C3.2 below.

Table C3.2 Proposed Schedule of Accommodation

Number of Units	House Description	Number of beds
New-Build Housing		
12	Letchworth	3
18	Warwick	3
12	Amberley	4
22	Stratford	4
17	Oxford+	4
14	Oxford Lifestyle	3
16	Cambridge	4
17	Welwyn+	4
13	Henley+	4
1	Harrogate (MSU)	4
5	Richmond+	4
Affordable Housing		
8	Flat	1
8	House	2
6	House	3
Listed Building Conversion		
Main Building		
23	Flat	1
18	Flat	2
1	Flat	3
T J Webley		
1	House	2
1	House	3
Ty Hywel		
1	Flat	1
1	House	4

Number of Units	House Description	Number of beds
Felthorpe House		
1	House	5
Listed Building Outbuilding		
2	Flat	2
Total Number of Units: 218		

C3.9

The housing will be set within landscaped areas and recreation areas, including:

- a The retention of formal landscaping to the south east of the main building; and,
- b The alteration of the existing rugby pitch to accommodate a smaller kick-about/pitch area alongside a LEAP (see Figure C3.1).
- c An area of open space incorporating an exercise trail and landscaping in the north east of the site;

Figure C3.1 Proposed Kickabout Pitch and LEAP (Indicative Plan)



Density and Design

C3.10

A series of key development 'zones' have been created to allow the development to respond to specific issues of that part of the site. The below indicative plans and text describe the concept for each zone. It should be noted that since the preparation of these plans the design has developed further, though the concept for each zone remains unchanged.

Zone 1 – Entrance from Lodge Road



- C3.11 As a main entrance to the site housing here will be predominantly detached homes with parking on plot, within a landscape feature and creating an active frontage to Lodge Road.

Zone 2 – The Avenue



- C3.12 This runs alongside the pitch, joining with the secondary access to College Crescent. It also forms a key vista to the main listed building. Lower density larger properties will also be larger detached homes, overlooking the pitch and open space.

Zone 3 – Main Building



- C3.13 The main listed building will be converted into apartments. The surrounding buildings that form the immediate setting of the listed building will be detached and semi-detached set back

from the footpath. Taking account of the need to preserve and enhance the setting of the listed building front garden boundaries will include hedges and estate railings.

- C3.14 The homes will be predominantly a rough cast render finish, with some brick or tile hanging detail to allow a consistent backdrop to the listed building whilst ensuring that the new build development is subservient, allowing the listed building to be the focal point of the development.

Zone 4 – Northern Boundary



- C3.15 Lower density housing will front the woodland embankment and the area of open space incorporating an exercise trail and landscaping beyond. A more informal building line will be created, with a variety of dwelling types and roofscapes.
- C3.16 The houses will be a mixture of facing brick, rough cast render finish with some tile hanging detail.

Zone 5 – Public Open Space



- C3.17 This area includes a number of retained TPO trees. Lower density development will front the informal open space. Whilst the building line will be linear a variety of dwelling types and roofscapes will help to create an informal character area.
- C3.18 Homes here will be a mixture of facing brick, rough cast render finish with some tile hanging detail to allow a varied street scene when viewed from the surrounding area.

Wider Development

- C3.19 The above zoned areas will accommodate lower density development and be of a design that differentiates those areas from the wider development. New build houses within the rest of the site will be higher density and of different sizes and styles to provide a varied housing mix.

Scale of Development

- C3.20 The proposal is for 218 dwellings, which is considered appropriate for the site and has been discussed with NCC Officers during pre-application consultation meetings. The density of the new build dwellings will be 32 dwellings per hectare, whilst the density of the converted listed buildings will be higher given that the accommodation to be created within these is predominantly flats/apartments.
- C3.21 Apart from the converted listed buildings, which will remain at their existing height, the 2, 3 and 4-bed homes will be two storeys (up to 10 metres to ridge above the proposed ground level). Where they are external to the property, garages will be single storey.

Access and Parking

- C3.22 Full details of parking and access are discussed within the Transport Assessment (see Appendix D1).
- C3.23 Vehicular access to the site is currently from two locations. The primary access is from Lodge Road on the western boundary of the site and a secondary access from College Crescent at the southern boundary of the site.
- C3.24 Improvements are proposed to the junction with College Crescent and Ponthir Road in order to improve pedestrian and cycle connectivity, whilst maximising junction visibility. The College Road/College Crescent junction will remain left in, left out to accommodate the existing one-way arrangement along College Crescent. This access will be controlled by a give way narrowing on College Road, with priority given to vehicles entering the site from College Crescent. Footpaths on either side of the access will be widened and build outs provided at the junction on College Crescent, with dropped-kerb crossings provided with tactile paving.
- C3.25 The internal road layout within the site has been designed to adoptable standards and is acceptable in terms of visibility, parking arrangements, turning heads for refuse vehicle movements and distance from bin stores. Raised tables are proposed at internal junctions in order to provide traffic calming within the site.
- C3.26 Pedestrian and cycle access to the site will be from Lodge Road and College Crescent, and from the Public Right of Way ('PROW') in the northwest of the site, which will be retained and widened to 3 metres to create a shared footway/cycleway.
- C3.27 It is also proposed to introduce three pedestrian links from Bellin Close, St Cadoc's Close and Ponthir Road. An improved pedestrian / cycle link between St Cadoc's Close and Bellin Close along the current alignment of the PROW has been proposed along the north / north west boundary of the site.
- C3.28 The developer proposes to make a financial contribution via a S106 Agreement towards an upgraded on-road cycle link from the development to Roman Reach, via Lodge Road and National Cycle Network ('NCN') Route 88.
- C3.29 The northbound and southbound bus stops on Lodge Road will be upgraded to include a bus shelter, raised kerbs adjacent to the site on Lodge Road and localised footway widening within the site. A pedestrian crossing will also be provided to improve access to the bus stops.
- C3.30 Car parking will be provided in accordance with the adopted maximum parking standards therefore the following parking strategy is proposed:
- 1-bedroom apartments will have 1 designated parking space to the side of the property.

- 2-bedroom dwellings will have 2 designated parking spaces at the front or side of the property.
- 3-bedroomd dwellings will have a single garage generally with 2 additional spaces in the front drive.
- 4-bedroom dwellings will have either a single garage with 2 additional spaces in the garden drive, or larger 4-bedroom dwellings will have a double garage with additional spaces in the front drive.
- Visitor spaces are integrated into the road design; 34 spaces are provided in total.

C3.31 An electric vehicle charging point will also be provided for each home. All new build dwellings will benefit from parking spaces to the side of dwellings, private drives located to the front of dwellings or in courtyards and shared drives. The dwellings that will be created through the conversion of the listed buildings will benefit from allocated parking spaces for future residents.

C3.32 Cycle parking standards are not available for houses, though can be accommodated within the garage/shed for each individual dwelling. A total of 12 cycle parking spaces will be provided to serve the apartments. This is in accordance with the NCC Cycle Parking Standards which, for apartments, require the provision of 1 cycle parking stand per 5 bedrooms.

Landscape and Green Infrastructure

C3.33 The redevelopment of the USW Caerleon site offers an opportunity to retain and preserve the best of the existing landscape and trees, incorporating these into newly landscaped areas to create an accessible and varied network of spaces across the development and connections to the landscape and the settlement beyond.

C3.34 The landscape strategy seeks to integrate arboriculture, ecology, amenity, and Sustainable Drainage ('SuDS') provision, utilising some of the best existing areas of grassland and glades, improving and extending this character through the informal landscape areas across the site.

C3.35 At the centre of the development, the gardens forming the historic foreground to the main building will be renovated, reinstating their original formal character and enhancing this space for relaxation and tranquillity.

C3.36 The rugby field area will be 're-wilded', with significant tree and meadow planting creating a naturalistic feel while also maintaining a suitably large 'kick-about' space at its centre and providing a new Local Equipped Area for Play ('LEAP') at its northern end.

C3.37 In the north east of the site the proposed landscaping capitalises on the topography and tree cover to create opportunities to enjoy framed views out to the east while also allowing residents to explore the more wooded character of this part of the site.

C3.38 A number of key principles will drive the detailed design of the public realm:

- i Existing trees and shrubs of higher quality will, where practical and appropriate, be retained or translocated to better locations (work has already been undertaken on this with the Landscape Architect, Arboriculturist and NCC Tree Officer, who have met on site to identify and agree which specimens would be moved);
- ii The scheme will seek to offer 3 distinct characters of landscaped space – formal, tranquil gardens around the central Listed Building; Informal naturalistic meadows and glades around the old rugby field and the pocket parks between new housing; and a shady wooded hillside trail in the north east;

- iii Throughout the site selected framed views of the landscape beyond the site will be identified and created, enhancing the scheme's sense of place and the new communities sense of connection to the wider urban area;
- iv SuDS will be seamlessly integrated with the public open space and offer further biodiversity and aesthetic value through sensitive planting treatments and design;
- v Plants will be selected to be suitable for the receiving environment and for micro-climate and soil conditions on site. Wherever possible species of native and/or wildlife value will be used and these will be sourced as locally as possible;
- vi The whole scheme will be carefully designed to be accessible to all and offer spaces and places at a variety of scales, types and character such that the whole community is catered for and can utilise the site landscape for recreation, exercise and relaxation. This will aim to encourage residents out of their homes, to engage with the landscape and the associated health benefits of doing so and to consider non-vehicular modes of transport for local journeys.

Drainage

- C3.39 Infiltration tests showed very low permeability characteristics across the site therefore the proposed drainage strategy will comprise:
- i Discharge to the existing public combined sewer in Lodge Road;
 - ii A reduction in the amount of hard paved areas and roof areas;
 - iii The use of pervious paving suitable for pedestrian and/or vehicular traffic that allow rainwater to infiltrate through the surface and into the underlying areas. As the permeability of the soil is insufficient to allow infiltration, a lined system will be required with eventual connection onto the surface water drainage network.
 - iv The creation of permeable pavements constructed using interlocking block paving within private parking areas and on shared drives.
 - v Bioretention filters (rain gardens) within shared surface adoptable roads. These are surface runoff controls that capture and treat storm water runoff, with excess runoff from extreme events passed forward to other drainage facilities. The filtered runoff is collected and returned to the conveyance system and part of the runoff will be removed through evaporation and plant transpiration.
 - vi Local swales directly adjacent to key roads and at edges of parcels.
 - vii Oversized swales and detention basins.
- C3.40 Foul drainage calculations have found that in comparison to the potential existing drainage regime (where the site is in occupation as a college, with student accommodation and a sport centre) the proposed development will result in a reduction in the foul water discharge from the site to the public sewer network.
- C3.41 As most surface water from the existing development enters the combined sewers the decrease in rates following the implementation of the proposed development and the drainage strategy will be beneficial to Dwr Cymru Welsh Water ('DCWW') and ensure that overall volumes entering the sewers are significantly decreased.
- C3.42 Given that the topic of Water Resources is not included within this EIA, a standalone Drainage Strategy Report has been submitted with the planning application. A schematic of the proposed Sustainable Drainage Strategy ('SuDS'), taken from the Drainage Strategy Report, is provided at Figure C3.1.

[illegible]

Sustainability

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- Chapter C: Site and Scheme Description

- a Adopting a 'fabric first' approach to housing design which reduces energy consumption by highly insulating walls, floors and roofs which achieve low air-leakage;
- b The provision of an electric car charging points with each new dwelling;
- c Reducing waste, providing for the suitable storage of waste and allowing for convenient waste collections;
- d Achieving the necessary Building Regulation requirements across all units on the site;
- e Reducing flood risk through sustainable drainage systems that also have ecological and recreational benefits;
- f Managing surface water run-off with no net increase in the rate of surface water;
- g Improving linkages and accessibility by alternative modes of transport to the car to maximise sustainable transport choices; and,
- h Implementation of a Travel Plan.

C3.45 Based on the above the development takes a positive approach to sustainability and will implement measures that meet or exceed current UK sustainability indicators across the spectrum of economic, social and environmental issues.

C3.46 The approach will ensure that the residential development will be of a high standard in energy efficiency and design terms, reducing carbon emissions where possible and meeting or improving on Building Regulations standards. The design of the homes will incorporate opportunities to meet future occupiers' needs in a housing layout that sympathetically and positively responds to the listed buildings within the site and the wider community within which the development sits.

C3.47 The development will ensure that resources are carefully used, with materials re-used on site and recycled where possible. Material for the development will be sourced from local provisions where possible and during the operation of the development recycling targets will be met.

C4.0

Construction Methodology

Programme and Phasing of works

- C4.1 A Phasing Plan has not been submitted with the application as the scale of the development means that it is expected to come forward in a single phase. For the purposes of the EIA a circa 5-year construction period has been applied. The build rate is 40 dwellings per annum ('dpa') and it is expected that the first completions will be achieved in 2021, with full completions (40 dpa) being achieved from 2022. The build will be complete in 2027.
- C4.2 Further investigation and surveys will be undertaken as necessary, including penetrating radar survey to confirm the location of existing services. Any services affected will either be diverted or isolated and capped off.
- C4.3 Following site set-up, the first stage of work will involve the demolition of buildings within the site. Cut and fill earthworks will create the levels needed to deliver the development. As development progresses the internal road network and cycleways will be laid, along with the services and infrastructure necessary to allow for the residential development.
- C4.4 Public open space, landscaping and works to the existing rugby pitch to create a kick-about pitch alongside a LEAP.
- C4.5 Alongside the new build construction work will commence on the conversion of the listed buildings into residential development.

Hours of Work

- C4.6 The anticipated core working hours for noise-generating construction across the development site will be as follows:
- 1 08:00-18:00 on weekdays;
 - 2 08:00-13:00 on Saturdays; and
 - 3 No working on Sundays, Bank or Public Holidays.
- C4.7 It is recognised that approval will be required for any work undertaken outside of these hours that may impact on nearby noise sensitive receptors. It is also recognised that quiet working periods may be required within the hours of work identified above for the amenity of neighbours and local businesses.
- C4.8 Site operatives may be on site for short periods before and after the above core hours in order to set up/down the site at the start and end of each working day. Where non-noise generating construction activities are scheduled these may be undertaken outside of the core working hours only if they do not impact on nearby noise sensitive residential receptors.

Site Specific and Environmental Control Measures

- C4.9 A Construction Environmental Management Plan ('CEMP') has been prepared in support of the application and is provided at Appendix C3. The purpose of this document is to ensure that any disruption and adverse effects during the construction period are kept to a minimum. This includes the following information:
- General Construction Site Information;
 - Construction Programme;
 - Construction Traffic Management Plan;

- Storage & Compound Details;
- Fencing, Security & Site Hoarding Details;
- Noise & Vibration Management Plan;
- Dust, Emissions & Odours Management Plan;
- Cementitious Materials Controls;
- Lighting Management Plan;
- Contaminated Material Plan;
- Construction Drainage Plan;
- Green Infrastructure Plan;
- Site Waste Management Plan; and
- Contacts & Complaints.

C4.10 The CEMP should be read in conjunction with the Demolition CEMP, which will be prepared by the specialist Demolition Contractor.

C5.0 Consideration of Alternatives and Design Evolution

- C5.1 Schedule 4 of the 2017 Regulations (as amended) requires an identification of the main alternatives for the development which have been considered and assessed by the applicant and the main reasons for the choice which has been made, taking account of the environmental effects.
- C5.2 To comply with this requirement, this section provides a review of:
- 1 Likely effects in the event that the development does not come forward (the ‘no development’ scenario);
 - 2 Consideration of whether alternative sites would achieve the objectives of the current proposal; and
 - 3 Consideration of the evolution of the design of the scheme and whether alternative forms of development would achieve the same objectives.
- C5.3 Planning application reference 17/0781, which as discussed within ES Chapter A, considered the following alternatives:
- 1 Option 1 saw the retention of the existing University sports facility as a public leisure centre whilst redeveloping the remainder of the site for predominantly residential use (280 new homes), with the existing Kegie building retained for employment, with additional employment to the south east. The University undertook extensive marketing in an endeavour to find a new freeholder and operator of the existing University sports facilities however this was not possible and demonstrated that there is not sufficient demand to ensure a viable future. The sports facility was therefore proposed for demolition in all other options.
 - 2 Option 2 assumed that the sports facility is demolished and redeveloped, with the remainder of the site for predominantly residential use (350 new homes). The existing Kegie building was proposed to be retained for employment use, with additional employment to the south east. This was discounted due to the amount of residential development within the site, with the associated adverse impacts on transport and air quality aspects.
 - 3 Option 3 assumed that development would occur on both the existing sports centre and the rugby pitch, delivering approximately 350 new homes. The existing Kegie building was proposed to be retained for employment use, with potential for additional employment to the south east. This was discounted for the same reasons as Option 2, with the additional adverse impact of the loss of a playing pitch without providing alternative recreation provision.
 - 4 Other options considered:
 - i The residential care market – discounted due to the limited size of the settlement of Caerleon, the distance of the site from local amenities and the timescales for bringing forward the surrounding new build residential development meaning that the strength of demand was not certain at that point in time.
 - ii The office market – discounted as the office market in and around Newport has remained stagnant for the past five years. Availability of office accommodation has remained relatively constant and has been heavily influenced by poor demand and a lack of new development. Caerleon is not considered a typical out of town office

location and has seen only a handful of small transactions over the last five years. Business Parks at Junctions 24 and 28 of the M4 motorway are better locations and benefit from surplus land for additional development.

- iii Hotel – Newport benefits from sufficient hotel provision within the City Centre and in close proximity to the M4 motorway junctions. Market assessments have not revealed any significant interest in the former Campus from hotel operators.
- iv Retail – As an ‘out of centre’ location the principle of significant retail development is not established. Whilst there may be some potential for small scale retail provision as part of a wider mixed-use development, the masterplan did not propose any retail uses.

C5.4 We have not considered these alternative options again as their reasons for dismissal remain valid.

C5.5 We have also not considered the development as proposed by application reference 17/0781, which was refused. This was a hybrid planning application seeking full planning permission for the conversion of the listed buildings to flats and houses and the expanded use of the Kegie building to include office floorspace. Outline planning permission was sought for the construction of up to 263 dwellings, 2,400 sq m of flexible B1(a)/D1 non-residential institution floorspace and ancillary development/access/landscaping/infrastructure works.

C5.6 The application was refused on the grounds that it would have a significant adverse effect on highway safety, the free flow of traffic, residential amenity and human health due to an increase in traffic generation, lack of highway capacity at Station Road and New Road/High Street/Caerleon Road, with associated increases in congestion and an adverse impact on air quality in the Caerleon AQMA. Traffic and Air Quality impacts were therefore found to be unacceptable for this configuration of development within the site.

‘No Development’

C5.7 Guidance in carrying out an EIA suggests that it is good practice to consider the evolution of a site in the absence of the development proposed (in other words a ‘do nothing’ alternative).

C5.8 The ‘no development’ scenario is reflected in the ‘Future Baseline’ discussions that form part of each of the topic chapters (D to J) in this ES. This describes the likely state of the environment without implementation of the development, where the baseline scenario changes naturally.

C5.9 If no development was to come forward at the site it is possible that the site would remain in its current use, with most buildings vacant. This is however unlikely given the financial exposure of a vacant site. Alternatively, it is possible that the site returns to its former use or another suitable use applicable through permitted development rights.

C5.10 **Transport:** If the development were not to come forward the transport impacts would remain the same as the current baseline conditions. The minor beneficial impacts that the development is expected to bring with regards to severance, driver delay, pedestrian and cyclist delay, pedestrian and cyclist amenity and accidents and safety would not be delivered. This includes new bus stops, improvements to the existing Public Right of Way on the northern boundary of the site, improved pedestrian linkages and a commitment to fund an enhanced on-road cycle link from the site via Lodge Road to Roman Reach (linking with the National Cycle Network).

C5.11 **Air Quality:** With no future use of the site the Air Quality assessment modelling shows that NO₂ concentrations exceed the Caerleon High Street AQMA objectives in 2022 and 2027, although the concentrations decrease over time. If the site returns to 100% of its former use the

maximum modelled concentration continues to exceed the NO₂ objective in 2027. Air Quality impacts in the 'No Development' scenario is therefore worse than the proposed development.

- C5.12 **Landscape and Visual:** If the site remained as existing the landscape and visual impacts would remain as existing, though a lack of investment and management could decrease the condition of the site and result in the loss of specimen trees and an increase in the growth of scrub. The extent of private, inaccessible open space would also remain and enhancements to the Public Right of Way would not be delivered.
- C5.13 **Arboriculture:** Whilst tree condition hazards become less of a risk (with a considerably reduced occupancy of the site), the management of tree stocks would decline and any structural or health issues would go unnoticed and unmanaged. This would compromise the structural integrity of the trees and life expectancy. Hedgerow maintenance would also decline, which would reduce the amenity value. The amenity and habitat gains delivered by further tree planting and management would not be delivered.
- C5.14 **Ecology:** Land practices are expected to remain the same, with the majority of the site falling into disuse. Without management dense scrub and shrubs are likely to encroach across the grassland habitat and hardstanding, whilst buildings will likely degrade and deteriorate. This could make them more suitable for use by bats and nesting birds.
- C5.15 **Cultural Heritage:** The proposed development seeks to secure the long term, viable use of the listed buildings and secure their continued future maintenance. The continued disuse of the buildings would lead to the gradual decline of the fabric of each building, and the incremental loss of their significance and special interest, as well as the loss of positive elements of their setting that contribute to that significance. Any surviving archaeological remains would remain unchanged and would continue to survive as buried features.
- C5.16 **Socio Economic:** The delivery of 218 dwellings would not come forward that would contribute towards meeting housing need in Newport and Caerleon. Resident expenditure and construction employment benefits would also not be delivered. Whilst the site would continue to be used temporarily as a filming location, the majority would remain vacant and underused and would not make the best use of a sustainable brownfield site.
- C5.17 Given that the only potential benefit of the 'Do Nothing' scenario over the proposed development is the creation of new habitats (through degradation and deterioration of trees and buildings), on balance the benefits of delivering the proposed development within the site outweigh the benefit of the 'Do Nothing' scenario.

Alternative Sites

- C5.18 The applicant has not considered any alternative locations for the proposed development.

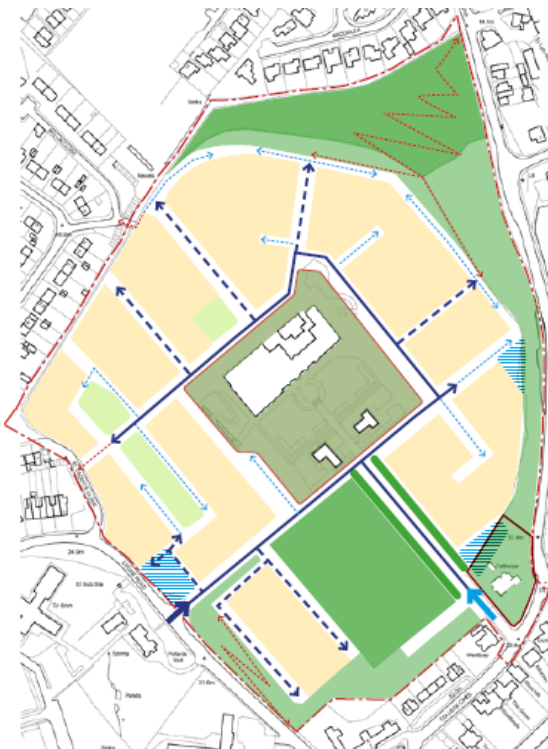
Alternative Designs

- C5.19 The scheme design has undergone many different iterations during design development and three pre-application consultations have taken place with NCC in order to present the designs and ascertain feedback from NCC Officers from different departments.
- C5.20 The concept for the site is to create a new neighbourhood with the listed college buildings at its heart, set within the backdrop for a landscape setting. Key structural elements of the concept were (and continue to be):
- i The provision of a new high quality residential development with a landscape-led approach to integrate the development into the historic and landscape character of the site.

- ii Retain and protect the heritage asset in the Edwardian Main Building, its lodges and historic gate piers.
- iii Retain and build on key mature green infrastructure to create a variety of high quality contrasting green public open spaces across the site. These include the formal landscape gardens of the listed building, the woodland edge and Arboretum, the pitch, and number of informal open spaces based around retained trees.
- iv Creation of a SuDS network of swales and attenuation features that form part of the new landscape framework for the site providing biodiversity improvements as well as sustainable drainage.
- v Creation of a clear and legible network of permeable public streets, shared surface streets and private drives.
- vi Creation of a neighbourhood with pedestrian and cycle connectivity across the site and into the wider network, including improvements to the existing public right of way to the north through the woodland to Ponthir Road and Bellin Close.
- vii The architectural character is proposed to comprise a consistent and simple pallet of materials subservient to the listed buildings so as not to compete but to provide an appropriate high quality setting.

C5.21 From the above a Concept Framework Plan (Alternative Design Option 1) was prepared for the delivery of up to 216 new dwellings within the former USW Caerleon site (see Figure C5.1).

