

Henry J Lyons

Architectural Design Statement

29.06.2021

Project:
EDC DUB05 Data Centre

Project Address:
Land at Ballymakailly, Lucan, Co. Dublin

Project Ref. No.
950801

Client:

edgeconnex

EDC DUB05 : Architectural Design Statement

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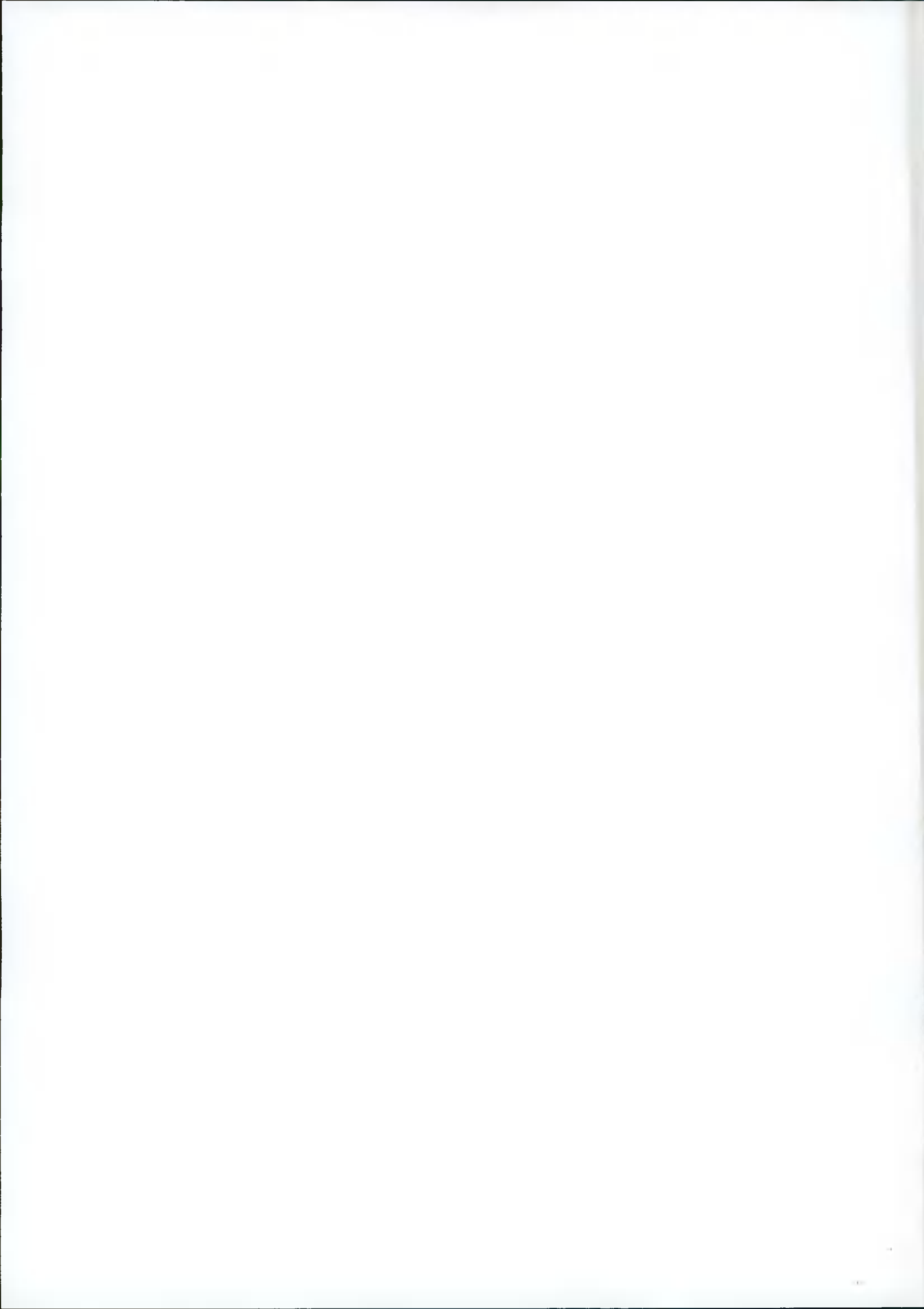
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Issue No	Date	Prepared by	Controlled by	Issue Details
01	17 February 2022	Fernando Girbal	David Gilligan	Initial release
02	29 June 2022	Fernando Girbal	David Gilligan	RFI