Figure C5.1 Alternative Design Option 1 - Concept Framework Plan



C5.22 Feedback to this option included that:

- Permeability across the site is key.
- In respect of the existing trees, there are a range of unusual botanical specimens that cannot be found anywhere else in Newport. Where they are retained sufficient space should be

provided around them above the Root Protection Area ('RPA') restriction. If trees cannot be retained consideration should be given to translocation.

- A 5m buffer is required between the canopies of the trees and back gardens along the woodland edges.
- Consideration must be given to key frontages around the listed building.
- Connection into the adjacent public open space to the north should be considered.
- The existing Public Right of Way should be retained and increased to a 3m footway/cycleway.
- Phasing and certainty in relation to the listed building is key.

C5.23 Alternative Design Option 2 (see Figure C5.2) took these comments on board and also proposed additional improvements including:

- 1 Adding active frontage to St Cadocs Close
- 2 Giving more space to trees within the western informal public open space
- 3 Reducing the road to West of the listed building to a private drive
- 4 Introducing additional East-West connecting streets
- 5 Seeking to reduce the level of the existing road to allow direct access onto 'College Road'.

Figure C5.2 Alternative Design Option 2 - Illustrative Masterplan



C5.24 Alternative Design Option 3 re-orientated homes in the north to create a more active frontage to the enhanced footpath and cycleway. The landscape plateau adjacent to the entrance from Lodge Road was reshaped in order to create a 'greener' and more appealing entrance feature. The drainage strategy was also rationalised to include the location of swales. Option 3 was presented to the Case Officer for comment, alongside an alternative option for the rugby pitch

that proposed a smaller kick-about area alongside a LEAP, which it was felt would be of greater benefit to future residents. This was supported.

C5.25 The reconfiguration of the rugby pitch area has also allowed for the provision of additional housing within the site and therefore the final proposal is for 218 dwellings in a mixture of flats and houses. It was also decided that the planning application would take the form of a full/ detailed planning application rather than an outline planning application in order to provide certainty as to the proposed development and in particular impacts on heritage and highway receptors.

C5.26 Whilst the design development has comprised ‘tweaks’ rather than major changes, the design has evolved taking into account environmental information that has emerged throughout the design process and discussions with the local authority. This has maximised the environmental benefits and reduced negative impacts, particularly in respect of:

- 1 Open space and recreation provision within the site from alterations to the rugby pitch to create a kickabout area and a LEAP, as well as the creation of an informal recreation area in the north of the site;
- 2 The approach to relocating specimen trees elsewhere within the site; and,
- 3 Maximising active frontages to open space and public rights of way.

C5.27 The above measures have improved the design of the development and will increase benefits for ‘Transport’, ‘Arboriculture’ and ‘Socio Economic’ receptors (i.e. future residents and pedestrian/cycle movements within and through the site and existing specimen trees).

Influence of the EIA in Design Evolution

C5.28 The above discussion of alternative designs describes the design development and evolution that has taken place. There are a number of areas where the EIA process has influenced the design of the proposed scheme, as summarised in Table C5.1 below.

Table C5.1 Influence of the EIA in the Evolution of the Development Design

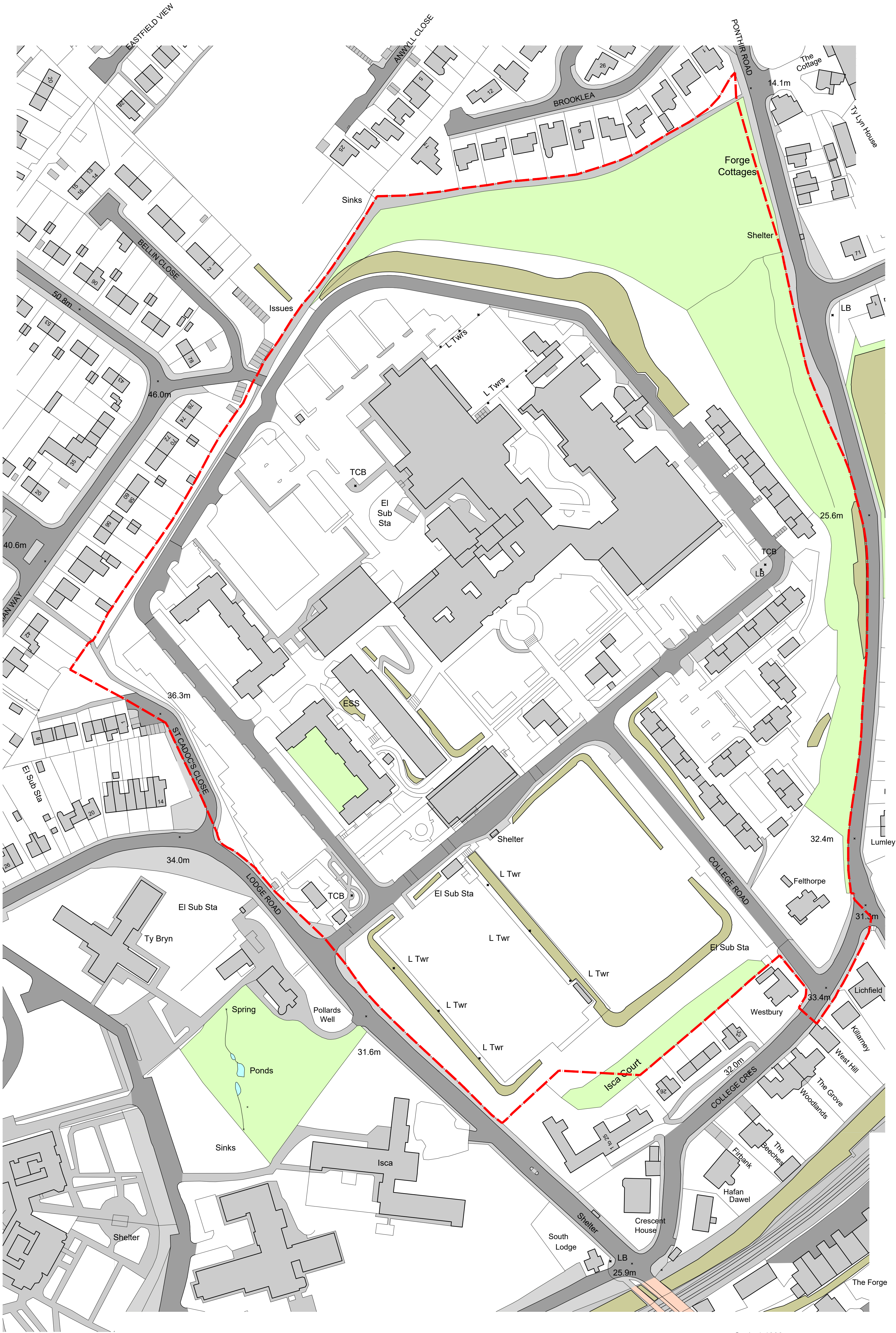
Environmental Topic	Influence of the Assessment on the Development Evolution
Transport	Approach to road hierarchy. Travel Plan measures to maximise the use of sustainable transport modes, especially for the school commute.
Air Quality	-
Landscape and Visual	Alignment of houses in order to minimise impacts on the Caerleon Campus ‘Main Building’ listed building and its setting. Setting building heights and establishing green infrastructure to minimise impacts on landscape and visual receptors.
Arboriculture	Relocation of specimen trees that require removal.
Ecology	Landscaping and tree planting, as well as approach to the re-use of the listed buildings and creation of replacement bat roosts.
Heritage	Extent of development and building heights to minimise impacts on heritage receptors.
Socio Economic	Land use mix and interaction with adjacent uses, affordable housing provision.

C5.29 The process of EIA, as well as the consultation undertaken to date, has allowed mitigation measures to be introduced (where possible) at an early stage of the design, which seek to ensure that any environmental effects are avoided or minimised. Most of the inherent mitigation has been designed into the development proposals and is therefore inherent to the proposed development.

C6.o

Abbreviations & Definitions

- 1 AOD – Above Ordnance Datum
- 2 AQMA – Air Quality Management Area
- 3 CEMP – Construction Environmental Management Plan
- 4 dpa – dwellings per acre
- 5 EIA – Environmental Impact Assessment
- 6 ES – Environmental Statement
- 7 LEAP – Locally Equipped Area of Play
- 8 NCC – Newport City Council
- 9 NCN – National Cycle Network
- 10 NO₂ – Nitrogen Dioxide
- 11 PRoW – Public Right of Way
- 12 RPA – Root Protection Area
- 13 SAC – Special Area of Conservation
- 14 SINC – Site of Importance for Nature Conservation
- 15 SSSI – Site of Special Scientific Interest
- 16 SuDS – Sustainable Drainage System
- 17 TPO – Tree Protection Order
- 18 USW – University of South Wales (Caerleon)



Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:

Chk'd:

Rev:

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Contract: **Redrow Homes**
Caerleon Campus Redevelopment
Title: **Existing Site Plan**

Drawing No. Rev.

18137(05) 1100 -

Scale: 1:1000@A1

Date: 09/10/19

Drawn: art

Checked: -



SCHEDULE OF ACCOMMODATION 11.11.19				
No. of Units	%	House Description	storey height	beds
12		LETCOWORTH (TOOLBOX)	2 st	3 bed
18	13%	WARWICK	2 st	3 bed
12	9%	AMBERLEY	2 st	4 bed
22	16%	STRATFORD	2 st	4 bed
17	13%	OXFORD	2 st	4 bed
14	10%	OXFORD Lifestyle	2 st	3 bed
16	12%	CAMBRIDGE	2 st	4 bed
17	13%	WELWYN	2 st	4 bed
13	10%	HENLEY	2 st	4 bed
5	4%	HARRINGATE (MSU)	2 st	4 bed
5		RICHMOND	2 st	4 bed
sub total				
147				
Affordable				
6		2.1.3 Flat	2 St	1bed
6		4.2.2 House	2 St	12 bed
6		5.3.3 House	2 St	3 bed
sub total				
22				
SUMMARY TOTAL				
169				
NUMBER OF UNITS COVERAGE				
Net Developable Area				
5.8		hectares		
14.30		acres		
Density/Coverage				
14,992.52		Sq ft/acre		
29.14		uph		
CAERLEON CAMPUS: CONVERSIONS WITHIN EXISTING BUILDINGS				
No. of Units	%	House Description	storey height	beds
MAIN BUILDING				
23		1 bed flats		
18		2 bed flats		
1		3 bed flats		
Listed Building Outbuilding				
2		2 bed flats		
sub total				
44				
TJ WELBY				
1		2 bed house		
1		3 bed house		
sub total				
2				
TY HYWEL				
1		1 bed flat		
1		4 bed house		
sub total				
2				
FELTHORPE HOUSE				
1		5 bed house		
TOTAL				
49				
SUMMARY TOTAL NEW BUILD AND CONVERTED UNITS				
OPENMARKET (CONVERTED UNITS)				
49				
REDROW HERITAGE				
147				
AFFORDABLE (REDROW AFFORDABLE)				
10%				
NUMBER OF UNITS				
218				



Materials Key :

WALLS:

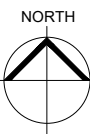
- Main Brick - Red Multi
Detail Brick - Smooth Red
- Main Brick - Red Russet
Detail Brick - Smooth Red
- Main Brick - Buff Multi Rustic
Detail Brick - Smooth Buff
- Render - Roughcast - Colour: Chalk

ROOFS:

- Forticrete Gemini roof tile
Colour: Red
- Forticrete Gemini roof tile
Colour: Slate Grey
- Forticrete 'SL8 tile' - Grey
- Forticrete 'SL8 tile' - Red

MORTAR: Natural Sand

Scale 1:1000



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Rev:	Chk'd:	Rev:
A	Additional brick and roof tile types added following client review. art 31.10.19	-
B	Redesign to accommodate water main as per client mark up; Site plot numbers renumbered from plot 107 onwards art 12.11.2019	
C	Plot 84 & 85 - Roof tile changed to SL8 tile in Grey art 21.11.2019	
D	Layout updated to 18137(05) 1101H	AF 26.11.2019

Chk'd:

PRELIMINARY	
PLANNING	✓
DESIGN	
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Contract: Redrow Homes
Caerleon Campus Redevelopment
External Finishes Layout

Title:

Drawing No. 18137(05) 1103
Rev. D

Scale: 1:1000@A1
Date: 09/10/19
Drawn: art
Checked: BK

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Scale 1:1000



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Rev:	Chk'd:	Rev:	Chk'd:
A		Minor revisions relating to which walls are screen walls, wall & fence panel or fences following client review; 1.2m high picket fence introduced to rear boundaries of some plots to take advantage of views.	
B		Redesign to accommodate water main as per client mark up; Schedule adjusted; Site plot numbers renumbered from plot 107 onwards.	
C		Retaining walls and external steps added; Guard railing to retaining wall added.	
C		Layout updated to 18137(05) 1101H	

Rev:	Chk'd:

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

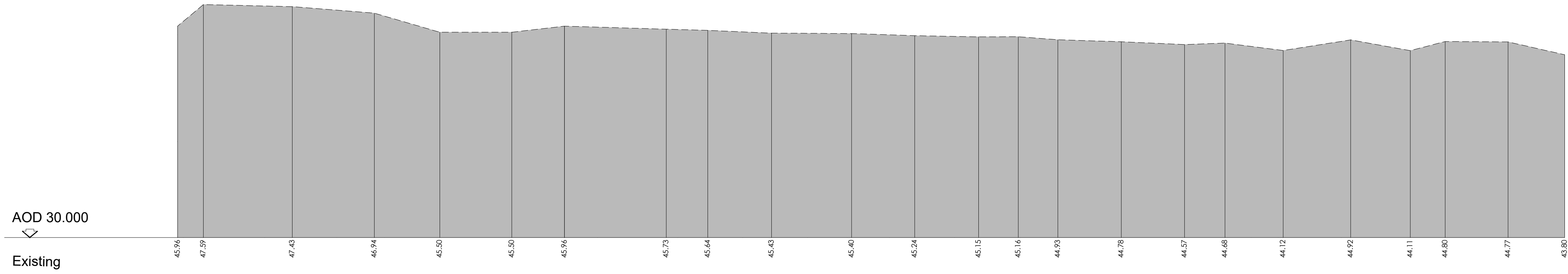
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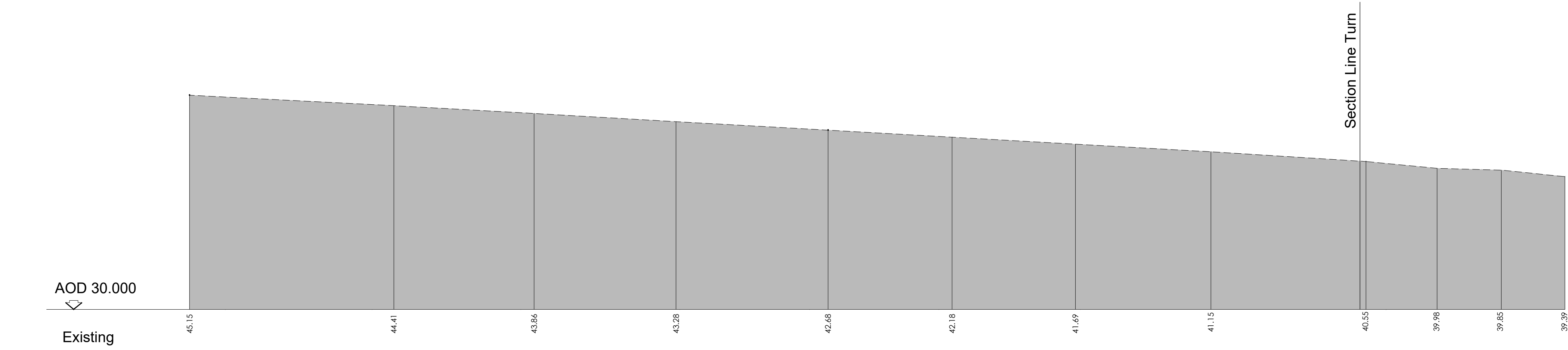
Contract: **Redrow Homes**
Caerleon Campus Redevelopment
Enclosures Layout

Drawing No. 18137(05) 1104
Rev. D

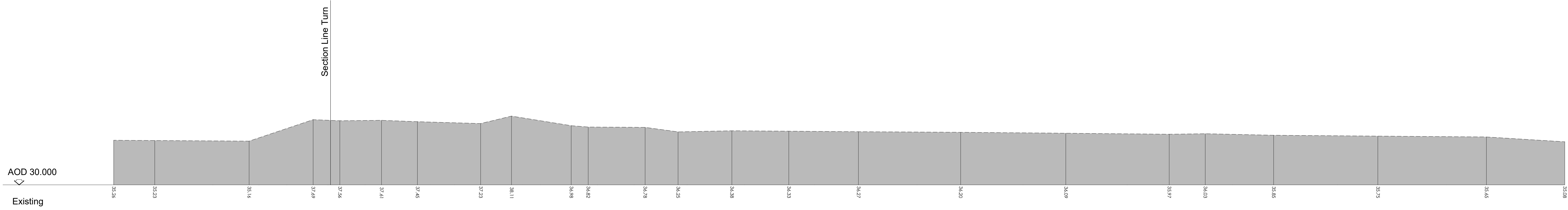
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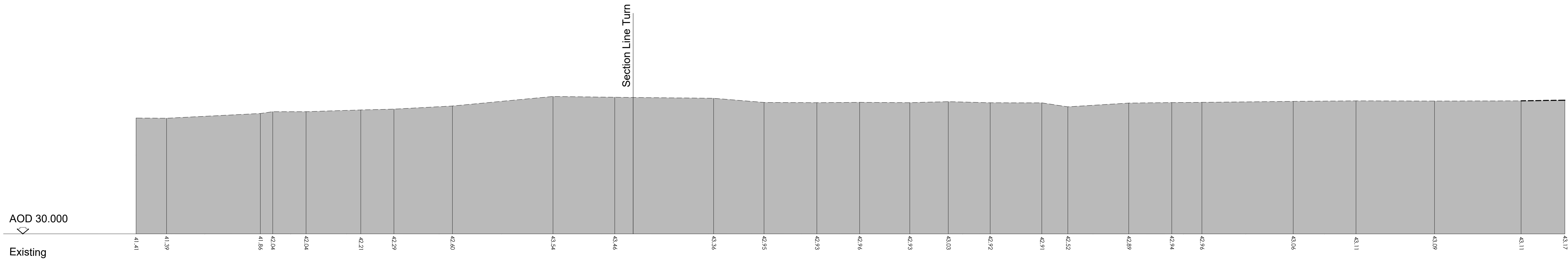
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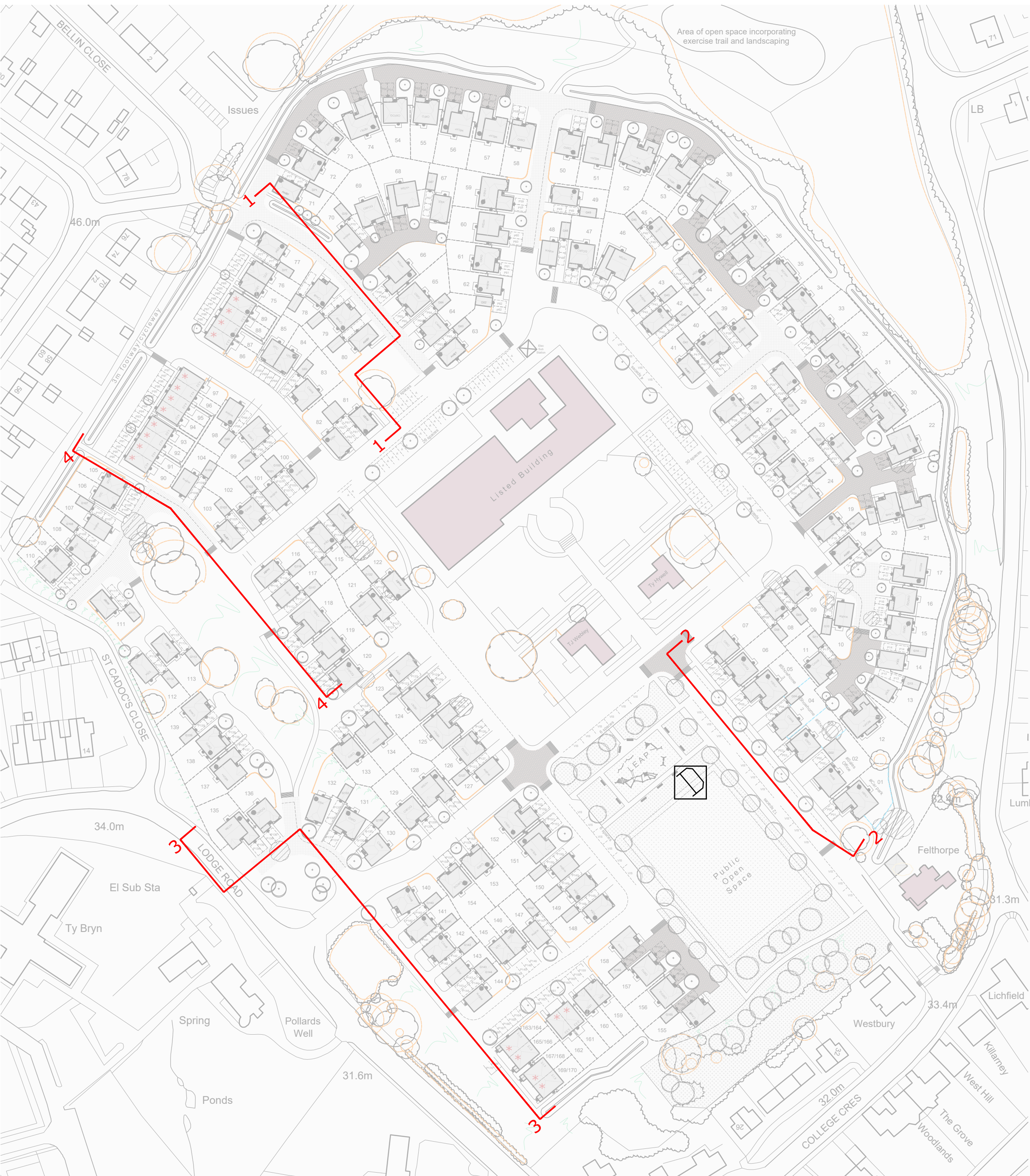
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1-200



Section 3-3
1-200



Section 4-4
1-200



Site Plan
1-1250

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Contract: Redrow Homes		Scale: As Shown @ A0	
Caerleon Campus Redevelopment		Date: 10/10/19	
Title: Existing Site Sections		Drawn: art	
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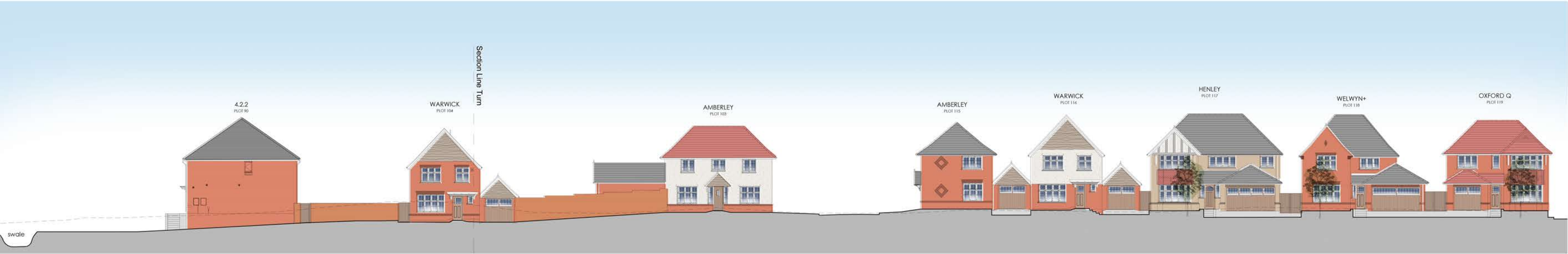
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Section 2-2
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Section 3-3
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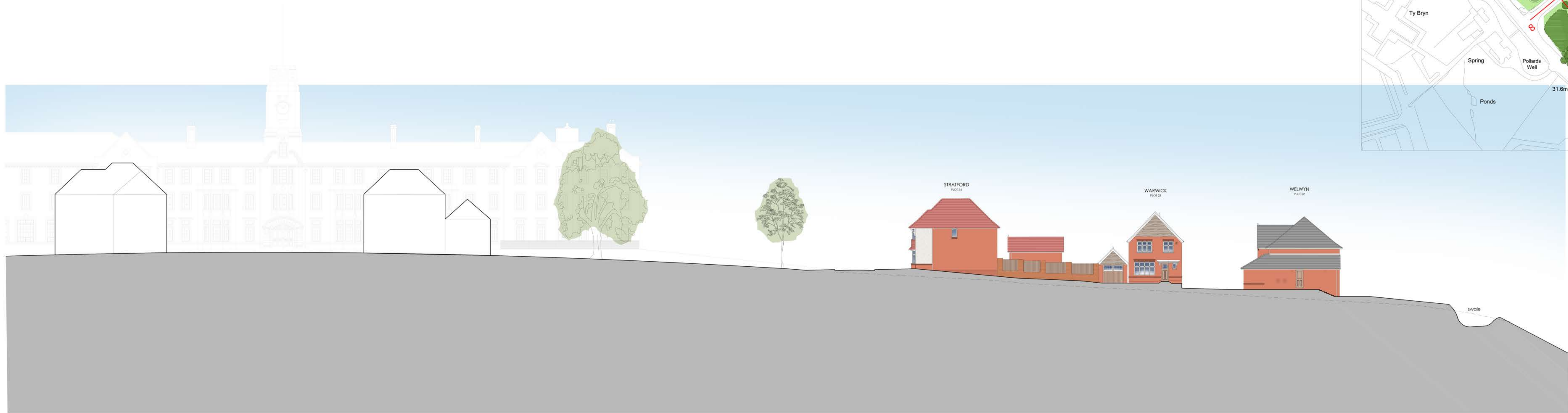
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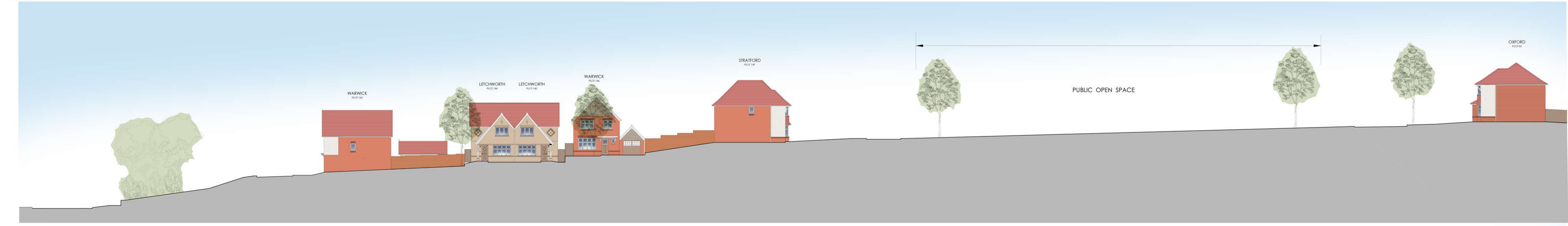
Site Plan
1-1250