ISSUE 02 Rev 00

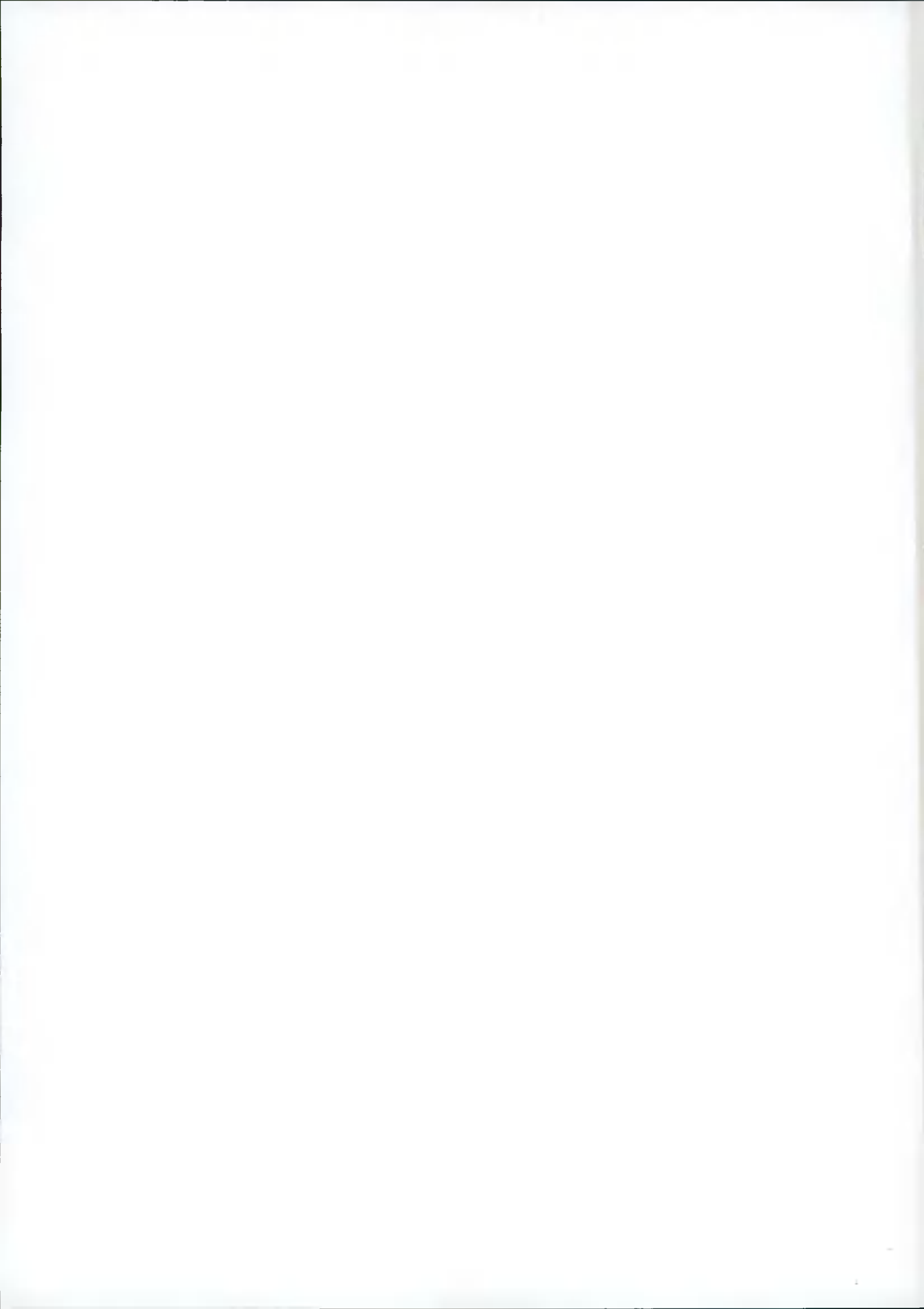


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ARCHITECTURAL DESIGN STATEMENT