Section 8-8
1-200



Section 8-8 (Continued)
1-200



Section 9-9
1-200



Site Plan
1-1250

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	A	All street elevations updated to suit changes to proposed Site Plan and current site level information from Hydrock. Section 9-9 added.		CHT 22.11.19							
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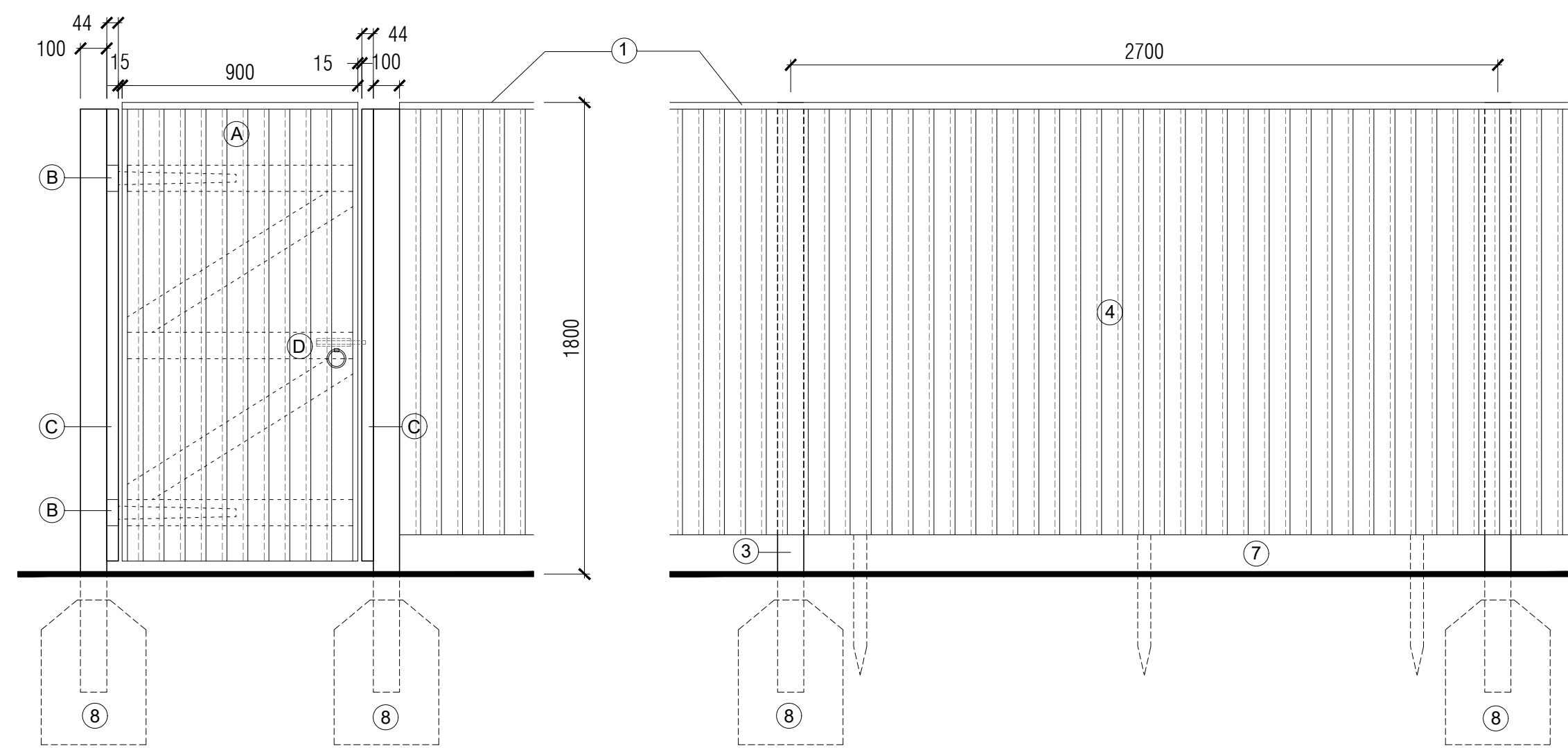
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Contract: Redrow Homes		18135 (05) 1108	A
Title: Caerleon Campus Redevelopment		Scale:	As Shown @ A0
Proposed Street Elevations - Sheet 3		Date:	Oct. 2019
		Drawn:	CHT
		Checked:	

Boundary Enclosure Details

NOTE:
Drawing to be read in conjunction with drawing No. 18137(05)104 Enclosures Layout

1800mm Close Boarded Fence and Gate

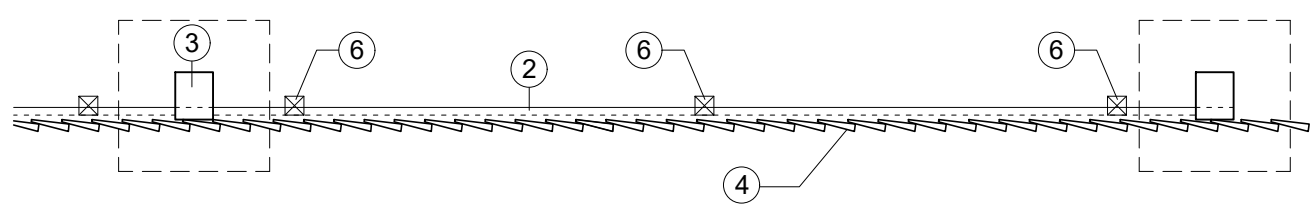


Elevation - Gate

Elevation - 1800mm Close Boarded fence

Key - Close Boarded Fence

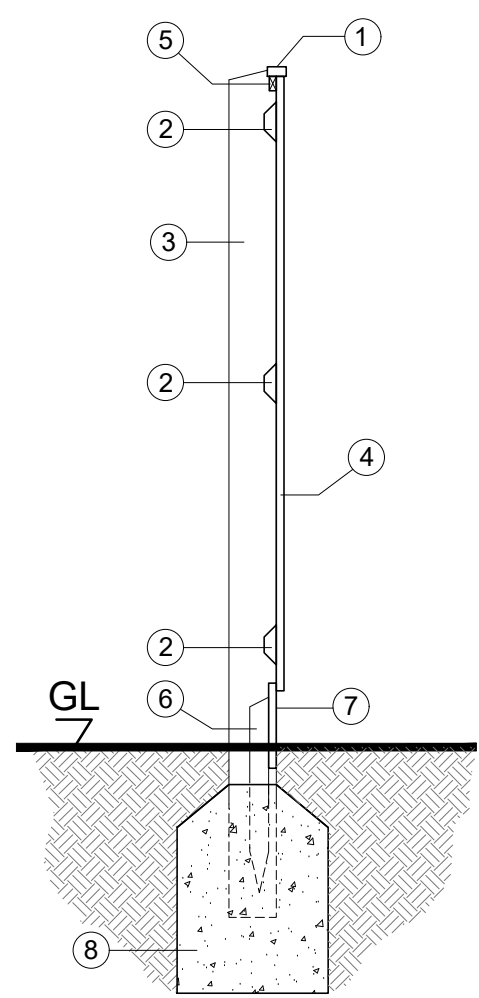
- 1 Cap rail - ex.50x25mm weathered and treated.
- 2 75 x75mm aris rail.
- 3 125 x 100mm treated timber posts at max. 2700mm cts.
- 4 100 x 22 - 8mm feathered edged board, lapped 20mm.
- 5 Ex.19 x 38mm s.w.rail supporting cap rail.
- 6 Ex. 50 x 50mm s.w.treated post to support gravel board.
- 7 Ex. 225 x 20mm s.w.treated plinth / gravel board.
- 8 Foundations to Engineer's detail.



Plan - 1800mm Close Boarded fence

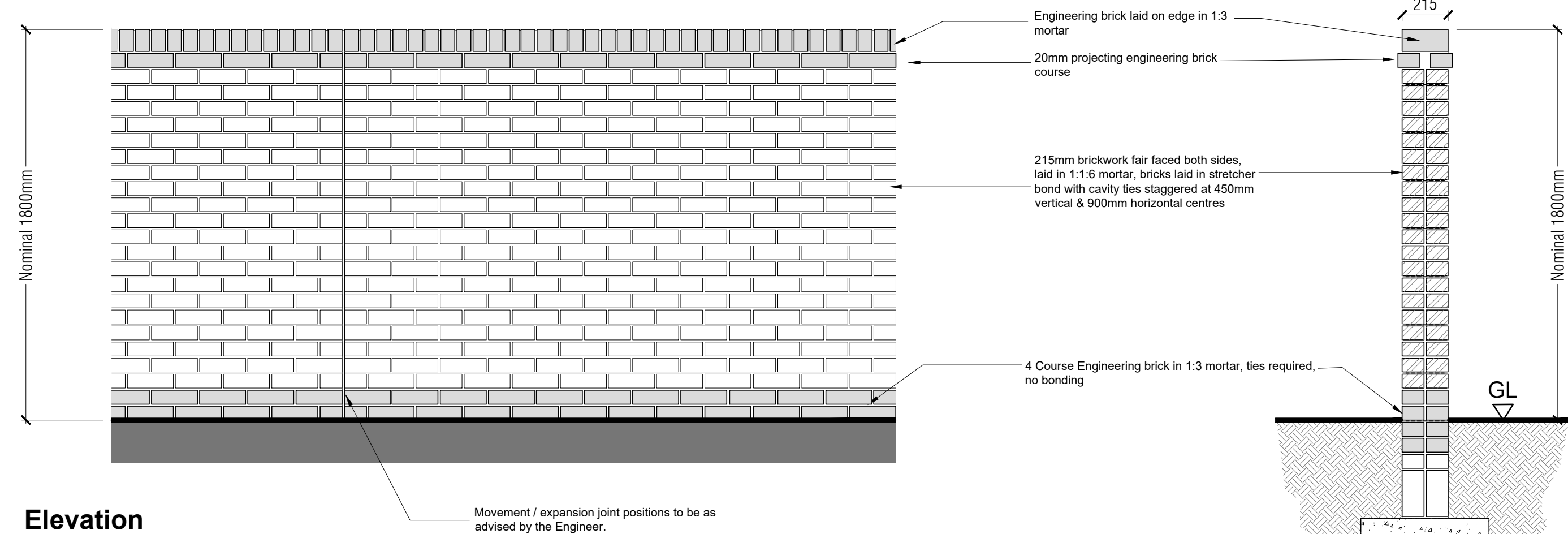
Key - Gate

- A Garden gate - 900mm wide s.w. treated framed, ledged and braced & cap rail. (Boarding to match fence).
- B Pair of 450mm galvanised tee hinges.
- C 44 x 69mm s.w. treated timber gate posts bolted to house or 125 x 100mm treated timber post.
- D 200mm galvanised barrel bolt & suffolk latch.



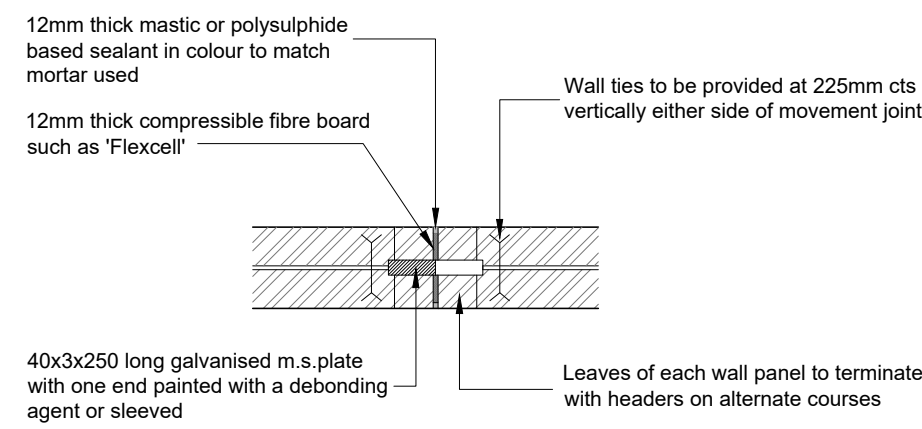
Typical Section

1800mm High Brick Screen Wall



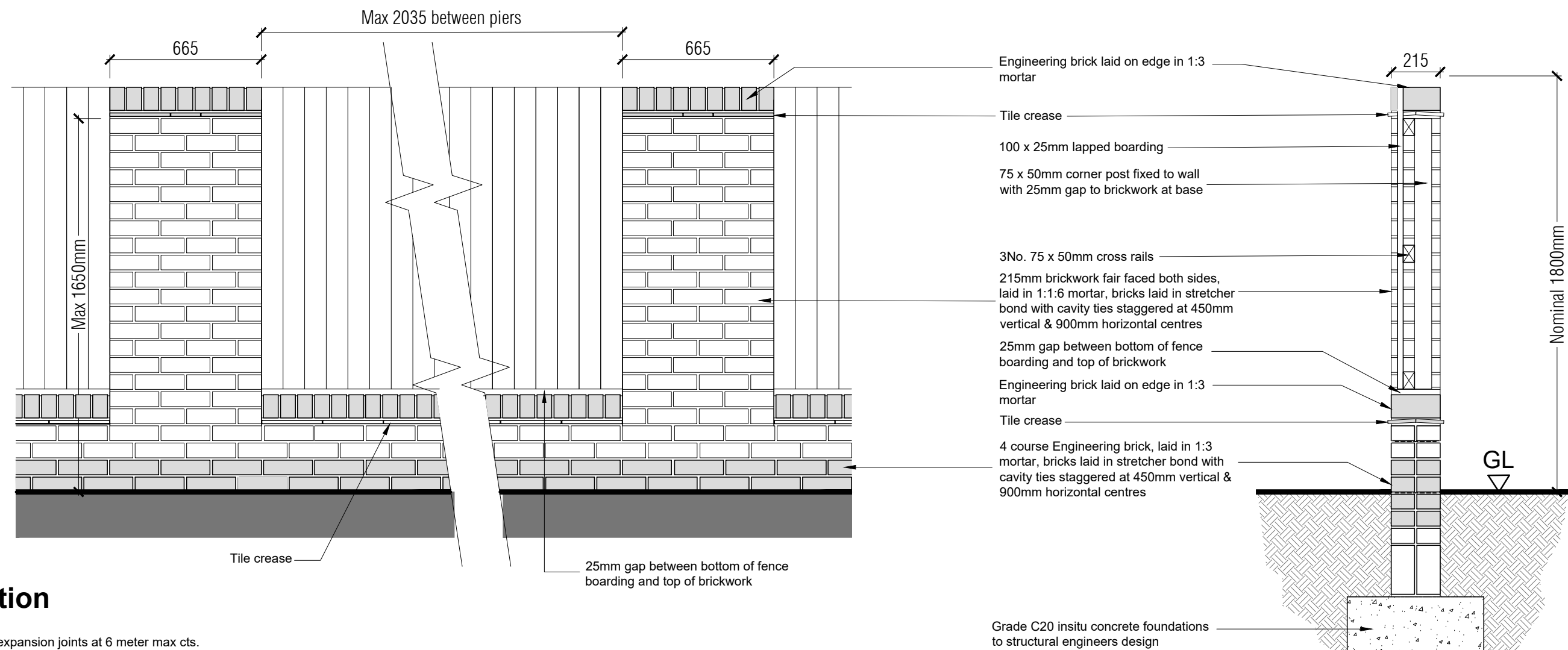
Elevation

Typical Section



Plan - Movement Joint

1800mm (Nom.) High Brick, lapped boarded & brick pier wall



Elevation

Typical Section

- Provide expansion joints at 6 meter max cts.
- Wall thickness may need to be increased to 327mm (with suitable increase in foundation width) in exposed locations & certain areas. Please check with Structural Engineer

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Rev:
- -

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- -

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Contract: Redrow Homes

Caerleon Campus Redevelopment

Title: Enclosure Details - Sheet 1 of 2

Drawing No. Rev.
18137(05) 1109 -

Scale: 1:20 @ A1
Date: 10/10/19
Drawn: art
Checked: .



Key : Affordable Tenure

Affordable Rented

Scale 1:1000



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Rev:	Chk'd:	Rev:
A	Site Layout updated in line with minor revisions as indicated on dwg.no.18137(05)1101C.	art 31.10.19
B	Plot numbers renumbered from plot 107 onwards following site revision to accommodate existing water main.	art 12.11.19
C	Layout updated to 18137(05) 1101H	AF 26.11.2019

Chk'd:	Rev:

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

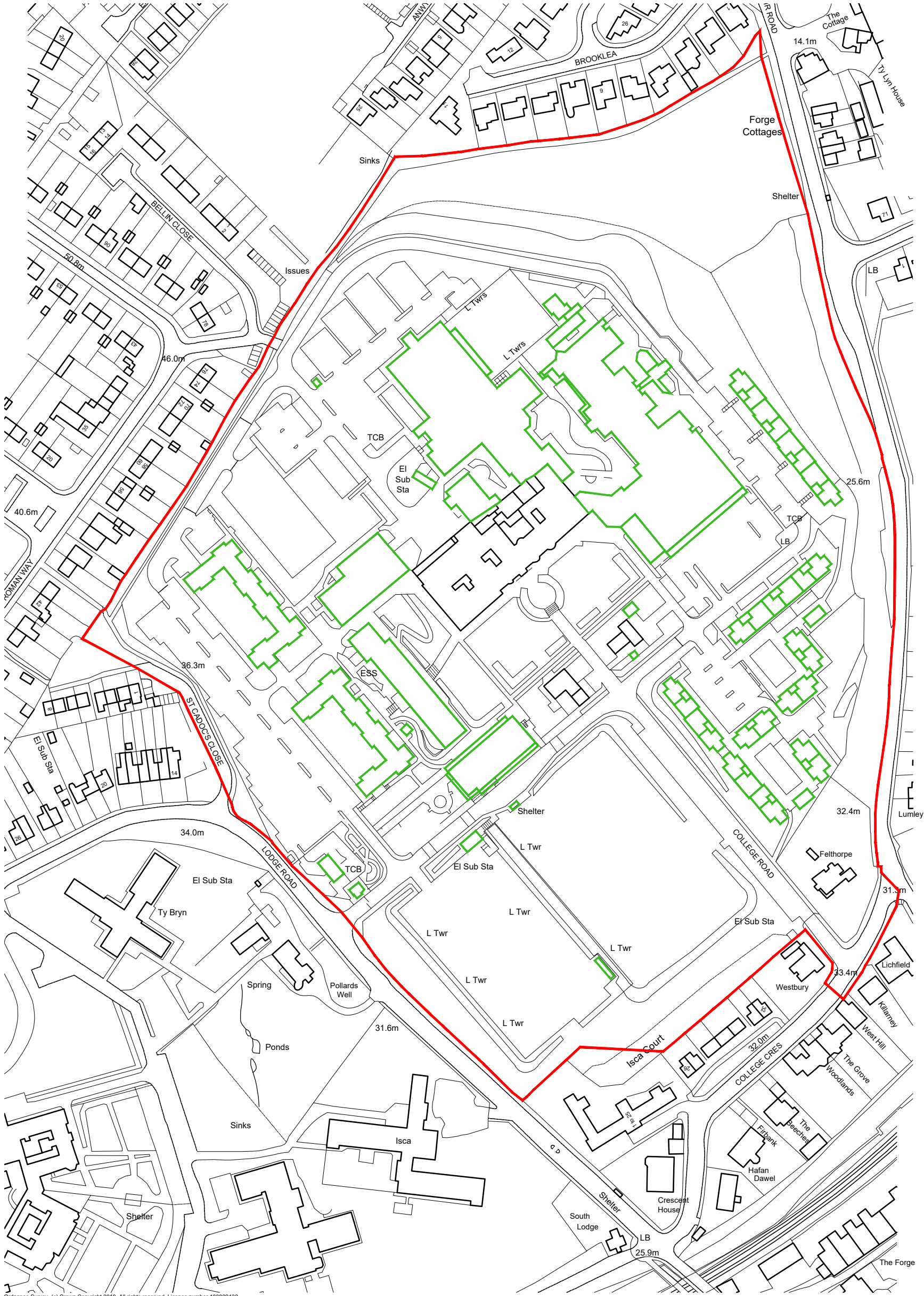
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Contract: Redrow Homes
Caerleon Campus Redevelopment
Affordable Tenure Layout

Drawing No. 18137(05) 1110
Rev. C

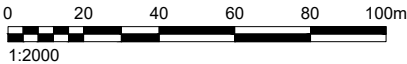
Scale: 1:1000@A1
Date: 11/10/19
Drawn: art
Checked: -



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KEY

- Extent of Full Planning Application
- Buildings to be demolished



NOTE: Demolition within the listed building to be as shown within the listed building consent.