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1. INTRODUCTION

An initial phase of development, at this green field site within the townland of Ballymakilly to the west of the Newcastle Road (R120), Lucan, Co. Dublin, consisted of two-stage, single storey Data Centre and associated facilities to the south east of the site together with landscaping of the entire perimeter of the site. This initial phase was granted planning permission by SDCC and upheld by An Bord Pleanála. The references for this are SD19A/0042 and ABP- 305948-19.

The subject matter of this proposal is the second phase of development for this site. It is to be located to the west of the site and is within the master plan intent indicated in the planning permission referenced above-utilising the established site entrance and building on the established permitted landscaping. The proposed development will consist of two stage single storey Data Centre with associated office and service areas and three gas powered generation plant buildings. Additional landscaping is proposed.

The purpose of this document is to provide an overview of the context, purpose and design rationale of this development. It should be read in conjunction with the balance of drawings and documents submitted with this Planning Application.

The project entails the development of the north western and south western quadrants of the site. The single storey data centre building housing the two data halls, associated plant rooms and support areas including loading bays, stores, offices and welfare facilities are located to the north west and the gas powered generation buildings are located to the south west. The development will also contain new external plant areas including back-up diesel generators, with associated control rooms, sprinkler water tanks and pump houses A vehicular and pedestrian entrance, roadways and vehicle parking, fencing, landscaping are developed from the original planning permission. Additional storm water attenuation is provided adjacent that already proposed for the initial phase/permission.

The site access from the R120 is maintained as established by previous planning permission.

The design critical capacity of the facility is 30 MW. The combined gross floor area of all proposed buildings is 24,624 sq. m.



2. SITE ANALYSIS

The overall site extends to over 22.1 ha. It is a green site of tillage and pastureland bounded by the recently realigned Newcastle Road to the east, similar agricultural land to the south and west and the Grand Canal and its associated heritage zone to the north.

The 12th lock, lock bridge and lock keeper's cottage are located to the north-east of the site. Disused and derelict farm buildings are located along the northern site boundary.

Tree rows and hedge rows define site boundaries to north, south and west as well field boundaries within the site.