This drawing must not be scaled. Figured dimensions and levels to be used. Any inaccuracies must be notified to the architect. Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:	Chk'd:	Rev:	Chk'd:
A	Red lines removed from layout. art 31.10.19	-	

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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Contract: Redrow Homes
Caerleon Campus Redevelopment
Title: Demolition Plan

Drawing No.	Rev.
18137(05) 1112	A

Scale: 1:2000@A3
Date: 11/10/19
Drawn: art
Checked: -



KEY : Refuse Collection Strategy

- Bin Muster / Collection Point
- Bin Route

Scale 1:1000



Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:	Chk'd:	Rev:
A	Site Layout updated in line with minor revisions as indicated on dwg.no.18137(05)1101C. art 31.10.19	-
B	Site layout revised to accommodate water main and plot numbers renumbered from plot 107 onwards. art 12.11.19	
C	Layout updated to 18137(05)1101H AF 26.11.2019	

Chk'd:

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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Contract: **Redrow Homes**
Caerleon Campus Redevelopment
Title: **Refuse Collection Strategy**

Drawing No.	Rev.
18137(05)1113	C

Scale: 1:1000@A1
Date: 11/10/19
Drawn: art
Checked: -

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Legend:

Storey Height

- 1 storey
- 2 storey
- 3 storey

Scale 1:1000



Figured dimensions and levels to be used. Any inaccuracies must be notified to the architect. Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:	Chk'd:	Rev:
A	Site Layout updated in line with minor revisions as indicated on dwg no. 18137(05)1101C.	art 31.10.19
B	Site layout revised to accommodate water main and plot numbers renumbered from plot 107 onwards.	art 12.11.19
C	Layout updated to 18137(05) 1101H	AF 26.11.2019

Chk'd:

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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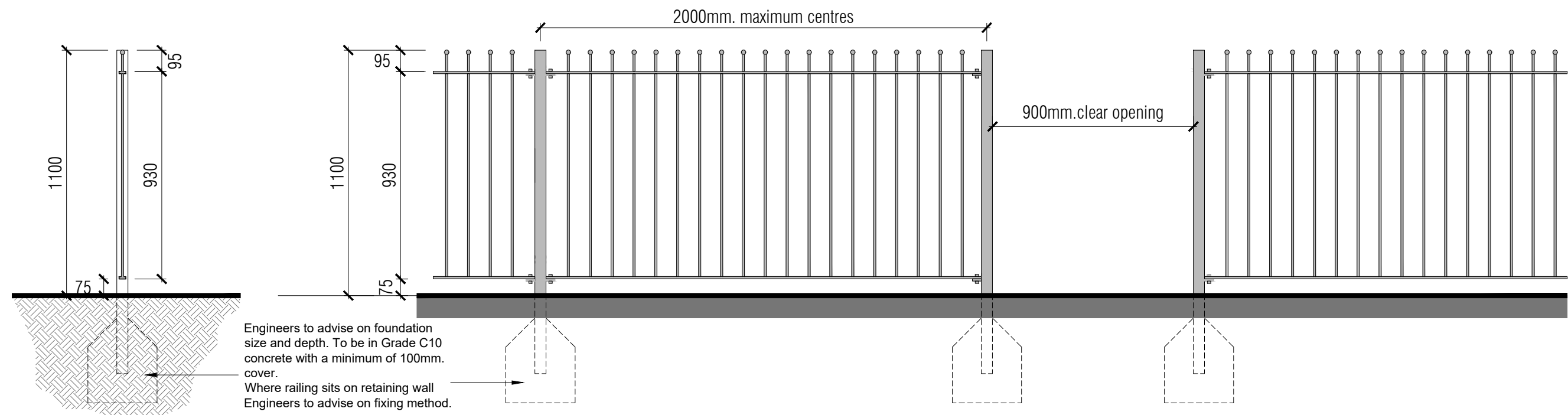
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Contract: Redrow Homes
Caerleon Campus Redevelopment
Storey Heights Plan

Drawing No.	Rev.
18137(05) 1114	C

Scale: 1:1000@A1
Date: 15/10/19
Drawn: art
Checked: -

BOUNDARY TYPE : 1100mm high black 'Ball Top' galvanised metal vertical railings



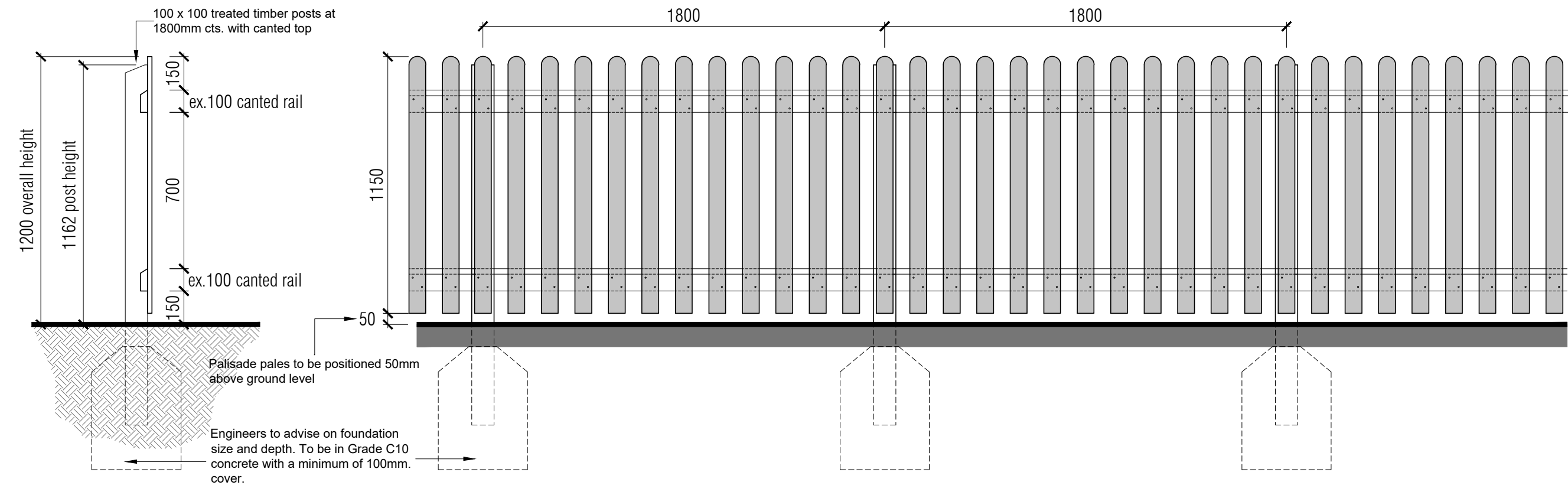
TYPICAL SECTION

ELEVATION

METAL WORK SPECIFICATION :

- Posts: 50mm x 50mm x 3mm RHS at maximum 2000mm cts.
Horizontal Rails: 30mm x 10mm flat bar.
Vertical Bars: Min.12mm diameter round bar with ball top.
Generally:
- all metalwork to be hot dip galvanised mild steel in accordance with BS EN ISO 1461:2009.
- the construction to be in accordance with BS1722-9.
- all posts, rails and bars to be finished in a two part epoxy paint.
Colour - Black
- all paint to be lead and cadmium free.

BOUNDARY TYPE : 1200mm high 'Round Top' timber Picket Fence



TYPICAL SECTION

ELEVATION

GENERAL SPECIFICATION :

- Posts:** 100 x 100 treated softwood plained posts at max.1800mm.cts. Posts to be approx.1650mm overall length projecting 1162mm above ground. To have splayed top.
Palisade pales: 75 x 22mm nom.section planed to a finished thickness of 19mm. Pales to have rounded top. Pales to be twice nailed to each horizontal rail. Gap between each pale to be 75mm.
Horizontal rails: 2 no. ex.100 x 38 planed canted rails to support pales.

This drawing must not be scaled.
Figured dimensions and levels to be used.
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Rev: - -

Rev: -

Rev: -

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

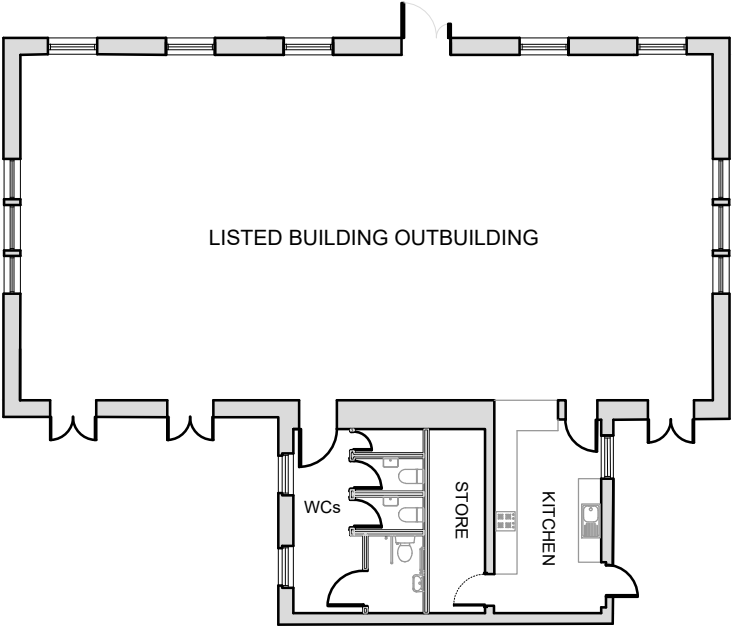
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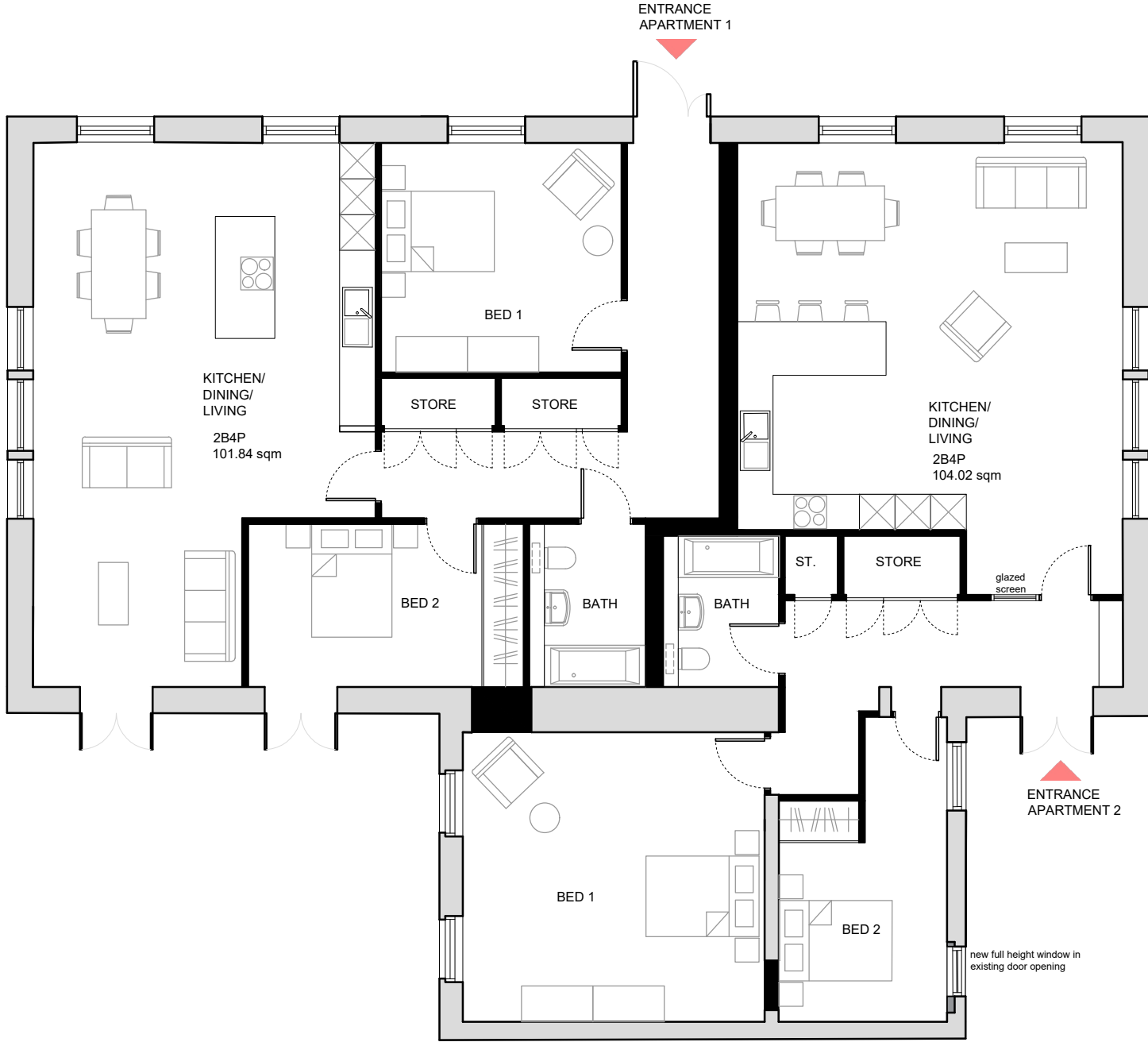
Contract: Redrow Homes
Caerleon Campus Redevelopment
Title: Enclosure Details - Sheet 2 of 2

Drawing No. 18137(05) 1115
Rev. -

Scale: 1:20 @ A2
Date: Nov.2019
Drawn: art
Checked: -



Existing Floor Plan
1:200



Proposed Floor Plan
1:100



Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:	
-	-

Rev:	
-	-

Rev:	
-	-

Rev:	
-	-

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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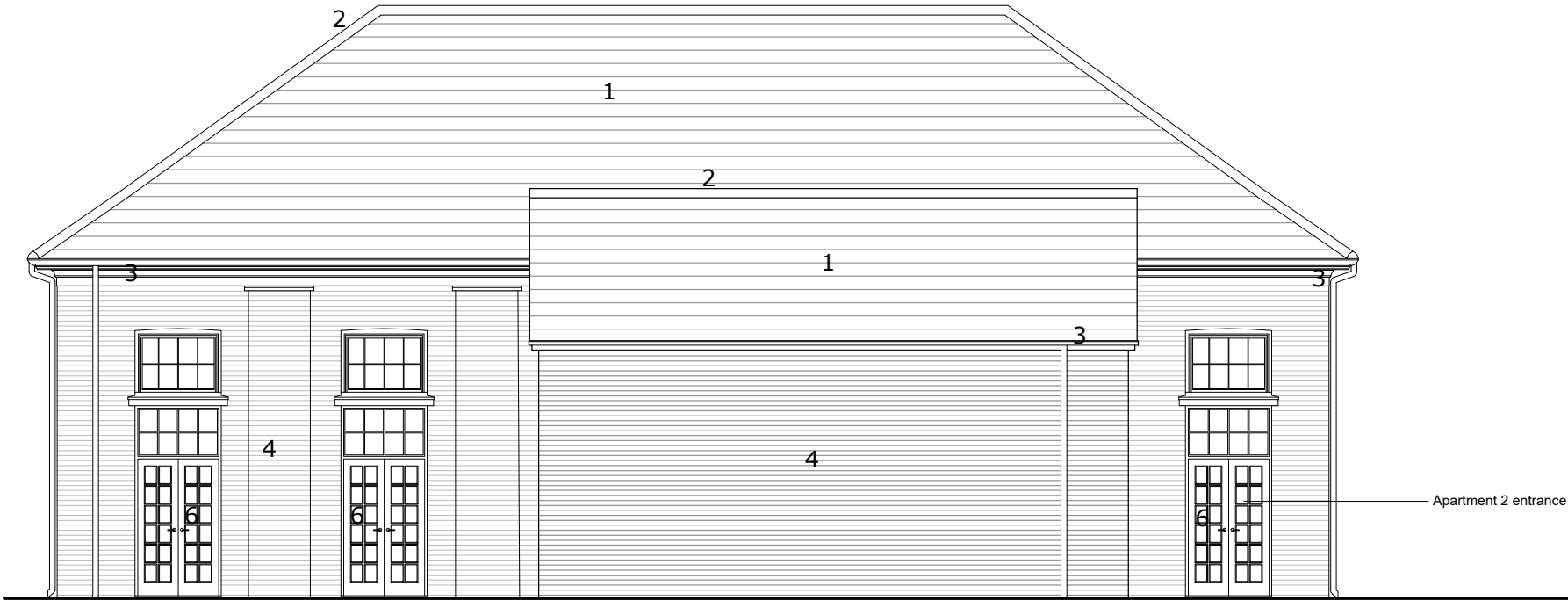
Contract: Redrow Homes
Caerleon Campus Redevelopment
Title: Listed Building Outbuilding Conversion - Plans

Drawing No. Rev.
18137(05) 1240 -

Scale: As Stated @ A3
Date: 16/10/19
Drawn: art
Checked: -



South Western Elevation As Existing
1:100



South Eastern Elevation As Existing
1:100

- MATERIALS KEY**
1. Slate roof
 2. Terracotta ridge tiles
 3. Painted cast iron rainwater goods
 4. Red brickwork
 5. Painted timber windows
 6. Painted timber doors



Figured dimensions and levels to be used.
Any inaccuracies must be notified to the
architect.
Detail drawings and large scale drawings
take precedence over smaller drawings.

Rev: A Misabeled Elevation corrected.

art 01.11.19

Rev: -

Rev:

Rev:

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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Contract: Redrow Homes
Caerleon Campus Redevelopment

Title: Listed Building Outbuilding Conversion - Elevations (Sheet 1 of 2)

Drawing No. 18137(05) 1241
Rev. A

Scale: As Stated @ A3
Date: 16/10/19
Drawn: art
Checked: -



North Western Elevation As Existing
1:100



North Eastern Elevation As Existing
1:100

- MATERIALS KEY**
1. Slate roof
 2. Terracotta ridge tiles
 3. Painted cast iron rainwater goods
 4. Red brickwork
 5. Painted timber windows
 6. Painted timber doors



Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

Rev:

-

Rev:

-

Rev:

-

Rev:

-

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

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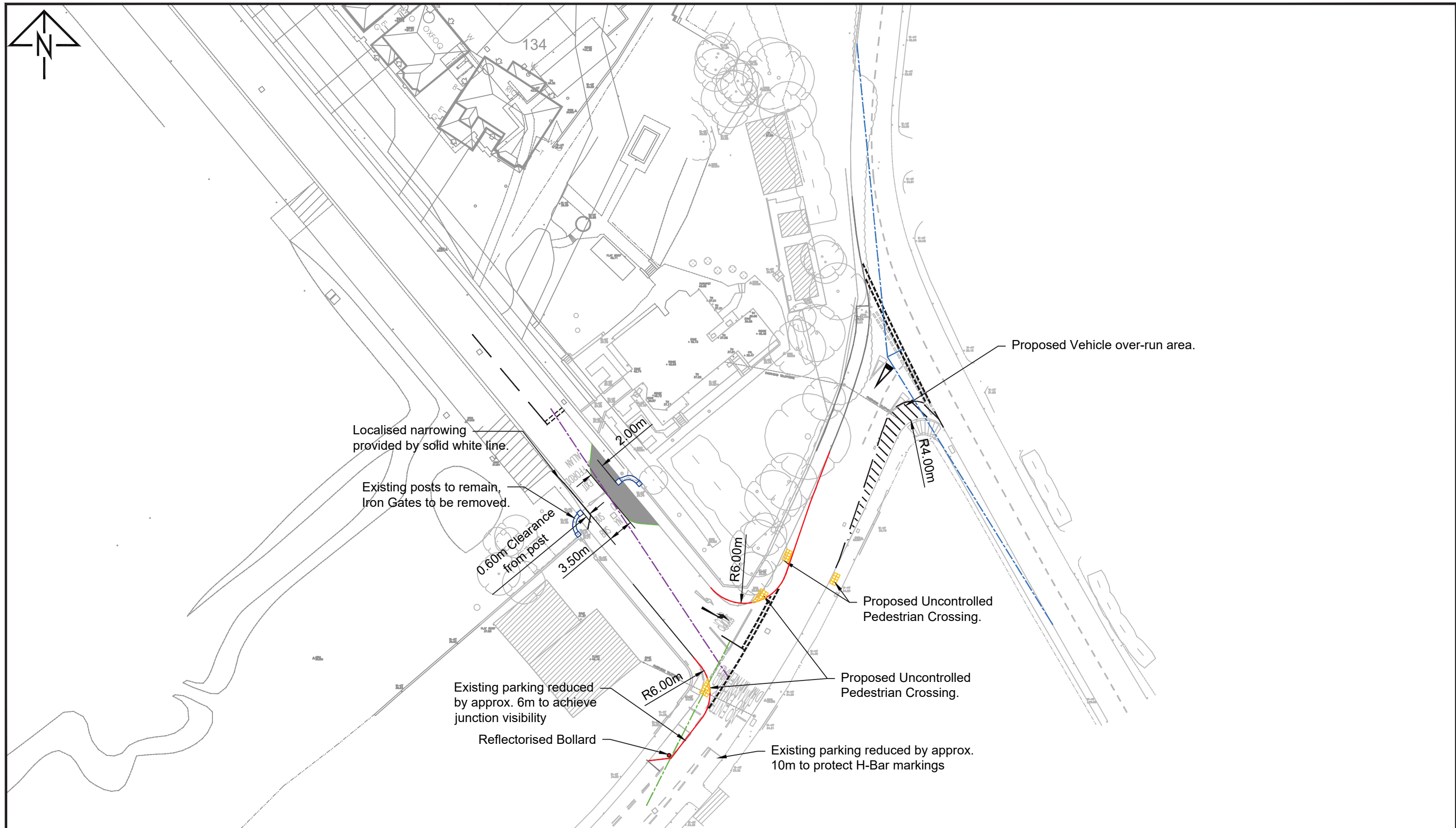
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Contract: Redrow Homes
Caerleon Campus Redevelopment

Title: Listed Building Outbuilding Conversion - Elevations (Sheet 2 of 2)

Drawing No. Rev.
18137(05) 1242 -

Scale: As Stated @ A3
Date: 16/10/19
Drawn: art
Checked: -

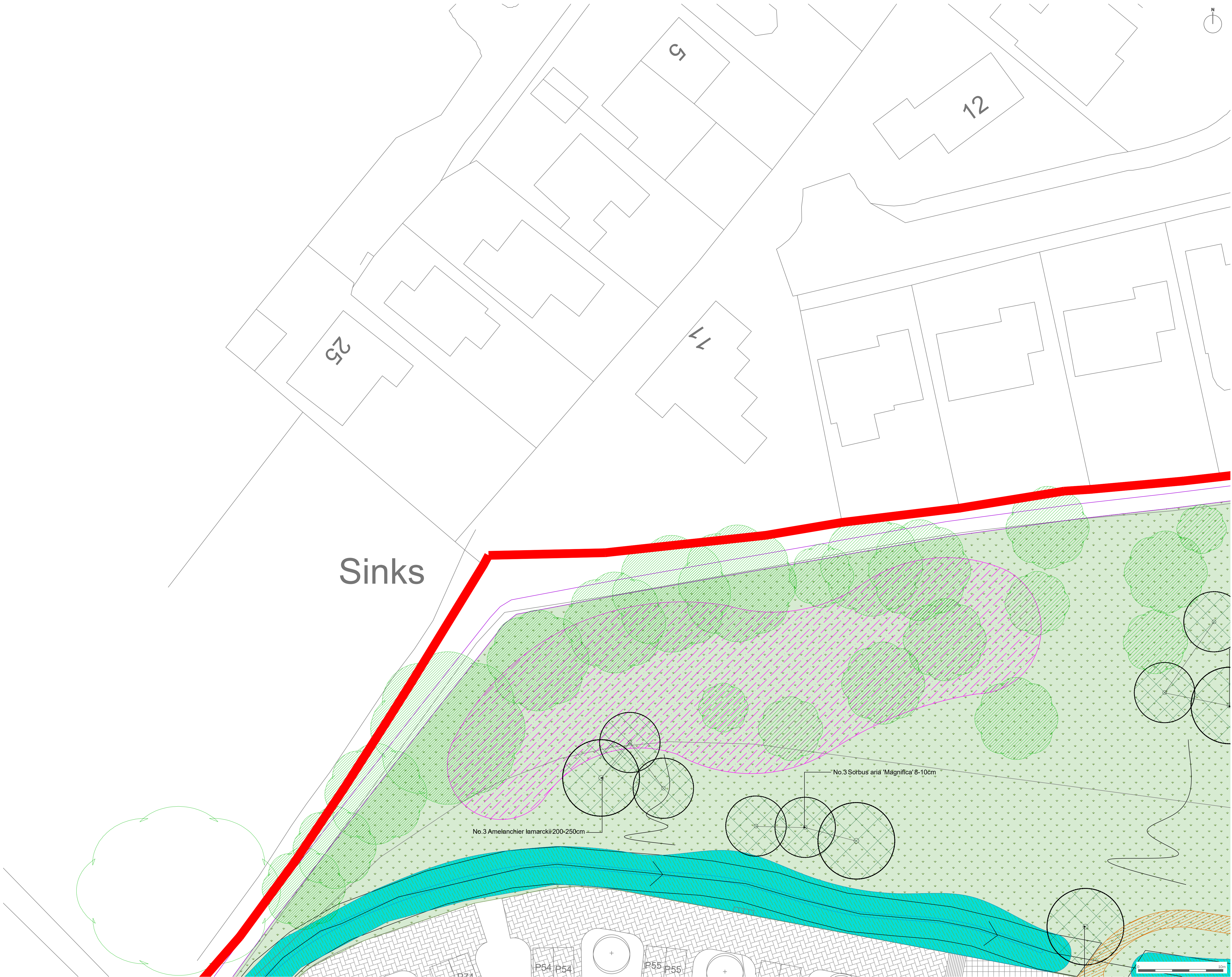


REV.	DETAILS	DRAWN	CHECKED	DATE	Notes:	Caerleon Campus		Redrow	
A	Updated following receipt of additional topographical survey	LT	CP	25.07.19	1. This is not a construction drawing and is intended for illustrative purposes only. 2. White lining is indicative only. Key: ----- 2.4m x 25m Visibility Splay ----- 2.4m x 43m Visibility Splay ----- Forward Visibility	Site Plan General Arrangement			
						DRAWN: KR	CHECKED: CP	DATE: 12.06.19	SCALES: 1:500 at A3
						DRAWING NUMBER: 184326A_A01		REVISION: A	



- For proposed hard surface refer to drawing edp5601_d029
and for proposed LEAP refer to drawing edp5601_d029

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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d021
and for proposed LEAP refer to drawing edp5601_d029

notes

revisions			
rev	by	date	detail

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Drawings and specification within the package.
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purpose of issue

PLANNING

client

Redrow Homes (South Wales) Ltd

project title

Caerleon University Campus

drawing title

Detailed Soft Landscape Plan

date

28 NOVEMBER 2019

drawn by

SR

drawing number

edp5601_d025b

checked

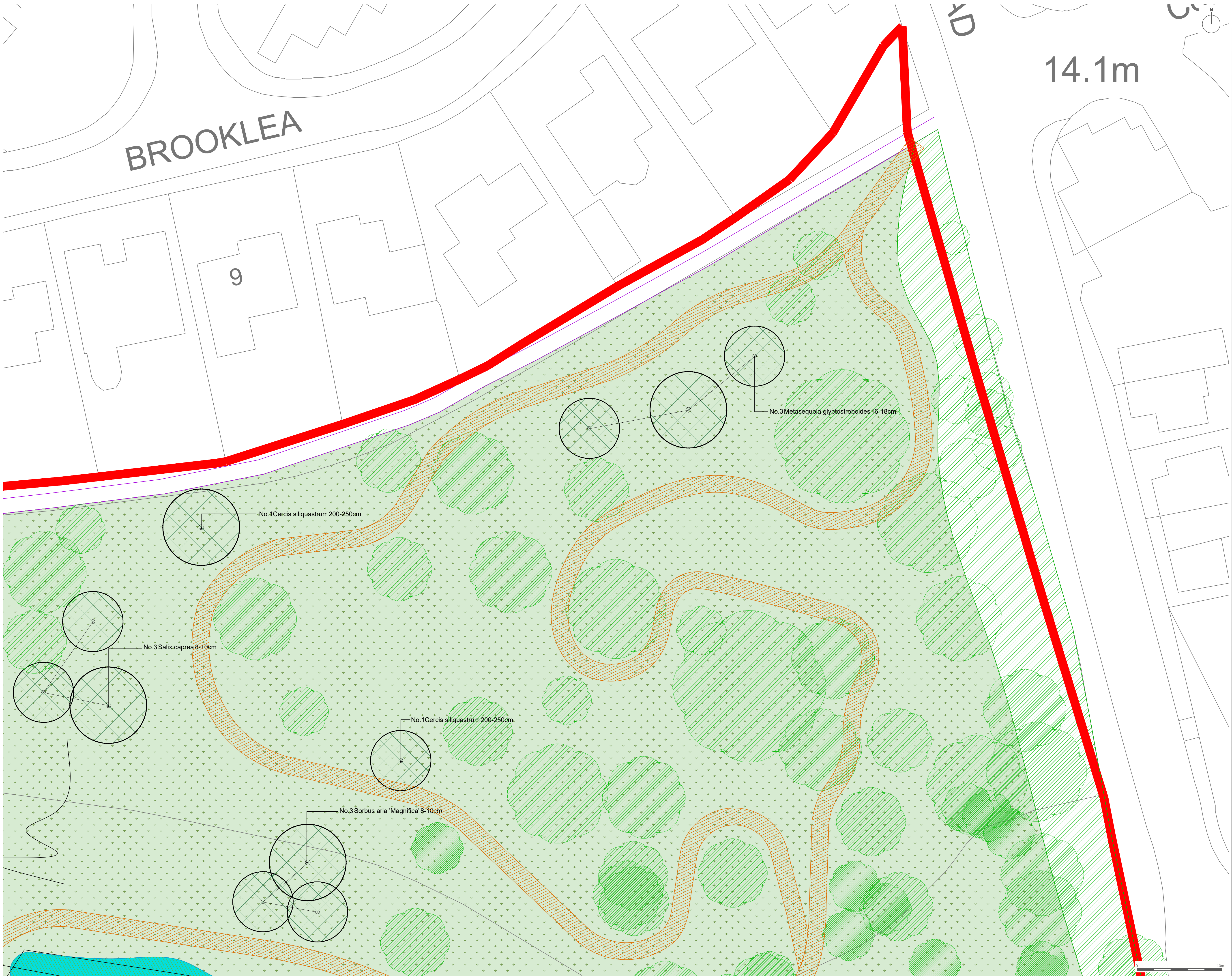
DR

scale

1:200 @ A1

QA

RB



Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d02i
and for proposed LEAP refer to drawing edp5601_d029

notes

revisions

rev	by	date	detail

purpose of issue

PLANNING

client

Redrow Homes (South Wales) Ltd

project title

Caerleon University Campus

drawing title

Detailed Soft Landscape Plan

date

28 NOVEMBER 2019

drawn by

SR

drawing number

edp5601_d025b

checked

DR

scale

1:200 @ A1

QA

RB

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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d02f and for proposed LEAP refer to drawing edp5601_d029

notes

revisions

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purpose of issue **PLANNING**

client
Redrow Homes (South Wales) Ltd

project title
Caerleon University Campus

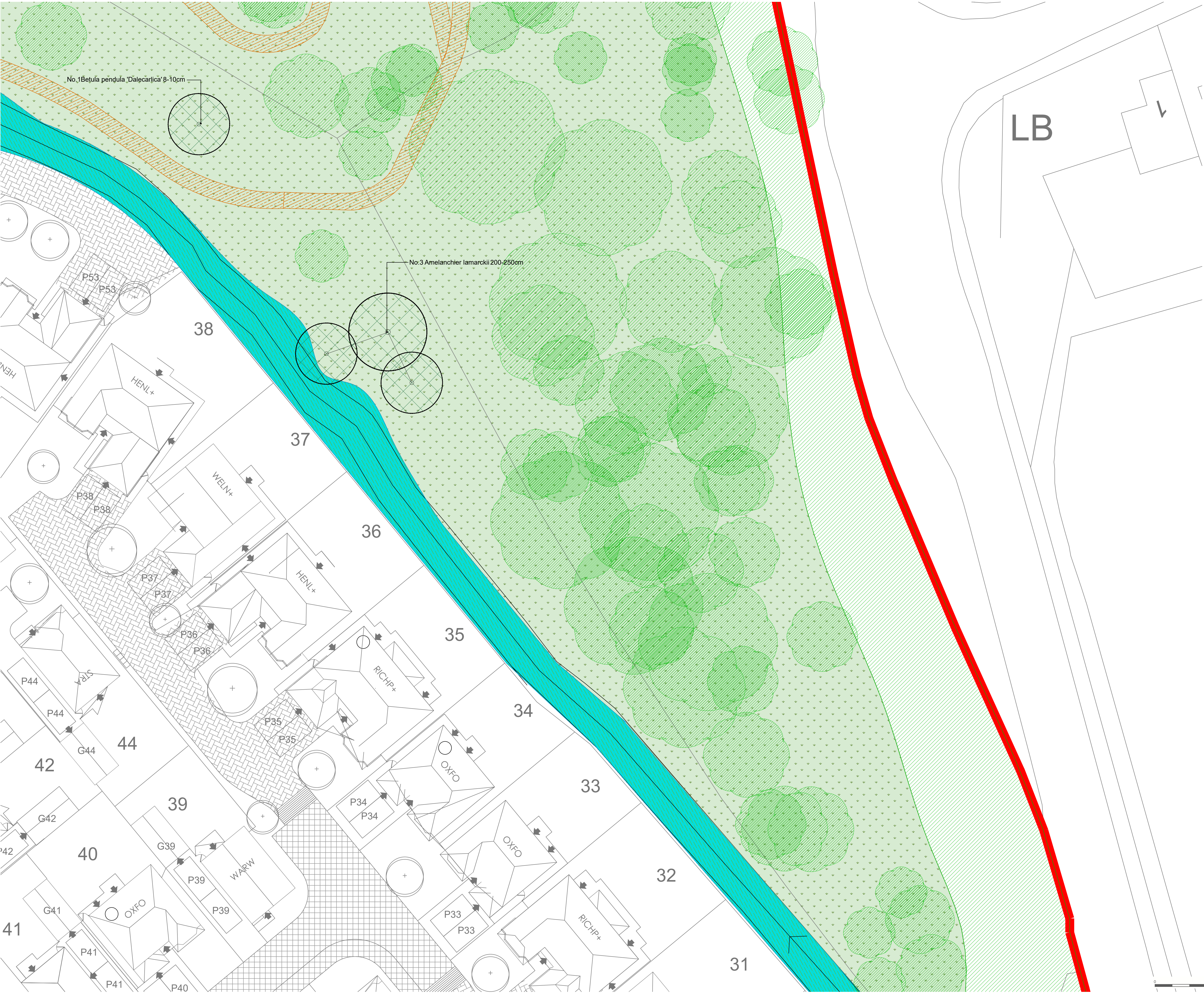
drawing title
Detailed Soft Landscape Plan

date **28 NOVEMBER 2019** drawn by **SR**
drawing number **edp5601_d025b** checked **DR**
scale **1:200 @ A1** QA **RB**

Sheet 5 of 19

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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d02f and for proposed LEAP refer to drawing edp5601_d029

notes

revisions			
rev	by	date	detail

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purpose of issue **PLANNING**

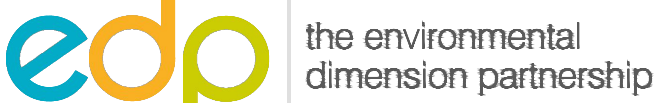
client
Redrow Homes (South Wales) Ltd

project title
Caerleon University Campus

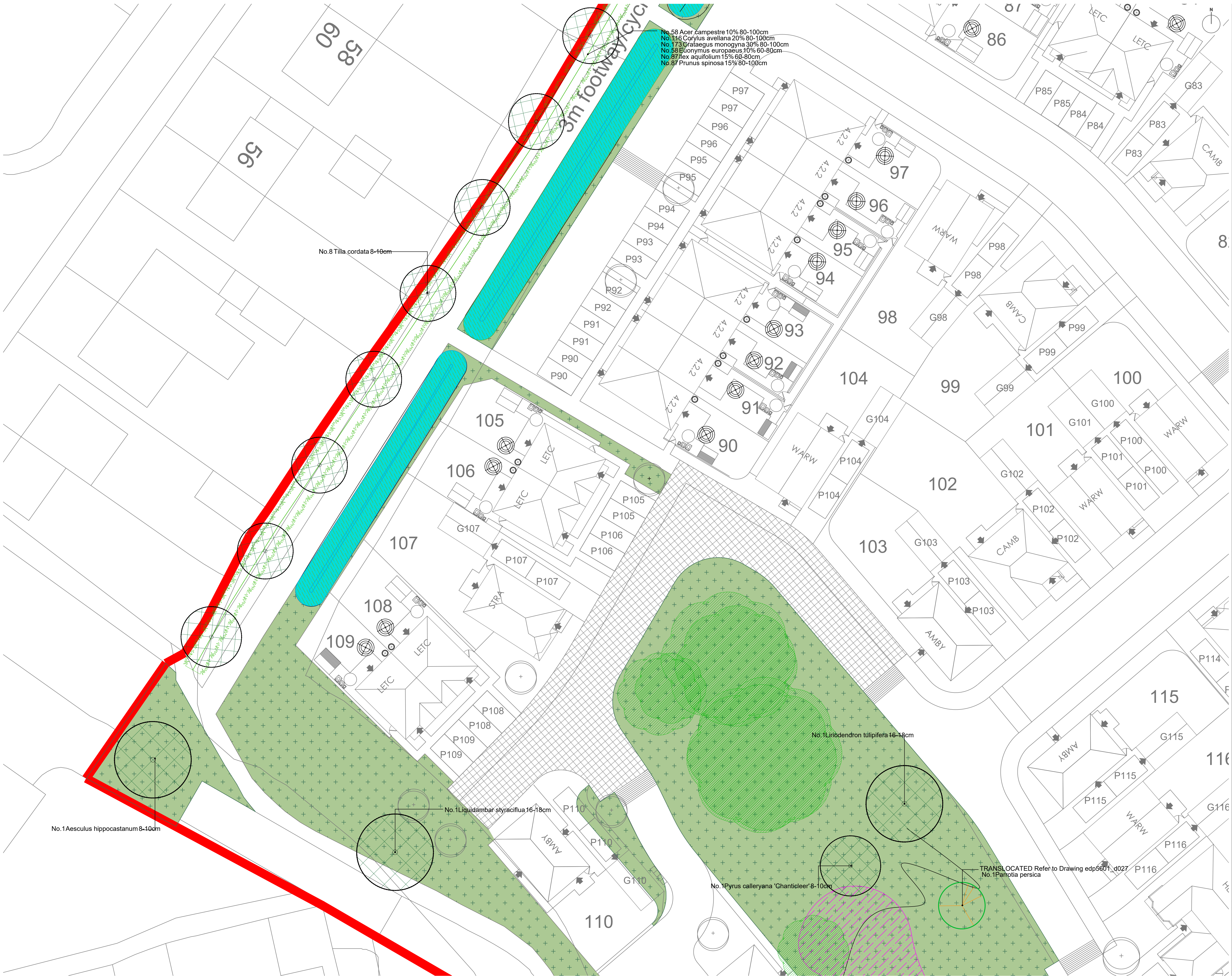
drawing title
Detailed Soft Landscape Plan

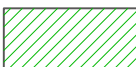
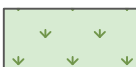
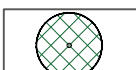
date	28 NOVEMBER 2019	drawn by	SR
drawing number	edp5601_d025b	checked	DR
scale	1:200 @ A1	QA	RB

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- | | |
|---|--|
|  | Site Boundary |
|  | Existing Vegetation to be Retained |
|  | Retained Existing Grass |
|  | Proposed Trees |
|  | Proposed Translocated Trees |
|  | Proposed Amenity Grass
<i>Turf or Seed (EG22 - Strong Lawn Grass Mixture)</i> |
|  | Proposed Amenity Grass
Maintained to 100mm length
<i>Turf or Seed (EG22 - Strong Lawn Grass Mixture)</i> |
|  | Proposed Species Rich Grass
<i>EG1 - General Purpose Meadow Grass Mixture</i> |
|  | Proposed Structural Planting |
|  | Proposed Swale/Pond
Details to be Confirmed |
|  | Wildflower Grassland and
Bulb Planting
<i>EM3 - Social General Purpose Meadow Mixture</i> |

For proposed hard surface refer to drawing edp5601_d01
and for proposed LEAP refer to drawing edp5601_d029

notes

revisions

rev	by	date	detail

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purpose of issue **PLANNING**

client

Redrow Homes (South Wales) Ltd

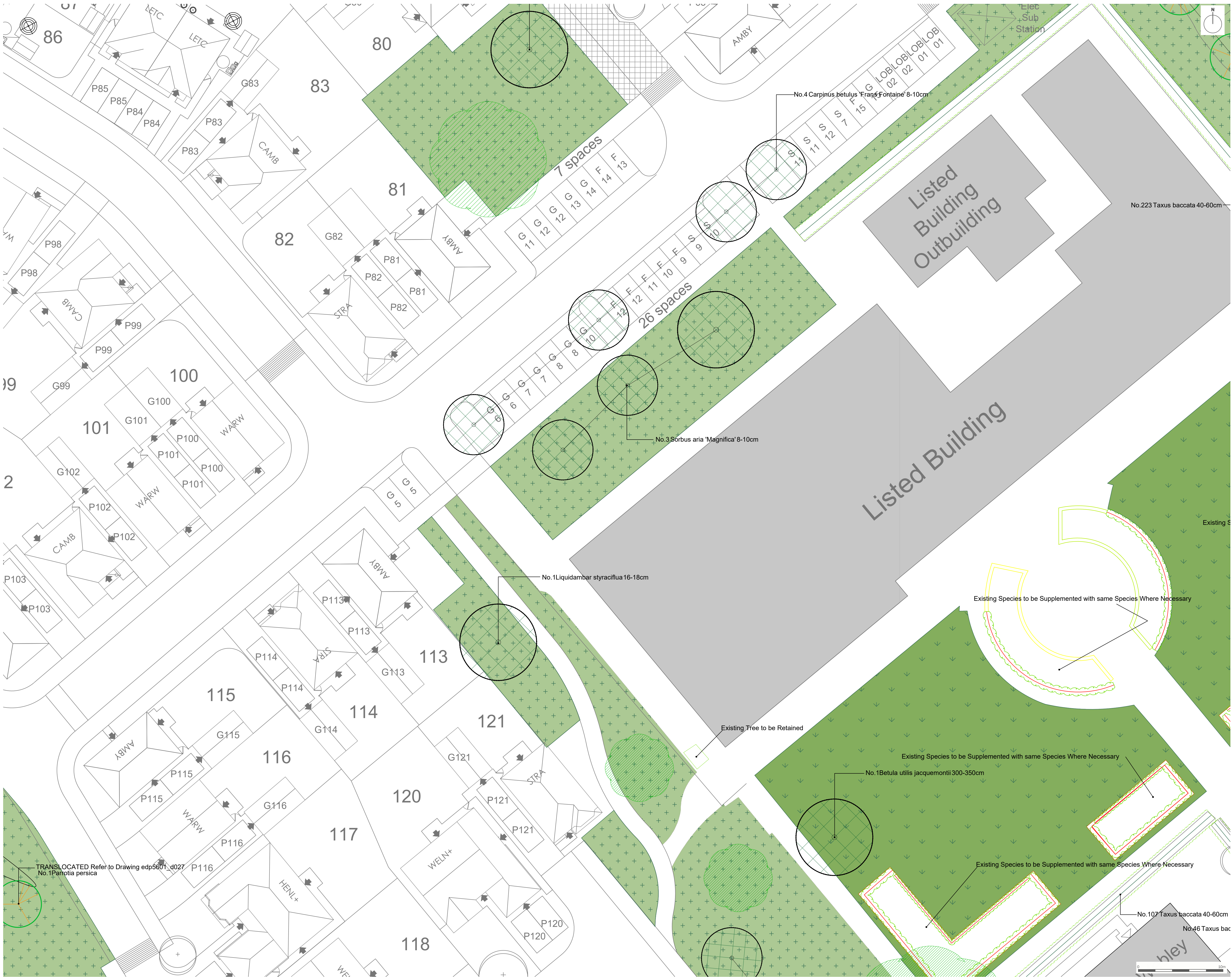
project title

Caerleon University Campus

drawing title
Detailed Soft Landscape Plan

date **28 NOVEMBER 2019** drawn by **SR**
drawing number **edp5601_d025b** checked **DR**
scale **1:200 @ A1** QA **BR**





Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d021
and for proposed LEAP refer to drawing edp5601_d029

notes

rev	by	date	detail

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purpose of issue

PLANNING

client

Redrow Homes (South Wales) Ltd

project title

Caerleon University Campus

drawing title

Detailed Soft Landscape Plan

date

28 NOVEMBER 2019

drawn by

SR

drawing number

edp5601_d025b

checked

DR

scale

1:200 @ A1

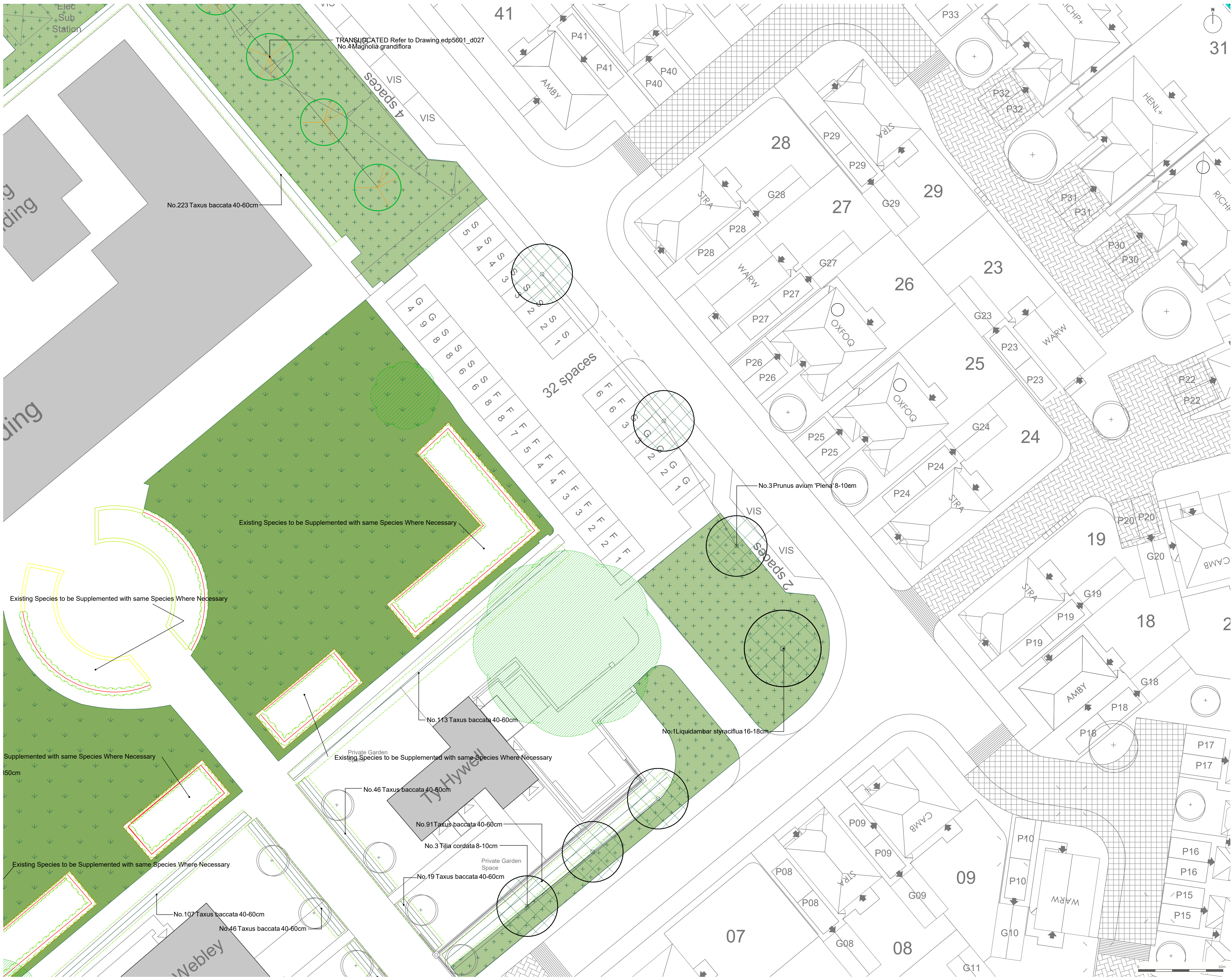
QA

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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

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EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d021
and for proposed LEAP refer to drawing edp5601_d029

notes

revisions

rev	by	date	detail

purpose of issue

PLANNING

client

Redrow Homes (South Wales) Ltd

project title

Caerleon University Campus

drawing title

Detailed Soft Landscape Plan

date

28 NOVEMBER 2019

checked

SR

drawing number

edp5601_d025b

checked

DR

scale

1:200 @ A1

QA

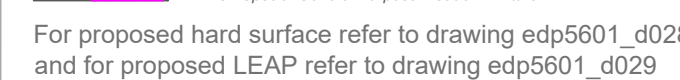
RB

Sheet 9 of 19

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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
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EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d021 and for proposed LEAP refer to drawing edp5601_d029

notes

rev	by	date	detail

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project title
Caerleon University Campus

drawing title
Detailed Soft Landscape Plan

Sheet 11 of 19

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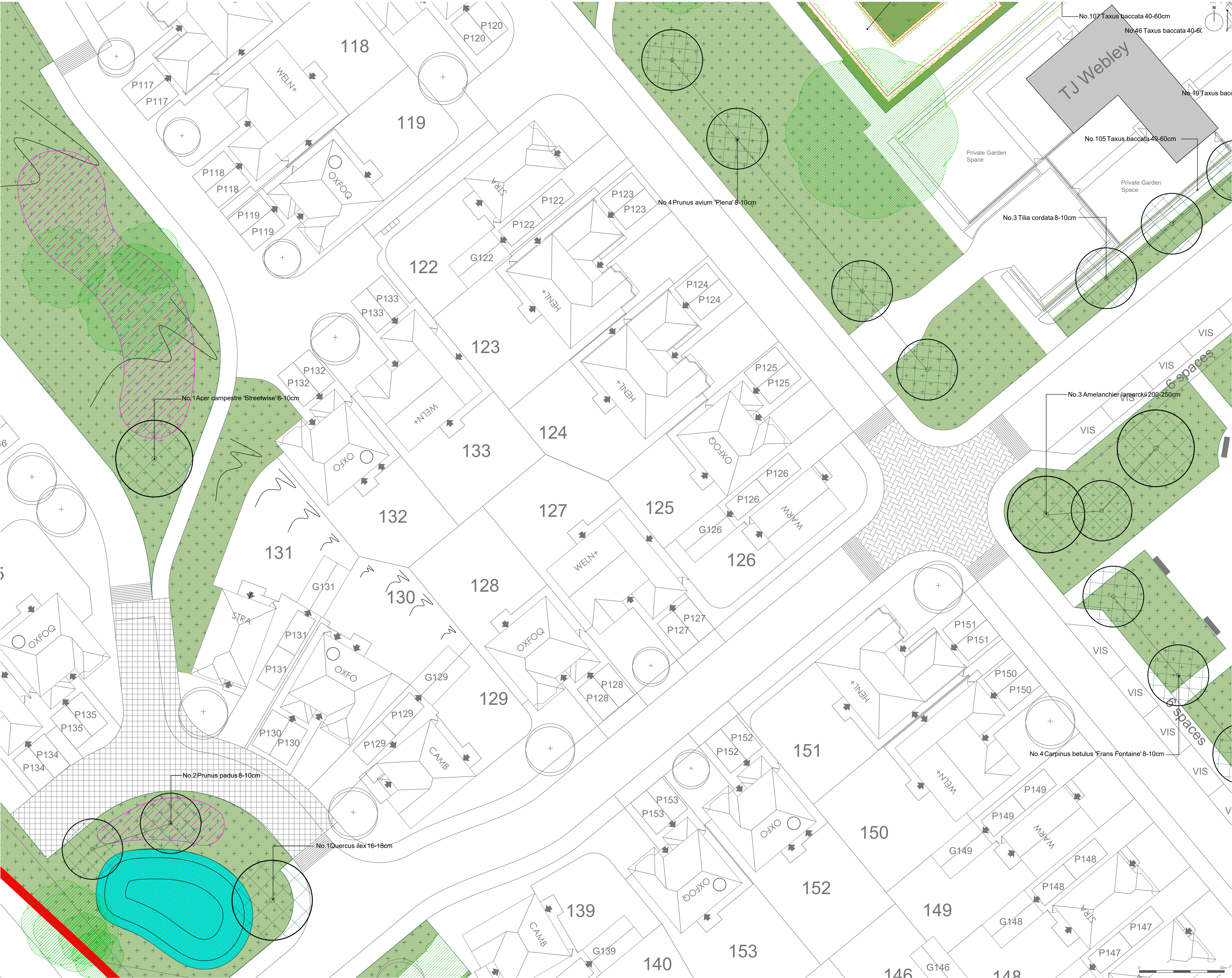
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Site Boundary