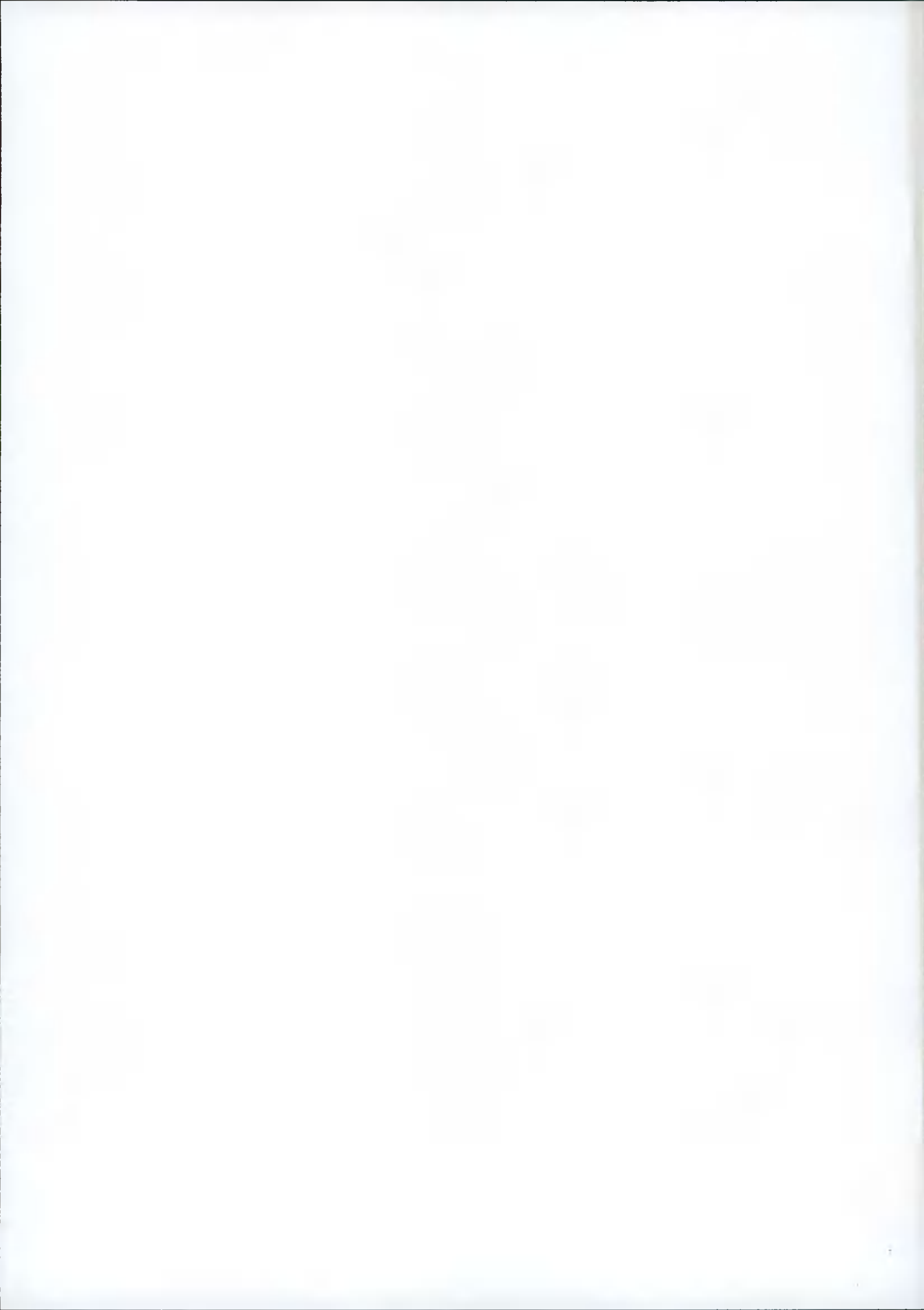
The site falls from the west to the east by approximately 5m.

Under the current South Dublin County Council Development Plan 2016-2022, the site (as well as surrounding areas to the west, south and east) is zoned as Objective EE: "To provide for enterprise and employment related uses". A buffer corridor adjoining the canal, 80 to 100m in width is zoned RU.

The proposed use as a data facility (Light Industry / Science and Technology Based Enterprise) is located within the scope of land zoned EE and the corridor zoned RU is maintained as amenity. Lands to the west, south and east are also zoned EE.

There are a number of dwellings located on the east side of the R120 – to the east of the site.

Comments on site analysis can be read in conjunction with Diagram 1.