Existing Vegetation to be Retained

Retained Existing Grass

Proposed Trees

Proposed Translocated Trees

Proposed Amenity Grass
Turf or Seed (EG22 - Strong Lawn Grass Mixture)

Proposed Amenity Grass
Maintained to 100mm length
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Proposed Species Rich Grass
EG1 - General Purpose Meadow Grass Mixture

Proposed Structural Planting

Proposed Swale/Pond
Details to be Confirmed

Wildflower Grassland and
Bulb Planting
EM3 - Special General Purpose Meadow Mixture

For proposed hard surface refer to drawing edp5601_d021 and for proposed LEAP refer to drawing edp5601_d029

notes

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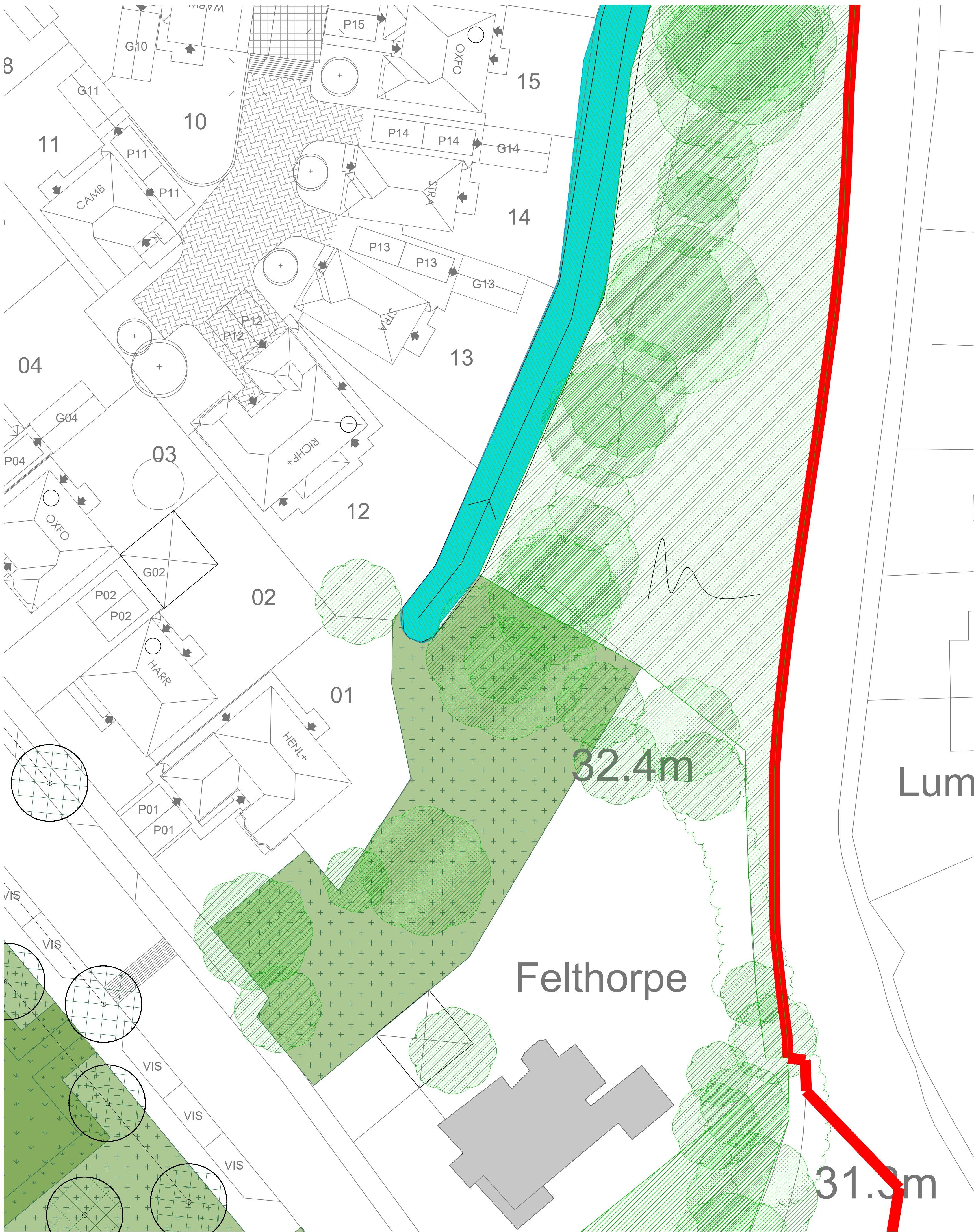
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N

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and for proposed LEAP refer to drawing edp5601_d029

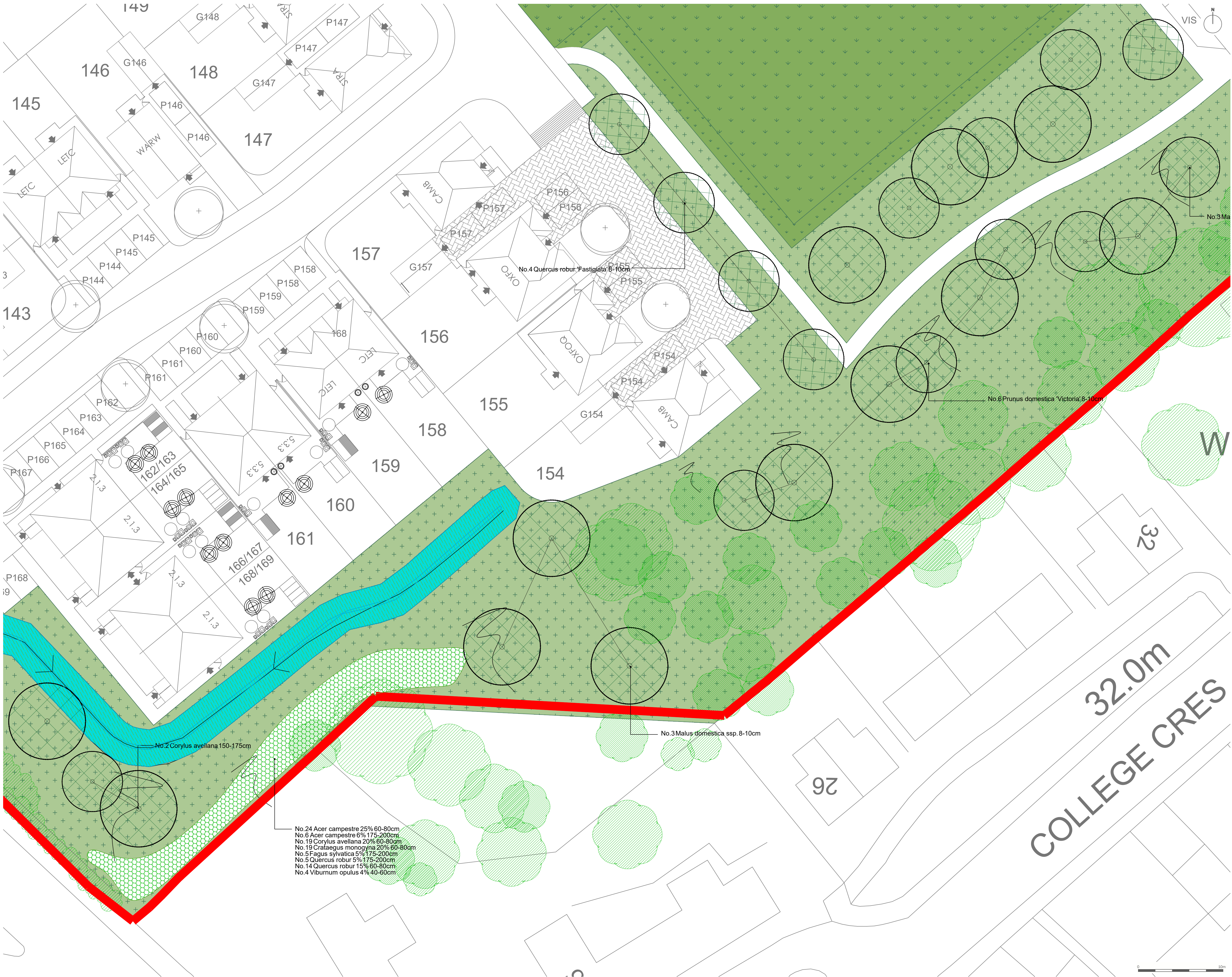
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1

CDM

A risk assessment has been carried out on this design. Residual risks following this process are listed below. A copy of the full Design Risk Register is also available on request from EDP.

For further guidance, refer to HSE Construction (Design and Management) Regulations 2015, notes

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drawing title
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Sheet 16 of 19

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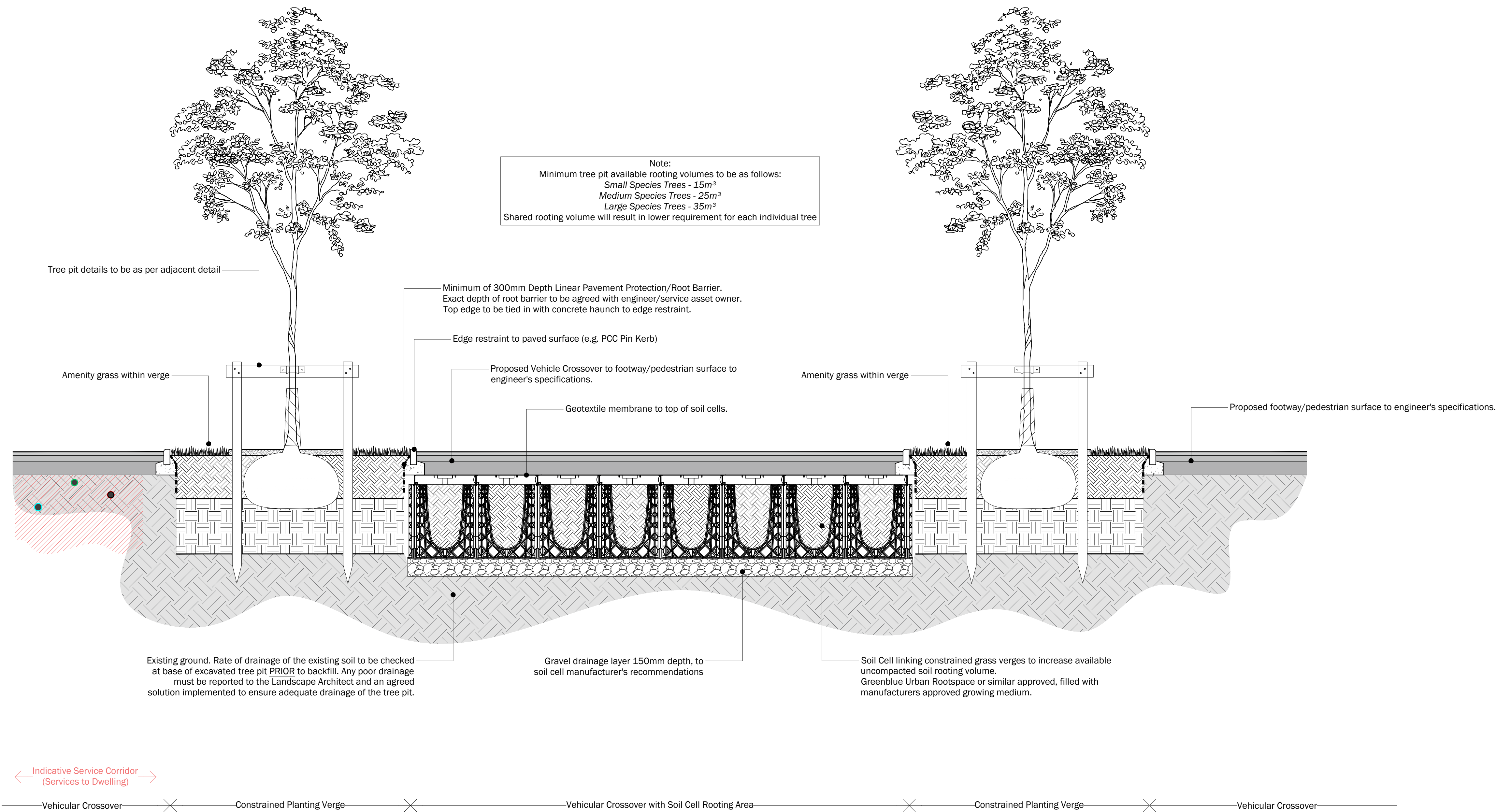
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TREE PIT DETAIL
TREE IN CONSTRAINED GRASS VERGE, ADJACENT SERVICES
ABOVE GROUND STAKING
1:20 @ A1

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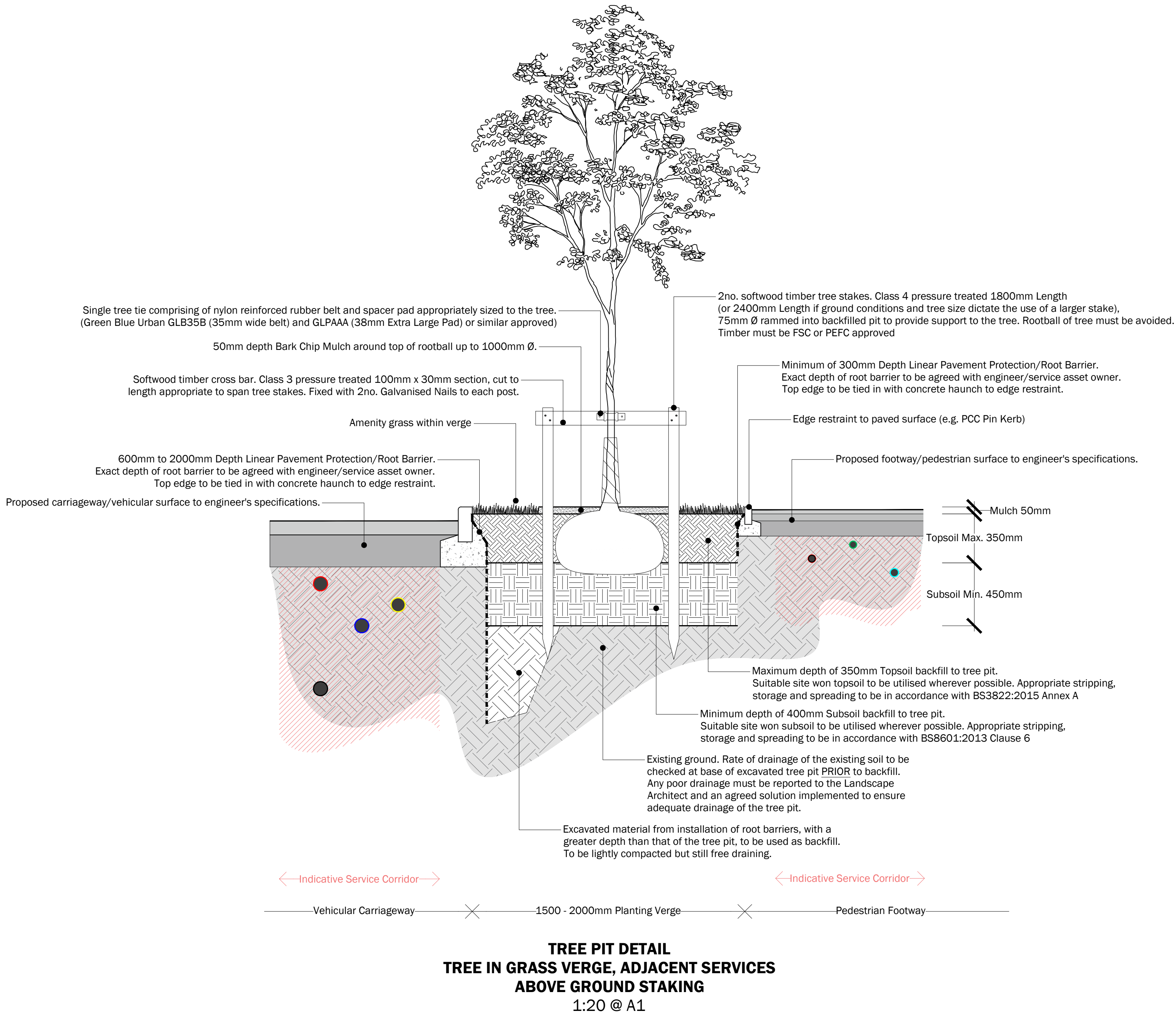
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Planting Schedule

Trees						
Number	Common Name	Species	Girth	Height	Specification	Density
12	Common Maple	Acer campestre		175-200cm	B;2x:Feather :5 brks	1.5Ctr
49	Common Maple	Acer campestre		60-80cm	BR :1+1 :Transplant	1.5Ctr
2	Field Maple 'Streetwise'	Acer campestre 'Streetwise'	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
1	Common Horse Chestnut	Aesculus hippocastanum	8-10cm		RB :Clear Stem 150-175	Counted
12	Juneberry	Amelanchier lamarckii		200-250cm	RB :Multi-Stemmed :3/5 brks	Counted
1	Swedish Birch	Betula pendula 'Dalecarlica'	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
1	White-barked Himalayan Birch	Betula utilis jacquemontii		300-350cm	RB :Multi-Stemmed :3/5 brks	Counted
11	Hornbeam 'Frans Fontaine'	Carpinus betulus 'Frans Fontaine'	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
8	Sweet Chestnut	Castanea sativa	8-10cm		RB :Clear Stem 150-175 :3/5 brks	Counted
2	Judas tree	Cercis siliquastrum		200-250cm	RB :Multi-Stemmed :3/5 brks	Counted
39	Common Hawthorn	Crataegus monogyna		60-80cm	BR :Transplant	1.5Ctr
10	Common Beech	Fagus sylvatica		175-200cm	B;2x:Feather :5 brks	1.5Ctr
5	American sweetgum	Liquidambar styraciflua	16-18cm		RB :Clear Stem 175-200 :3/5 brks	Counted
1	Tulip tree	Liriodendron tulipifera	16-18cm		RB :Clear Stem 175-200 :3/5 brks	Counted
4	Southern magnolia	Magnolia grandiflora				Counted
6	Apple	Malus domestica ssp.	8-10cm		RB :3 brks :Bushy	Counted
3	Dawn Redwood	Metasequoia glyptostroboides	16-18cm		RB :Clear Stem 175-200 :3/5 brks	Counted
1		Parrotia persica				Counted
7	Double Gean	Prunus avium 'Plena'	8-10cm			Counted
6	Plum 'Victoria'	Prunus domestica 'Victoria'	8-10cm		RB :3 brks :Bushy	Counted
2	Bird Cherry	Prunus padus	8-10cm			Counted
1	Chanticleer Pear	Pyrus calleryana 'Chanticleer'	8-10cm			Counted
1	Holly oak	Quercus ilex	16-18cm		RB :Clear Stem 175-200 :3/5 brks	Counted
10	Common Oak	Quercus robur		175-200cm	BR :2x :Feather :5 brks	1.5Ctr
29	Common Oak	Quercus robur		60-80cm	BR :1+1 :Transplant	1.5Ctr
4	Cypress Oak	Quercus robur 'Fastigiata'	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
3	Goat Willow	Salix caprea	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
9		Sorbus aria 'Magnifica'	8-10cm		RB :Clear Stem 175-200 :3 brks	Counted
5	European mountain ash	Sorbus aucuparia	8-10cm			Counted
23	Littleleaf linden	Tilia cordata	8-10cm		RB :Clear Stem 150-175 :3/5 brks	Counted
Total :268						

Shrubs

Number	Common Name	Species	Height	Pot Size	Specification	Density
2	Common Hazel	Corylus avellana	150-175cm		RB :Bushy :3/5 brks	Counted
39	Common Hazel	Corylus avellana	60-80cm		BR; Transplant	1.5Ctr
8	Guelder Rose	Viburnum opulus	40-60cm		BR; Transplant	1.5Ctr

Total :49

Hedges

Number	Common Name	Species	Height	Specification	Density
58	Common Maple	Acer campestre	80-100cm	1+1: Transplant - seed raised: B	0.5Ctr Double Staggered at 0.5m offset
116	Common Hazel	Corylus avellana	80-100cm	1+2: Transplant - seed raised: Branched: 4 brks: B	0.5Ctr Double Staggered at 0.5m offset
173	Common Hawthorn	Crataegus monogyna	80-100cm	1+2: Transplant - seed raised: B	0.5Ctr Double Staggered at 0.5m offset
58	Common Spindle Tree	Euonymus europaeus	60-80cm	1+2: Transplant - seed raised: Branched: 5 brks: B	0.5Ctr Double Staggered at 0.5m offset
87	Common Holly	Ilex aquifolium	60-80cm	Leader with Laterals: C	0.5Ctr Double Staggered at 0.5m offset
87	Blackthorn	Prunus spinosa	80-100cm	1+2: Transplant - seed raised: Branched: 3 brks: B	0.5Ctr Double Staggered at 0.5m offset
769	Common Yew	Taxus baccata	40-60cm	RB/RW:Transplant:1+1	0.75Ctr Double Staggered at 0.5m offset

Total :1348

notes

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Construction Environmental Management Plan Caerleon Campus

November 2019



CEMP for a Proposed Development at:

Caerleon Campus

Issue and Revision Record

Rev	Date	Originator	Checker	Approver	Description
A	Nov 19	SE	TS	TS	First Issue

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TABLES

- 7.1 Noise Mitigation Measures

APPENDICES

- A Construction Phasing Plan
- B Construction Management Plan
- C Construction Traffic Routes
- D Construction Vehicles

1. INTRODUCTION

Background

- 1.1 This Construction Environmental Management Plan (CEMP) has been prepared in support of a full application for 218 residential dwellings comprising 147 private dwellings, 22 affordable dwellings and 49 conversions within existing buildings at the former USW Caerleon Campus, Newport.
- 1.2 This CEMP includes the following:
- General Construction Site Information;
 - Construction Programme;
 - Construction Traffic Management Plan;
 - Storage & Compound Details;
 - Fencing, Security & Site Hoarding Details;
 - Noise & Vibration Management Plan;
 - Dust, Emissions & Odours Management Plan;
 - Cementitious Materials Controls;
 - Lighting Management Plan;
 - Contaminated Material Plan;
 - Construction Drainage Plan;
 - Green Infrastructure Plan;
 - Site Waste Management Plan; and
 - Contacts & Complaints.
- 1.3 The overall objective of this CEMP is to ensure that, throughout the construction period, any disruption is kept to a minimum.

2. GENERAL CONSTRUCTION SITE INFORMATION

Health & Safety

- 2.1 Redrow Homes takes the task of building new homes and the resulting obligations for the welfare of staff, contractors, occupiers and local residents very seriously.
- 2.2 We have developed a comprehensive suite of General Environmental Standards (GSTAN) and Process Environmental Standards (PSTAN) which provide guidance on mandatory legislation and best site practice to support construction in the planning and build phases. All activities on site must comply with the Redrow Environmental Standards.
- 2.3 The Site Manager will be responsible for the implementation of the GSTANs, PSTANs and CEMP and will be overseen by the Area Construction Manager. They will be communicated to all site personnel including contractors, sub-contractors and visitors during the Health & Safety induction when first entering the development. The induction will inform them of the requirement to sign in and sign out daily and informs the person(s) of the works which are being carried out on a day to day basis on the development, and all inductees will be appropriately trained and checked to ensure that all relevant HSE requirements have been complied with. This includes checks on the validity of CSCS cards, driving licenses, plant operator's licenses, training certificates, and the provision of correct PPE equipment.
- 2.4 Periodic tool box talks will also be undertaken that highlight the need for good working practices to prevent pollution and harm to the environment during construction and any health and safety issues that may arise on site.
- 2.5 Redrow Homes' own internal health & safety advisers will also carry out periodic site inspections and produce written reports of their findings.
- 2.6 All sub-contractors must submit risk assessments and method statements for their individual activities, plus any licenses or permits to work required for daily activities.
- 2.7 All statutory inspections are recorded on the relevant forms, with the standard F10 HSE notification of site start already submitted to the relevant authorities as required under current CDM procedures.
- 2.8 A minimum of one fully trained First Aider will be available at the times and First Aid kits will be available on site. Directions to the nearest A&E Hospital department will be displayed in both the site office and welfare facilities. All trades will be required to supply RAMS which will be checked by our health and safety consultant prior to them commencing work on site.

Emergency Procedures

- 2.9 At the project planning stage, it is essential to think through the possible incidents and emergencies which could arise during construction works and plan accordingly via risk assessments and an emergency response plan.
- 2.10 The emergency response plan will be communicated to all site staff at site induction and will include pollution incidents such as spillages, failure of temporary works, bank collapse, vandalism and fire or extreme weather events such as heavy rainfall, flooding, severe frost and snow.

2.11 Site staff responsible for taking action in emergencies must be aware of their responsibilities and trained to use the necessary equipment such as spill control equipment and shut-off valves.

2.12 In an emergency, Natural Resources Wales can also be contacted on 0800 80 70 60.

Considerate Constructors Scheme

2.13 The site will be registered with the Considerate Constructors Scheme (CCS). Contact information will be placed on display boards at the site entrance along with CCS banners. The site will adhere to conform to the CCS compliance scoring scheme.

3. CONSTRUCTION PROGRAMME

Site Stage

3.1 The project has a number of distinct stages as follows:

- Site Set Up & Enabling Works
 - Erect secure perimeter fence & any tree & hedgerow protective fence;
 - Set up site compound;
 - Site strip/clearance work;
- Site Start
 - Form site access, install drains & services & construct main spine road to base course;
 - Build-out site;
- Site Close
 - Removal of compound, perimeter fence & any tree & hedgerow protective fence.

3.2 A Construction Phasing Plan is included in Appendix A.

Duration & Timing of Works

3.3 The project has a duration of approximately 6 years from commencement of build.

3.4 The core working hours in keeping with accepted industry standards will be 0800 to 1800 Monday to Friday and 0800-1300 on Saturdays. There will also be no Sunday or Bank Holiday working for plant and machinery.

3.5 However, in order to maximise productivity within the core working hours, start-up and close-down periods of up to an hour before and after core working hours may be used for activities such as arrival of workforce and staff; deliveries and unloading; movement to place of work; maintenance and checking of plant and machinery; general refuelling; site inspections and safety checks prior to commencing work; site meetings; and general site clean up and departure.

3.6 It will not include operation of plant or machinery likely to cause a disturbance. These periods will not be considered an extension of core working hours.

4. CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Site Operation

- 4.1 All construction traffic entering and leaving the site will be restricted to normal working hours which will be 0800 to 1800 on weekdays and 0800 to 1300 on Saturdays (there will be no working on Sundays or Bank Holidays except for internal trades). There will be no public access to the construction area.
- 4.2 However, in order to maximise productivity within the core working hours, start-up and close-down periods of up to an hour before and after core working hours may be used for activities such as arrival of workforce and staff; deliveries and unloading; movement to place of work; maintenance and checking of plant and machinery; general refuelling; site inspections and safety checks prior to commencing work; site meetings; and general site clean up and departure.
- 4.3 It will not include operation of plant or machinery likely to cause a disturbance. These periods will not be considered an extension of core working hours.
- 4.4 Speed limit signs and warning signs will be erected on site restricting the site speed limit as per Redrow site rules due to the large amount of activity and heavy machinery likely to be present on site at any one time.
- 4.5 A Construction Management Plan is included in Appendix B.

Deliveries

- 4.6 Vehicles making deliveries to the site will be carefully planned by the site manager to avoid peak traffic periods such as the start and end of the school day wherever possible and the 'backing up' of lorries through the effective co-ordination and storage of materials to minimise unnecessary deliveries.
- 4.7 At no point will offloading take place on the existing highway network.
- 4.8 Upon arrival at site, the site manager will arrange for a banksman to guide the delivery safely on to site where necessary and 'Caution Construction Vehicles' signs will be erected on the approach roads to the site entrance.
- 4.9 The loading area will be clear of vehicles and materials before the next delivery arrives, engines will not be kept idling and drivers will stay with their vehicles at all times.
- 4.10 Vehicles will be able to turn on the development minimising the necessity to reverse out onto the highway and will travel via designated routes along (via junction 25 eastbound and via junction 26 westbound to Caerleon Road and then through the Caerleon one way system as appropriate to/from Lodge Road). These routes are shown on the Construction Traffic Routes in Appendix C.
- 4.11 Vehicles collecting waste material skips from site will also be carefully planned and will be covered with sheeting or netting prior to leaving the site.

Construction Vehicles

- 4.12 Where practical, construction traffic will be separated from resident and visitor traffic and site construction vehicles will only be operated by those people who have received the relevant training, have produced a copy of their certificates of competency and are authorised to use the vehicle/plant. They will also be inspected, tested and serviced to ensure that they comply with relevant regulations and a regular maintenance schedule will be followed to ensure that they are running correctly. Where construction vehicles are operating or being used on roads or other areas where the public have access, roof beacons and headlights must be used.
- 4.13 Where construction vehicles are operating or being used on roads or other areas where the public have access, roof beacons and headlights must be used.
- 4.14 A telehandler will be used to transport superstructure materials around the site and a speed limit will be strictly enforced as per Redrow site rules.
- 4.15 Where specific hazards may produce additional risks to traffic movements, a physical barrier will be put in place.
- 4.16 A number of different vehicles will be used during construction as illustrated in Appendix D.

Parking

- 4.17 During construction, site operative parking will be located within designated areas.

Sustainable Transport

- 4.18 In addition, to promote more sustainable modes of transport, car/van sharing will be encouraged to and from site.

Pedestrians

- 4.19 Pedestrian traffic will be separated from plant and vehicles at the site entrance and dedicated segregated pedestrian walkways with appropriate signage will be provided across the part of the site that is currently under construction for all site operatives and visitors.
- 4.20 Footpaths will also be constructed at the earliest opportunity to provide clear walkways around the development for use during and post construction.

Wheel Washing and Road Cleaning

- 4.21 The construction sequence of the site will be phased to ensure that the roads are constructed as early as practicable in order to provide a clean, solid running surface throughout the development that can be easily maintained.

- 4.22 A jet wash will be positioned at the site entrance if necessary and a road sweeper will also be used weekly where necessary to clear off any debris, dirt and nuisance material inadvertently tracked out of the site area onto local roads. These vehicles can rapidly attend site and commence cleaning very quickly and so will be available to increase frequency if conditions require.
- 4.23 In addition, a road brush will be permanently on site during periods of muck-shifting and will be specifically tasked with maintaining the cleanliness of both the local public highway and estate roads.

Site Occupations

- 4.24 Prior to occupation, residents will be informed of the possible dangers of living on a construction site and any construction traffic needing to gain access through an area where dwellings are occupied will adhere to the speed limit and respect the residents.

5. STORAGE & COMPOUND DETAILS

Compound

- 5.1 The construction site will be fully secured and managed from the site office within the site compound.

Materials Storage

- 5.2 General materials will be stored safely and securely in designated areas of the compound after careful consideration of the position of existing properties with material set-down points as required and forklifts utilised for material delivery, handling etc. where necessary.
- 5.3 Materials such as bricks, blocks, concrete rings, steels, timber and any similar materials that require stacking must be stacked on a good firm level base to prevent any unwanted movement of the materials.
- 5.4 Bricks and blocks must not be stored more than two packs high; this will reduce the risk of packs accidentally tipping. Only good sound pallets that are the correct size for the packs must be used. Space must be allowed for machines to move between the packs to prevent the machine displacing any part of the loads or packs. A stacking area must be provided away from public access and, if possible, be fenced off.
- 5.5 Concrete rings that are large in circumference and narrow in width must be laid flat so they cannot be moved or rolled by any person, especially children.
- 5.6 Timbers must be de-nailed and stacked in a manner so that they cannot be easily displaced. Packing should be used underneath the stack so that forks or slings can be used to reposition them at a later date.
- 5.7 Steel/reinforcement bars must be stacked in an area adjacent to the works to reduce the amount of handling and carrying. Timber packing must be used underneath steel; this will allow for forks and slings to be positioned for the next movement and help to prevent accidental slips of the materials.

Waste

- 5.8 Waste is to be removed from storage as it is produced. Incoming deliveries will be controlled to match production & available space. Any surplus materials will be returned to storage area(s) and not left around site. Restock surplus materials to be returned from site in good order.

Liquids & Fuels Storage

- 5.9 Liquids and fuels including diesel fuel will be stored in a double bunded tank in an impermeable bund with petrol stored in suitable containers. Locks and valves will be used to prevent spills, there will be a designated re-fuelling area with sanded drip catchment and, in the unlikely event of a spill, the relevant incident response procedure will be followed. Spillage kits and sand will also be available on site and additional grips and bunds will be formed as required.

- 5.10 There will be a weekly check of all containers, secondary containment systems, pipework and other ancillary equipment as well as annual inspections and services carried out by a qualified technician.

Plant

- 5.11 At the end of the day, mobile plant will be parked and made secure, the ignition key removed, the cab locked and any windows and covers closed.

6. FENCING, SECURITY & SITE HOARDING DETAILS

Fencing

- 6.1 Secure fencing will be erected around the site boundary and the part of the site currently under construction with access to the construction site restricted to normal working hours which will be 0800 to 1800 on weekdays and 0800 to 1300 on Saturdays (there will be no working on Sundays or Bank Holidays except for internal trades).
- 6.2 However, in order to maximise productivity within the core working hours, start-up and close-down periods of up to an hour before and after core working hours may be used for activities such as arrival of workforce and staff; deliveries and unloading; movement to place of work; maintenance and checking of plant and machinery; general refuelling; site inspections and safety checks prior to commencing work; site meetings; and general site clean up and departure.
- 6.3 It will not include operation of plant or machinery likely to cause a disturbance. These periods will not be considered an extension of core working hours.
- 6.4 Protective tree/hedgerow/watercourse fencing will also be erected where necessary, see Chapter 13 - Green Infrastructure Plan for more details.

Security

- 6.5 The fencing around the part of the site currently under construction will prevent any access from members of the public to the construction site and ensure that the occupied areas of the development are separated from the areas under construction with signs clearly defining the boundary of where the construction site begins.
- 6.6 The fencing will be checked regularly to ensure it is in sound condition and records kept.

Site Hoarding Details

- 6.7 If the site is registered with the Considerate Constructors Scheme (CCS), display boards and banners will be displayed at the site entrance.

7. NOISE & VIBRATION MANAGEMENT PLAN

Noise

- 7.1 The processes anticipated for the construction of the site do not present a significant continuous noise nuisance but there will be some low to medium level continuous noise nuisance during construction of the proposed development.
- 7.2 As a result, Redrow Homes will, as far as reasonably practicable, control and limit noise and vibration levels generated during construction so that affected properties and other sensitive receptors are protected from excessive noise and vibration levels associated with construction activities as summarised in Table 7.1 below.

Activity	Noise Potential	Mitigation Measures
Plant & Machinery	Medium	- Working hours to be observed. - All plant used on site will be maintained in good and efficient working order and electrically powered plant will be preferred, where practicable, to mechanically powered alternatives. It will be operated so that noise including reversing alarms and exhaust emissions are minimised, as far as reasonably practicable, through the use of acoustic enclosures & silencers; - Any plant with defective noise control equipment will not be operated until repaired. - Machines in intermittent use should be shut down or throttled down to a minimum during periods between work. - Bolts to removable covers to be kept tight to prevent rattling. - Hinged access panels to be closed in operation and rubber inserts fitted to prevent rattling. - Silos to be used instead of diesel mixers wherever possible.
Deliveries	Low	Deliveries will only be made during site operating hours, unless otherwise agreed with the Local Planning Authority.

Table 7.1: Noise Mitigation Measures

- 7.3 The Site Manager will plan activities with noise control in mind with plant being positioned with consideration to adjoining properties and liaison with local residents and businesses undertaken to ensure that they are kept informed of site activities by mail drop if necessary. He will also facilitate access to the site at all reasonable times for inspection and/or noise measurements by Local Authority Environmental Health Officers.
- 7.4 The noise emitted from fixed plant and equipment on the site will be in accordance with the manufacturer's instructions and meet the relevant British Standard as a minimum if necessary.
- 7.5 Generators will be used within the site compound for welfare and silo supply during working hours but will be silenced and operated on timed hours through the use of hybrid battery systems to minimise any impact on surrounding neighbours. Small portable generators, which are quiet, will also be used in plots by labourers during working hours.

Vibration

- 7.6 Nuisance from vibration can be caused by compaction activities and rock breaking and so the site has been engineered with regards to levels to minimise rock breaking where possible and compaction plant will be selected to reduce the effects of vibration on adjacent properties.
- 7.7 Vibration rollers will also only be used for short periods where possible and will be turned off when not in use.
- 7.8 Furthermore, given the ground conditions on site, it is unlikely that vibration will resonate outside the immediate work areas and will therefore not affect neighbouring properties.
- 7.9 Where complaints of excessive vibration are received, consultation with the affected property owners and other neighbours will be undertaken to identify if additional mitigation can be achieved.

8. DUST, EMISSIONS & ODOURS MANAGEMENT PLAN

Dust

- 8.1 The processes anticipated for the construction of the site do not pose a long term threat to air quality but there is likely to be some localised impacts during certain construction activities such as demolition.
- 8.2 Complaints can also be avoided by adopting good working practices:
- Identify sensitive receptors and inform the authorities of any likely nuisance that may occur;
 - Instigate control measures to mitigate any negative impacts; and
 - Develop a monitoring regime to record dust conditions while noting weather conditions, construction activities, their location and duration on site.

Dust Suppression

- 8.3 Roads and footpaths will be constructed to base course as soon as practicable; the length and width of haul roads will be minimised to reduce the surface area; heavily used areas will be paved and swept regularly; vehicles movements will be minimised and they will stick to the site speed limit as slower speeds generate less dust.
- 8.4 All vehicles likely to cause dust will be suitably covered and a maximum speed limit as per Redrow site rules will be imposed and signposted on both surfaced roads and unsurfaced haul roads and work areas. They will also have their wheels cleaned before leaving site if necessary.
- 8.5 The location of the site compound is such that machinery and dust causing activities are located away from receptors as far as possible; waste skips will be enclosed or covered; the use of cutting, grinding or sawing equipment will be used as a last resort and in conjunction with suitable dust suppression techniques; and bulk cement and other fine powder material deliveries will be in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- 8.6 Stockpiles will be sealed to prevent wind whipping.

Damping Down

- 8.7 Dust will be controlled by damping down with hoses or bowzers as required (more during demolition processes) in unpaved work areas and areas subject to traffic or wind and from on-site crushers for recycling inert material as fine spraying of water is the most effective way to suppress dust with regular repeat spraying, especially during windy and sunny weather when water will evaporate quickly, whilst minimising run-off into drains and watercourses.

Monitoring Regime

- 8.8 A monitoring regime will be in place which will note weather conditions, construction activities and their location and duration on site.

Emissions & Odours

- 8.9 Plant and machinery is to be correctly maintained to reduce exhaust emissions; unnecessary running is to be avoided; low sulphur/unleaded fuel to be used; and where possible, fixed plant is to be positioned away from site boundaries and occupied areas.
- 8.10 No burning of waste materials is to occur on site.
- 8.11 Consideration will be taken when planning activities likely to emit aerosols, fumes, odours or smoke, such as painting and adhesive operations, as to where venting will be located so as to minimise the disruption for neighbours.
- 8.12 Site toilets will be positioned so effluent tanks are as far away from occupied dwellings as possible.
- 8.13 No other processes are anticipated that will emit noxious odours or airborne pollutants and, in the unlikely event complaints are received of this nature, Redrow Homes will work with the Environmental Health Officer at the Local Authority to mitigate/minimise any emissions.

9. CEMENTIOUS MATERIALS CONTROLS

Method Statement

- 9.1 Cement bags will be sealed after use to prevent leaks and dust. Large areas of concrete will be swept down to reduce the dust present. Concrete, cement and mortar materials will be stored away from any watercourses or drains. The COSHH procedures will be followed by those working with cementitious materials to reduce the risks to health.

10. LIGHTING MANAGEMENT PLAN

Construction Lighting

- 10.1 By adhering to the working hours mentioned above, there will be no night working and so the need for site wide lighting will be avoided and any external artificial lighting, which will be restricted to the site entrance, compound, welfare facilities, parking areas and fuel and plant storage areas, during low light periods at the start and end of the working day, will be angled down to prevent unnecessary light pollution and nuisance.
- 10.2 Lights will be visible on all construction vehicles in order to provide awareness and visibility to people when moving around the site.
- 10.3 Certain operations will require task lighting, but this will not cause a nuisance to occupiers and, on the rare occasions artificial lighting (over and above proprietary lighting fixed to mechanical plant) is required to illuminate site operations, the local Environmental Health Officer will be consulted prior to its use.
- 10.4 As such, there will be negligible impact upon the surrounding area in terms of light pollution and, it is noted that, should a nuisance occur in future, this can be monitored and dealt with under the relevant legislation by the Environmental Health Officer.

Residential Lighting

- 10.5 Street lighting will be provided prior to occupation. It will have a vertical emphasis and there will be no direct back spill of light from this source outside the site.

Ecological Lighting

- 10.6 All temporary and permanent site lighting will be directed away from boundaries, including watercourses, tree and hedgerows to ensure no adverse impact on ecological features in, on or around the site or on sensitive species as discussed in more detail below.
- 10.7 In relation to nocturnal species, a sensitive approach will be adopted towards lighting where necessary through:
- the adoption of appropriate measures to minimise any increase in lightspill into retained and newly provided woodlands and hedgerow habitat features with particular care being given to limiting lighting levels within the key habitat corridors;
 - the creation of a plan showing Lux levels through the proposed development, including sensitive areas of the site, identifying precise areas of lightspill and enabling detailed consideration to be given as to potential impacts which could arise;
 - where highway requirements dictate that lighting columns need to be provided in close proximity to retained and newly provided habitat features, measures will be adopted to direct lighting to where it is needed thereby minimising lightspill to the lowest possible level. Potential avoidance and mitigation measures to be employed in areas of particular concern may include:
 - minimising any upward lighting to avoid light pollution;

- using hoods and cowls to direct light below the horizontal plane and away from habitat features to ensure that dark areas are retained;
- using low pressure sodium lamps or LED lighting which result in lower levels of lightspill; and
- providing taller areas of new dense tree and scrub planting adjacent to retained hedgerows as part of the proposed buffer planting, which would act as a natural barrier to the penetration of light into the features, ensuring that a dark corridor will remain present within the hedgerow at all times.

10.8 In relation to bats, the following additional measures will also be taken if necessary:

- retaining any trees identified as having potential for roosting bats if possible and locating areas subject to artificial lighting as far as practicably possible away from them;
- retaining and enhancing the vast majority of suitable foraging and commuting habitats; and
- minimising lightspill and safeguarding dark corridors of potential value to local bat populations.

10.9 Ultimately, where appropriate, measures will be taken should light become obtrusive to residents and sensitive ecological features or species.

11. CONTAMINATED MATERIAL PLAN

Existing

- 11.1 Contaminated material can include excavated waste as well as demolition waste.
- 11.2 Given the nature and previous uses of the site, we do not envisage that contaminated material will be a significant hazard and any demolition waste will be dealt with by the Demolition Contractor so please refer to the Demolition CEMP for more details.

Imported Materials

- 11.3 Any topsoil (natural or manufactured), or subsoil, to be imported shall be assessed for chemical or other potential contaminants where necessary.
- 11.4 Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants where necessary.
- 11.5 Any hazardous waste generated by the site will be disposed of in an environmentally friendly manner.

12. CONSTRUCTION DRAINAGE PLAN

Site Set Up

- 12.1 Upon commencement of development, the compound will be set up, haul roads provided as appropriate and surface water drainage as required with silt barriers will be constructed as indicated.
- 12.2 Following the site set up works, the site will be phased so roads, drainage and plot works can commence.
- 12.3 During construction, the primary point of discharge for all construction phase surface water will be via the existing 5 surface water connection points recognised by the previous site activities. Surface water will be controlled and cleaned prior to discharge from the site. They will be protected from the construction area with heras fencing and silt barriers will be placed around them so that they will effectively become "No Go" areas. The condition of water filtration system and silt barriers will be checked weekly (daily following heavy rainfall events) and cleaned/repared as required. These checks will be undertaken by the Redrow site manager.

Watercourses

- 12.4 There will be no in channel working without a method statement and any required permit.
- 12.5 When working near a watercourse, appropriate pollution control measures will be employed, with reference to available guidance including Pollution Prevention Guidelines (PPGs) and Guidance for Pollution Prevention (GPPs) documents¹, namely PPG1, *General guide to the prevention of pollution*, PPG5/GPP5 *Works and maintenance in or near water*, PPG6 *Pollution prevention guidance for working at construction and demolition sites* and PPG21 *Pollution incident response planning*, to ensure that detrimental impacts to the watercourse as a result of surface run-off, spillage and pollution arising throughout the construction phase are avoided.
- 12.6 All refuelling, greasing and application of lubricants will be undertaken no closer than 10m to a watercourse or water body.
- 12.7 All plant and machinery entering in whole or part into a watercourse or waterbody will be jet washed clean prior to entering the water.
- 12.8 There will be no discharge of sediment rich water (e.g. washings) into a watercourse or waterbody without prior treatment.
- 12.9 All sediment, chemical or other pollution incidents will be recorded and notified to the relevant authority (the LPA and / or Natural Resources Wales).

¹ PPGs were withdrawn in December 2015; however, they remain the main source of information regarding best practice IN Wales with respect to pollution prevention. A replacement guidance series, comprising Guidance for Pollution Prevention (GPPs), are currently in development and should be referred to where available. Pollution advice listed at <https://www.gov.uk/government/collections/pollution-prevention-guidance-ppg> should also be referred to.

Silt Management

- 12.10 As required, temporary drainage grips or earth bunds with temporary silt barriers will be constructed around the working areas (demolition, re-profiling and house build stages) to control any rainwater accumulations and will be dealt with by conventional pumping techniques with silt control for discharge. Regular inspections will be carried out to ensure efficiency of pumping equipment.
- 12.11 Excavation works and soil movement will be avoided during heavy rainfall events and temporary silt barriers will be erected as required to control surface water around specific working areas that will be made up of a geotextile membrane, allowing water to pass and filter out the silt. Any barriers will be regularly checked to ensure that they remain effective throughout the construction process.

- 12.12 All newly constructed road gullies will be protected with silt bags installed in the gully pots and maintained through the life of the development by means of daily inspection by the site manager.

Pesticides

- 12.13 In the event that such an application should be required, the contractor shall be aware of the proximity to water courses and sites of ecological interest.
- 12.14 Herbicides may only be used in accordance with the Control of Pesticides Regulations 1986 and COSHH Regulations, be used only by certified operatives and apply herbicides strictly in accordance with the manufacturers' label recommendation and complying, where applicable, with the Code of Practice for Herbicides near Water.
- 12.15 Equipment used shall be shielded to prevent drift.
- 12.16 Records of all pesticide use shall be approved by the site manager prior to use with records of use (including but not limited to reason for use, location of use (plan), chemical name, COSHH data sheet, amount, type of application, weather conditions) submitted to the site manager on the same day as the application.
- 12.17 No herbicides to be applied to stockpiled soils unless otherwise approved.
- 12.18 Pernicious weeds identified within topsoil or any other material imported or exported from site will be treated appropriately. The use of chemical control methods will be considered.

Foul Drainage

- 12.19 Foul drainage from the site compound will enter a live sewer previously serving a bungalow and security hut off Lodge Road. If a live sewer cannot be connected to at any part of the build then foul drainage will be confined in a suitably contained tank. The tank will be emptied every week where the operative will follow their company's best practice manual whilst carrying out the work.

Emergency Procedure

- 12.20 All site staff and contractors (especially ground workers and plant operators) will be briefed on the agreed control measures and actions to take in the event of an emergency. The briefing will include advice on how individuals can assist in controlling construction drainage during their work activities.