SITE ANALYSIS SITE BOUNDARY IN RED

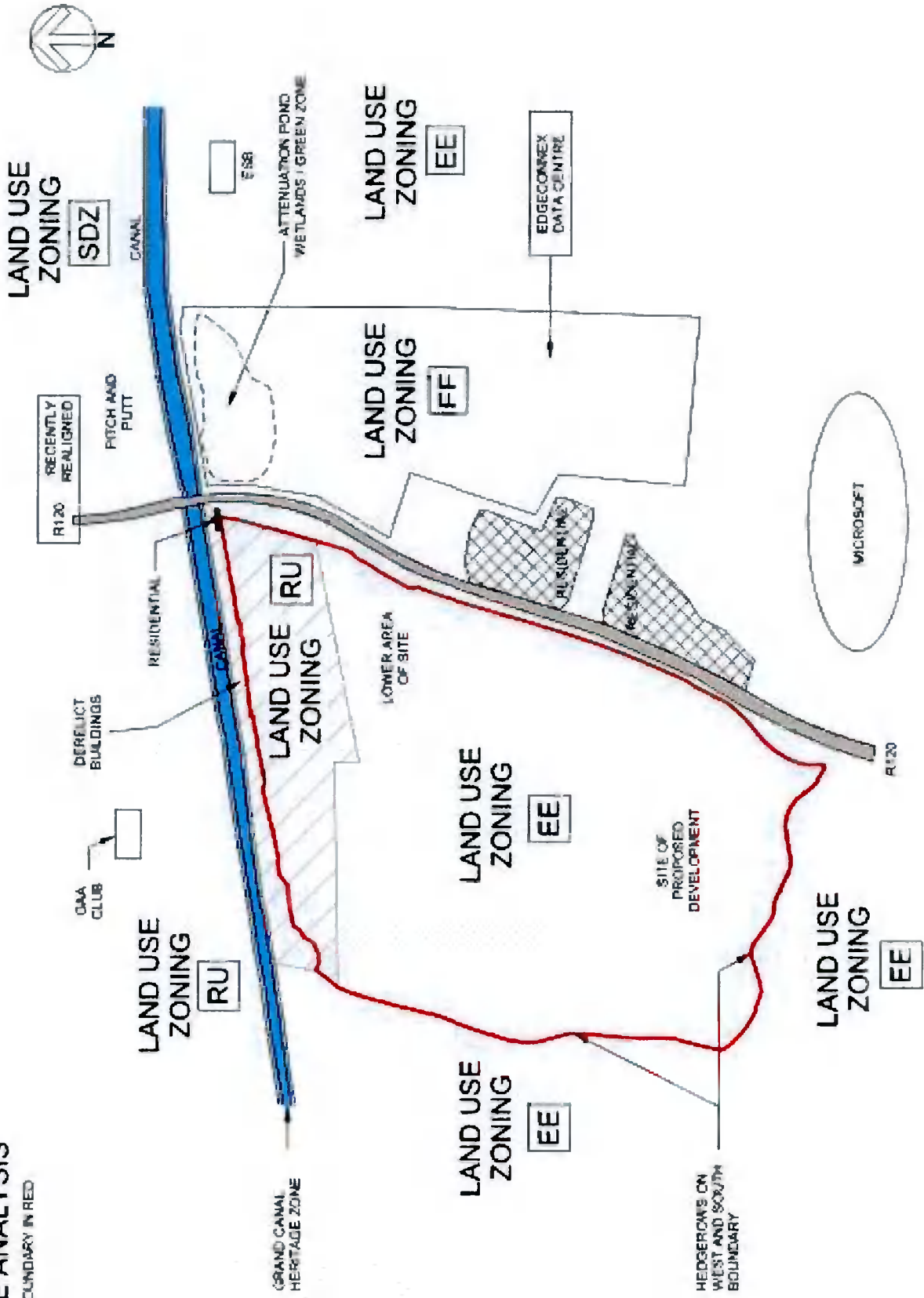
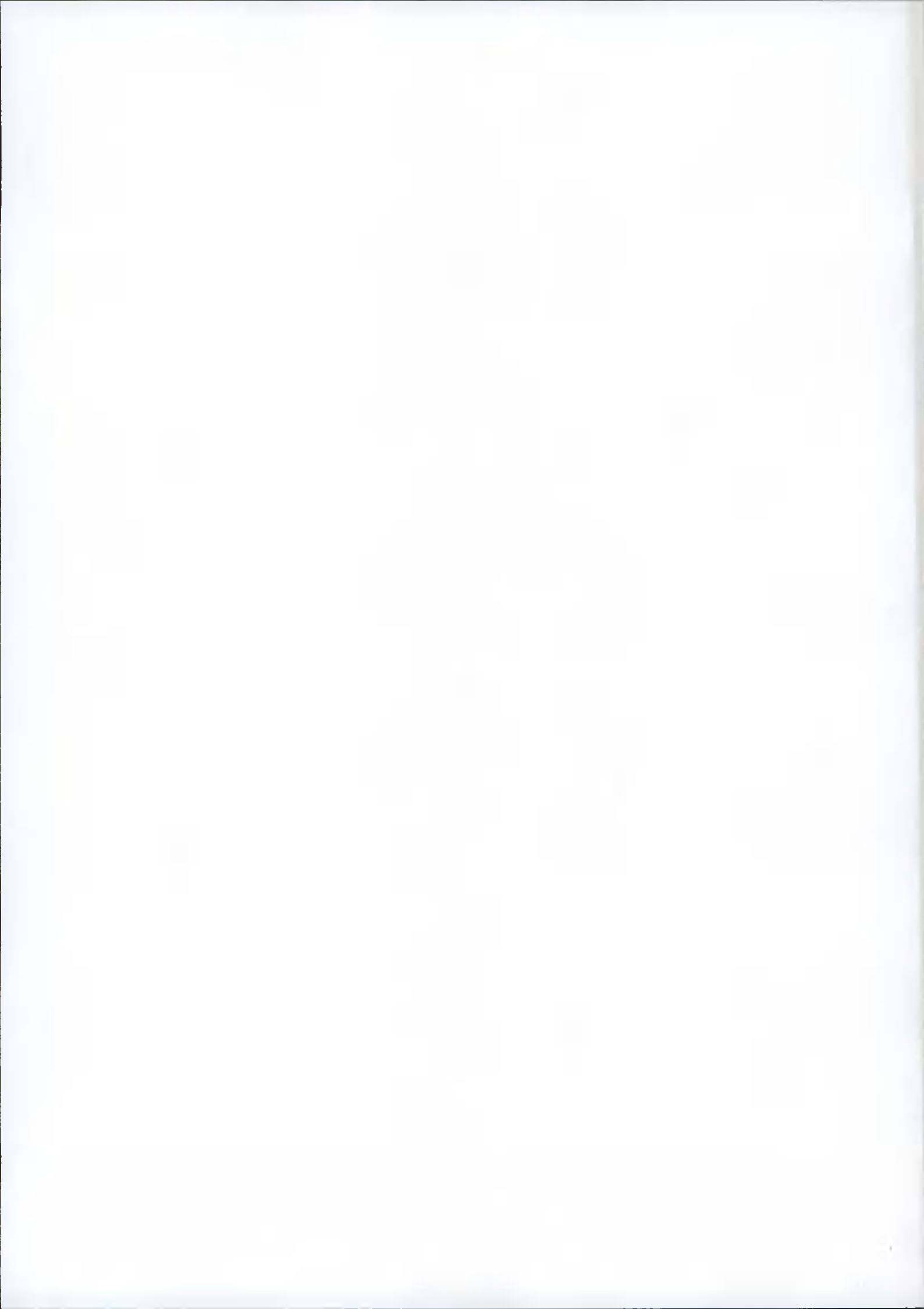