13. GREEN INFRASTRUCTURE PLAN

Trees and Hedgerows

13.1 Prior to any construction work starting, protective fencing will be installed and maintained to protect the green infrastructure (tree and hedgerows) on site as shown in the Arboricultural Method Statement and Tree Protection Plan submitted as part of the full application.

- 13.1 Retained tree root protection areas (RPAs) will be demarcated and protected with heras fencing or similar to ensure that plant, machinery and personnel cannot enter under their canopies and kill or damage them accidentally. Such areas will be appropriately signed.
- 13.2 Land levels within RPAs will not be altered without the prior approval of the LPAs Tree Officer.
- 13.3 All tree works (felling, lopping, pruning etc) will be undertaken by a certified arboriculturalist outside of the breeding bird season (March to September) unless approved by, and under the supervision of, a suitably experienced ecologist.
- 13.4 All arboricultural works to trees with potential for bat roosts will be subject to an update ground-level inspection by a suitably qualified ecologist to determine their current potential to support roosting bats. Where trees are identified as having moderate or greater potential, then such trees will be subject to a further detailed aerial inspection whereby all suitable roosting features will be checked at height for the presence of bats. Aerial surveys will be undertaken by a suitably qualified and Natural Resources Wales (NRW) bat licensed ecologist, arboricultural contractor with a NRW bat survey licence, or with experience of working with bats and under the supervision of a NRW bat survey licence holder.
- 13.5 If any bats are discovered during the aerial inspection, owing to the strict legal protection afforded to bats and their roosts, works are likely to require a European Protected Species (EPS) Mitigation Licence from NRW before works can continue.
- 13.6 If no evidence of roosting bats is uncovered during the aerial inspection, works may proceed without an EPS Mitigation Licence from NRW. However, regarding those trees identified as having potential to support roosting bats, a 'soft felling' technique involving the sectional dismantling of the tree will be adopted.
- 13.7 No construction work or material storage is to take place inside the protection zones and their presence will be highlighted during the site induction to all visitors on the site and will include the protocol for what should be done when any protected species are encountered, i.e. stop work, make the area safe and contact the designated site ecologist.
- 13.8 An ecologist will also instruct the site management team on the content of the induction prior to any works commencing and a pre-start meeting on site will include the ecologist where a site walk will take place and Redrow will agree the course of action at each stage of construction with the ecologist. This will be reviewed regularly to ensure it is kept up to date. In addition, the ecologist will be contacted before any clearing or stripping works to advise and if needed, supervise any works. The contact details of the chosen ecologist shall be provided on request.

Non-Native Invasive Botanical Species

- 13.9 Any non-native invasive botanical species such as Japanese Knotweed and Himalayan Balsam that are identified on site will be treated accordingly. To note that Japanese Knotweed identified during September 2019 is already subject to an eradication programme by a licenced contractor.

Watercourses and Ponds

- 13.10 Safe working practices will be followed to prevent accidental pollution including the use of protective fencing and silt barriers where necessary.

Reptiles

- 13.11 To create the exercise trail and new cycle/pedestrian linkages to the north east of the site some areas of habitat suitable for reptiles may need to be removed. As a result, these areas will undergo a habitat manipulations exercise and any reptile found will be translocated accordingly to a retained area of suitable habitat. The clearance will be undertaken between April and September/early October so as to avoid the main hibernation period of common reptiles. Where this is not feasible, such works will only be undertaken at the discretion of the ecologist, under supervision and following pre-commencement checks to rule out hibernation potential. In instances where hibernation potential is ruled out, clearance may proceed;

- Grassland habitat will be subject to directional cutting over two phases. Specifically, an initial cut of grassland habitat will be undertaken using hand-held machinery, reducing vegetation height down to a minimum of 200mm, with clearance commencing from the centre of the fields and directed towards adjacent retained habitat. A second cut of the proposed footprint areas will be undertaken immediately thereafter, with vegetation cut to ground level and no greater than 30mm in height;
- During clearance any potential refugia located within the construction footprint will be carefully dismantled under ECoW supervision using hand tools, hand-held machinery or untracked, light machinery to facilitate efficient supervision;
- All arisings will be removed from the construction footprint and vegetation will be maintained thereafter at a height no greater than 20mm through regular mowing or strimming to discourage wildlife from returning; and
- In the event any notable species including identified during site clearance these will either be captured by hand by the attending ECoW and immediately released into retained habitat adjacent or otherwise left to disperse of their own accord.

Breeding Birds

- 13.12 Any areas of habitat suitable for nesting birds or containing active bird nests may need to be removed in order to facilitate development. Therefore, the timing of any construction works must take into account the breeding bird season which lasts from March to September with any works taking place outside of these times unless the area to be removed has been inspected by a suitably qualified ecologist and confirmed clear or protected by netting.
- 13.13 As breeding birds are at risk of being disturbed, killed or injured during the construction process, any retained areas that are a suitable habitat for breeding birds will be protected from accidental damage through the use of protective fencing.
- 13.14 Should birds be suspected to be nesting on site at any time then works in the immediate vicinity will be halted and the supervising ecologist will be called to site to assess the situation.

Lighting

- 13.15 Temporary lighting is not anticipated to be used during the construction phase. However, if required, it will be located and directed accordingly and have regard to best practicable means in order to reduce light spillage onto sensitive habitats.

Ecological Measures Phasing

- 13.16 The ecological protection measures identified below will be put in place where necessary prior to the commencement of development and be phased as detailed below. However, please note that this is indicative and subject to change:
- Phase 1 – Site boundary fencing erected; ecological buffer zone established and fencing installed, silt barrier installed; site set up and haul roads constructed; and wheel washing facilities put in place.
 - Phase 2 – Soil that is stripped and banded between 150-300mm depending on topsoil depth is placed in topsoil storage area; wheel washing facilities moved as build progresses.
 - Phase 3 – Construction commences on roads, drainage and foundations.
 - Phase 4 – Development is completed; site compound, ecological fencing, silt barriers and site perimeter fencing removed.

Site Compound

- 13.17 The compound will be located on existing car parking areas of the site prior to the eventual development of those areas. Please refer to Construction Management Plan in appendix B.

14. SITE WASTE MANAGEMENT PLAN

Reduce, Reuse, Recycle

- 14.1 Redrow operate a procedure to reduce all waste on site.
- 14.2 The first step is to prevent any waste being generated through educating the sub-contractors. This is also done by using factory produced materials to reduce the off-cuts generated.
- 14.3 The second step is to reuse any materials or items as many times as reasonably possible before disposal.
- 14.4 The third step is to recycle materials. This involves separating materials into hazardous waste, timber, metals etc. The recycle bins will be regularly emptied to avoid any overflowing of the bins. Hardcore materials will be crushed and used as aggregate on site where possible.
- 14.5 The final step is to dispose of any leftover material as waste to the respective landfill using a licensed contractor able to provide waste transfer notes along with any other relevant documentation.
- 14.6 After following the reduce, reuse, recycle model, the waste from site to landfill is reduced by around 90%.
- 14.7 Burning of waste or any other materials is not permitted.

15. CONTACTS & COMPLAINTS

Project Team

- 15.1 The management team on site consists of a 'Site Manager', an 'Area Construction Manager' and a 'Project Manager' for support and assistance, please see below for more details.

Site Manager	To be confirmed
Contact Number	To be confirmed
Summary of Role	Health & Safety Management on Site; Site Maintenance; Contractor Management; Calling Off Works.

Area Construction Manager	To be confirmed
Contact Number	02920 549103
Summary of Role	Quality Management; Health & Safety Standards on Site; Programming.

Project Manager	Reuben Cooke
Contact Number	02920 549103
Summary of Role	Planning Liaison; Technical Project Management; Provision of Information.

- 15.2 The details and phone number of the site manager will be displayed on a board on the boundary of the site prior to the commencement of construction.
- 15.3 The number of the shared regulatory service will also be displayed on a board on the boundary of the site prior to the commencement of construction.
- 15.4 Note that these are a brief summary of job responsibilities and change regularly depending on the situation.
- 15.5 In an emergency, Natural Resources Wales can also be contacted on 0300 065 3000.

Neighbour Consultation

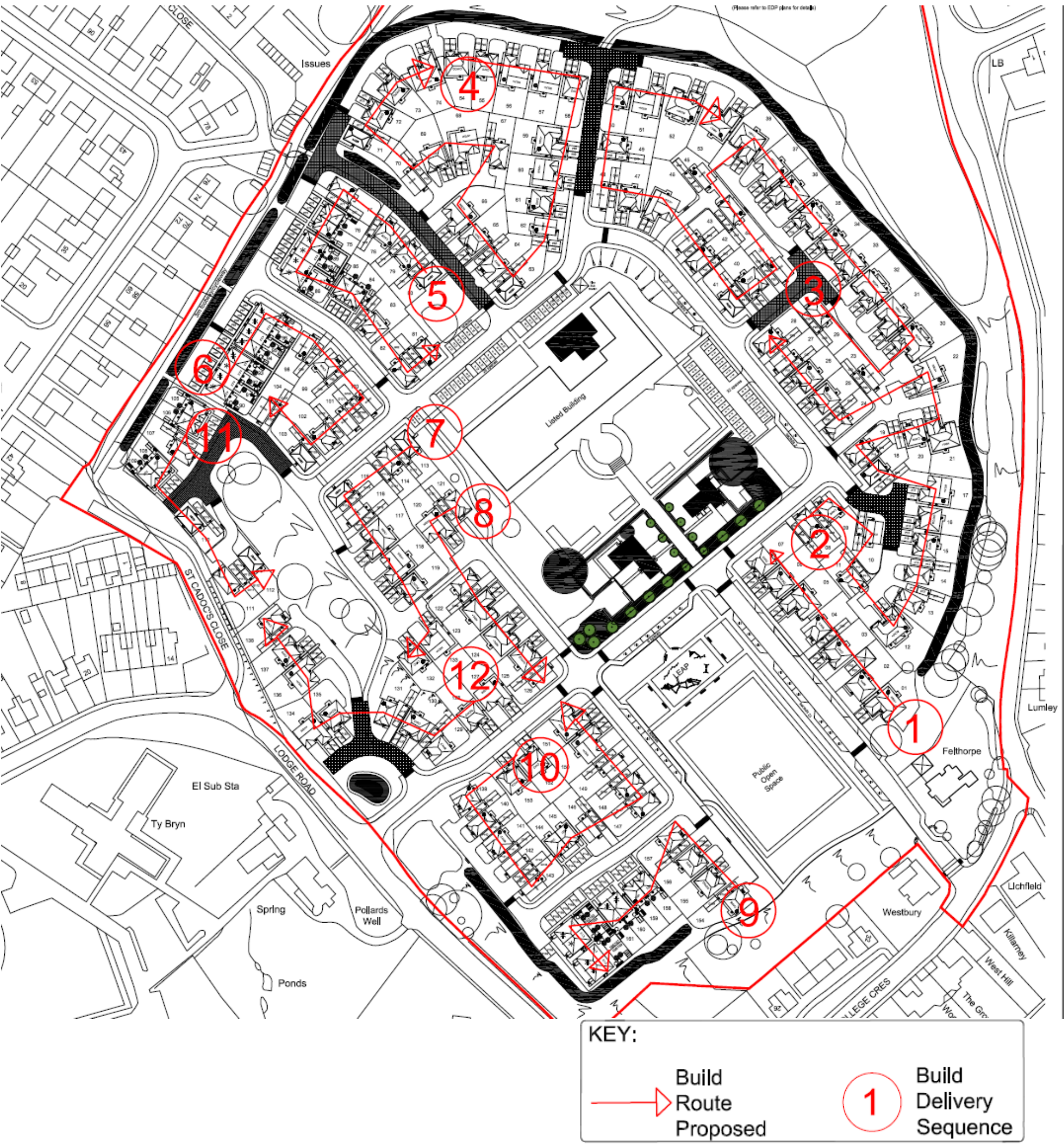
- 15.6 Local residents will be notified via letter drop prior to commencing works on site and to inform them of the exact timings of any potential works which may disrupt their normal day to day activities.
- 15.7 Contact details will be provided on these letters should they have any concerns or queries.

Complaints Procedures

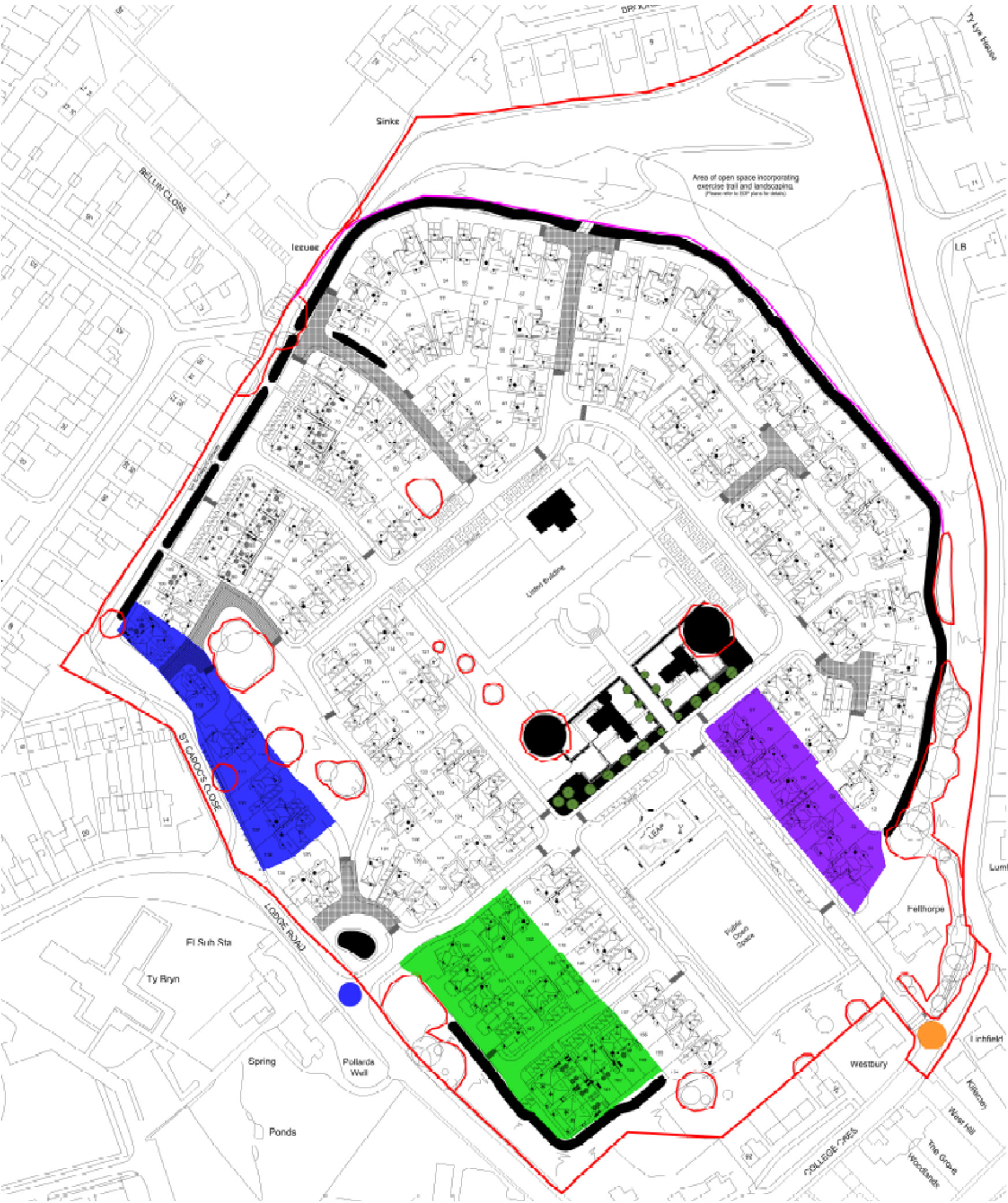
- 15.8 Any complaint issued to site shall be dealt with promptly and appropriately.
- 15.9 Prior to site start, the site manager shall introduce himself to all neighbouring properties and will provide his contact details. These contact details shall provide a direct point of contact at Redrow should any issues arise.

- 15.10 Any complaints received by the Site Manager shall be recorded and, if appropriate, raised to the required level necessary to resolve.
- 15.11 An answerphone service will be available outside working hours.
- 15.12 Complaints can also be reported to the site sales office where they will be recorded and passed to the site manager for his attention.
- 15.13 Once customers begin to occupy dwellings, Redrow's in-house customer service department shall provide aftercare and assistance. Each customer will be designated a single customer service manager who will be responsible for addressing any issues that arise in a timely manner.

APPENDIX A
Construction Phasing Plan



APPENDIX B
Construction Management Plan



Key:

Visitors/Occupiers Access

Silt Barrier

Welfare set up and Parking

Show Area

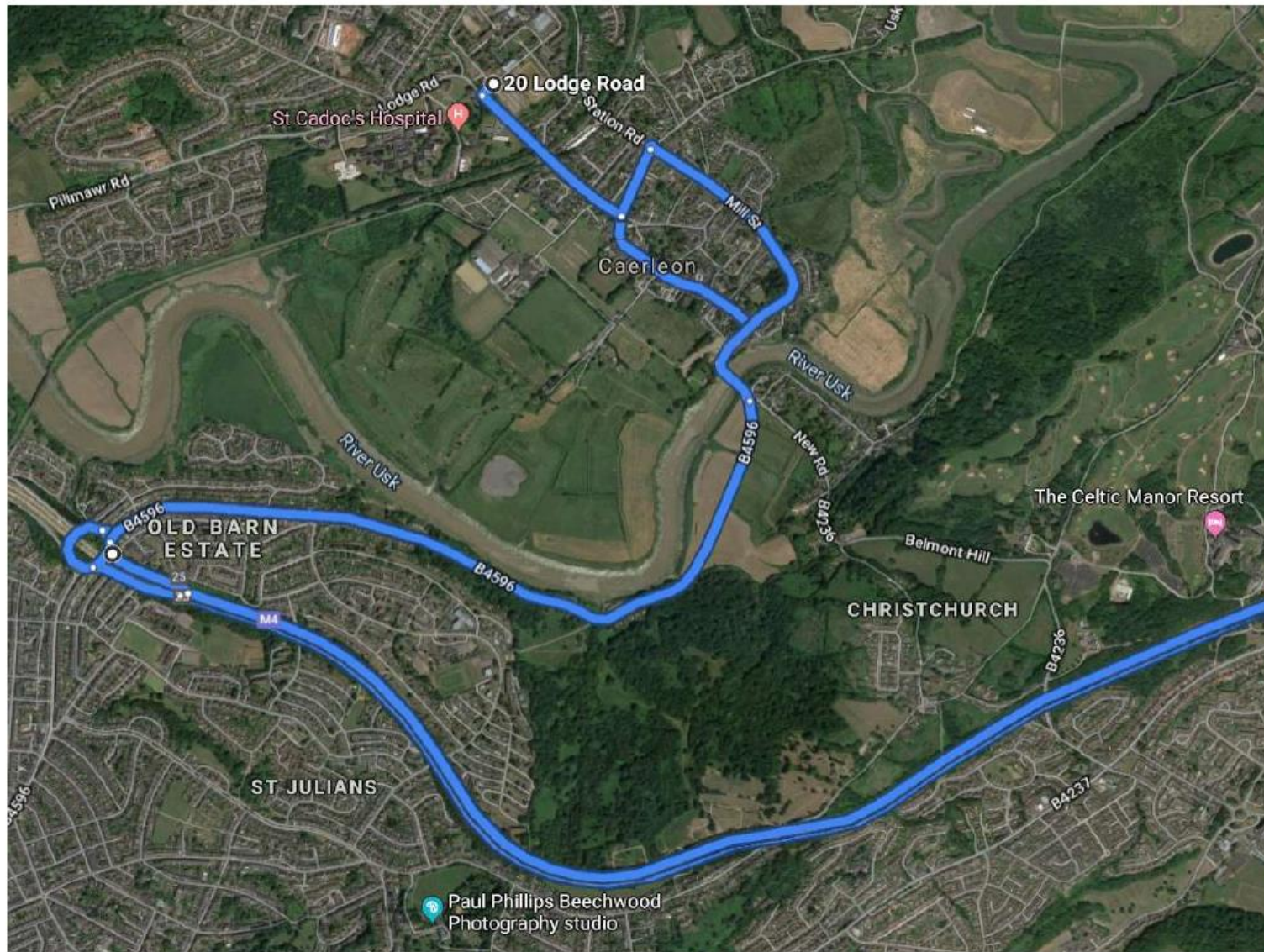
Construction Vehicle Access

Tree Protection to be constructed as per approved plan

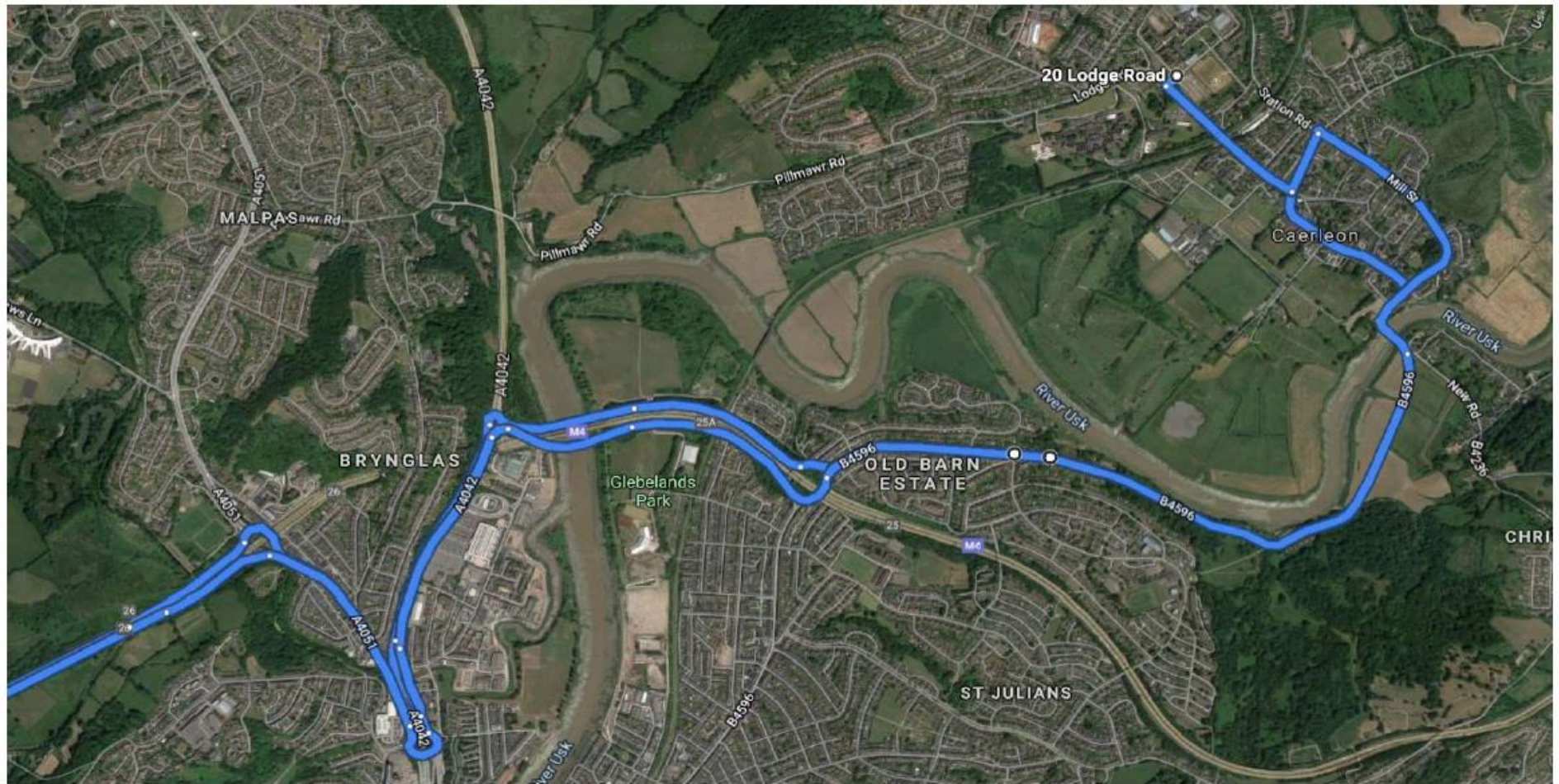
Material Storage

APPENDIX C
Construction Traffic Routes

Construction Traffic Route To/From M4 Eastbound



Construction Traffic Route To/From M4 Westbound



APPENDIX D
Construction Vehicles

	
Excavator	Dumper
	
Telescopic Fork Lift	Bulldozer
	
Earthmover	Road Roller
	
Tipper	Soil Transporter
	
Road Sweeper	Articulated Lorry
	
Delivery Lorry	Delivery/Contractor's Van