Diagram 1



3. SITE CONCEPT

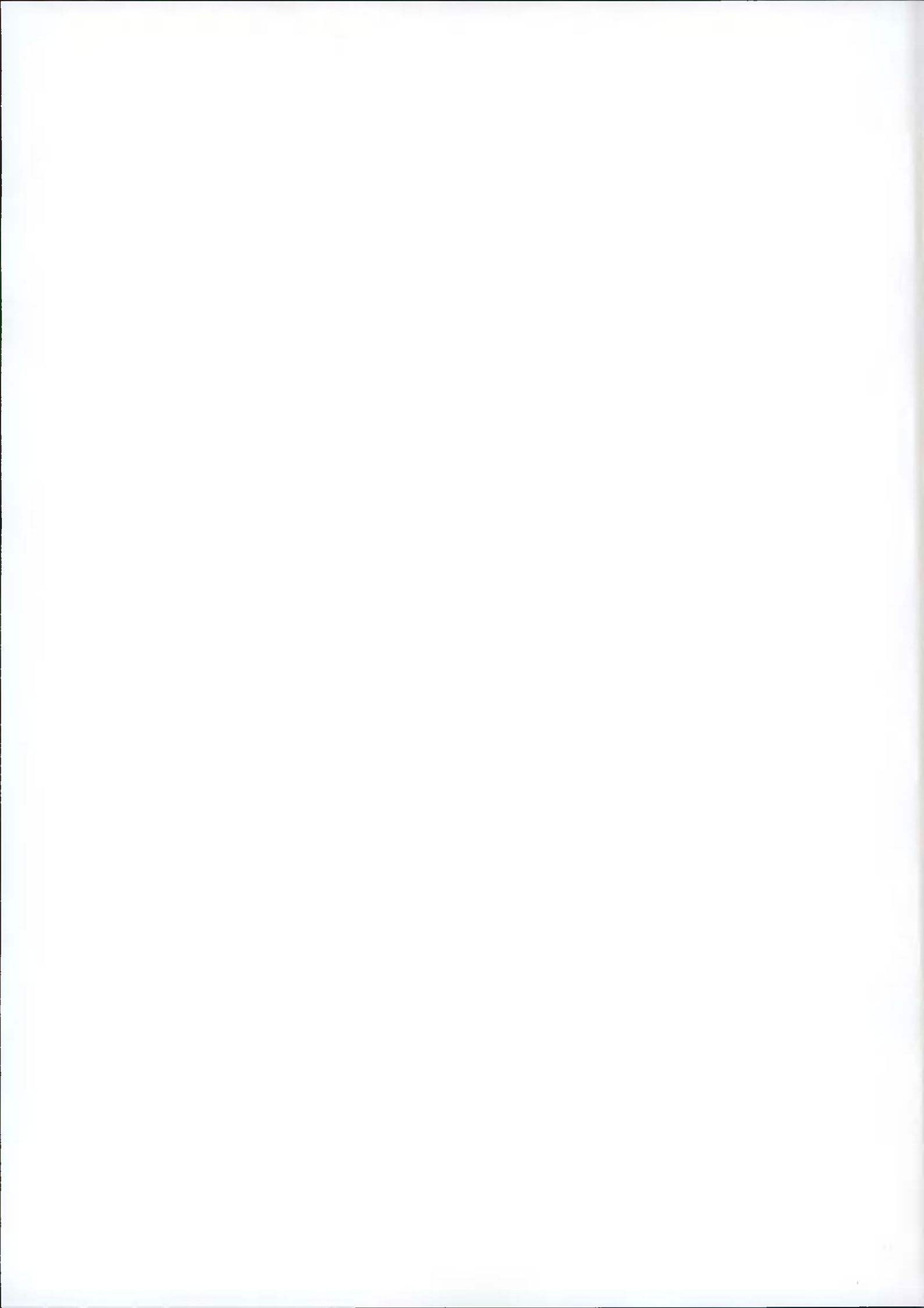
The dominant feature of this site is its adjacency to the Grand Canal Heritage zone which runs along the northern boundary. The site immediately adjacent to the Grand Canal is being developed as a green area that will considerably reinforce the ecology of the Grand Canal corridor. The proposed design includes a pathway that will link into the public route along the canal towpath and provide focal points for viewing and enjoying the proposed landscape, wetland and ponds located in the lowest area of the site. This densely landscaped area to the north of the site connects with a perimeter corridor of undulating berms, trees and planting encompassing the entire site. In addition, an east west hedgerow corridor has been introduced through the middle of site to further enhance ecology.

Contrary to a trend to design Data Centres in multi storey format, the proposed development is single storey. In response to its immediate environment.

The positioning and layout of buildings will place office and admin functions facing boundaries with service zones located towards the centre of site and away from residential areas.

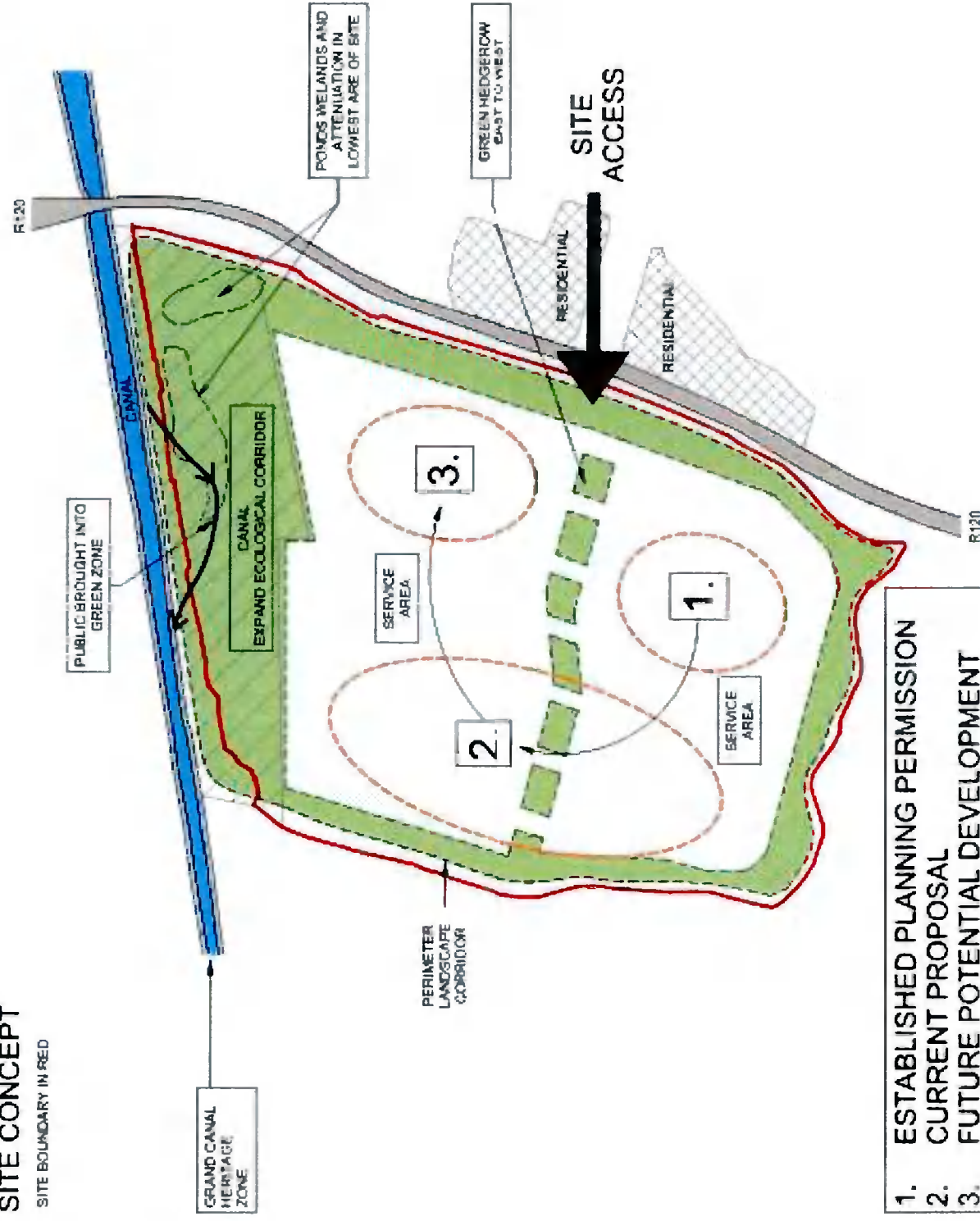
The site of the proposed development, as stated above, has been the subject of a previous planning application and grant of permission. The permitted development is located to the south east of the site. The design of this permission was conceived to fit within this masterplan/site concept which has now been enhanced.

Comments on the site concept can be read in conjunction with site concept drawing, Diagram 2.



SITE CONCEPT

SITE BOUNDARY IN RED



1. ESTABLISHED PLANNING PERMISSION
2. CURRENT PROPOSAL
3. FUTURE POTENTIAL DEVELOPMENT

Diagram 2



4. ACCESS AND MOVEMENT

The main vehicular and pedestrian site entrance will be located centrally off the Newcastle Road (R120) as per previously established planning permission [SD 19A/0042, ABP305948-19]. Adequate room is provided within the site boundary for traffic awaiting clearance to access the facility through security gates. Pedestrian and vehicle access are separated.

The data centre complex is required to be located in a strictly secured zone.

The security boundary is located on inside of primary perimeter landscaping, between the landscaping and the buildings.

An internal ring road will facilitate operational and fire tender access to all sides of the building complex.

The road network is 8.6m wide and allows for defined cycle lane s. The speed limit is controlled at 30kph with road signs provided. Security will monitor the entire site on 24/7 basis.

A dedicated 2-bay loading facility with a 1no. level access loading bay is provided with access on the south side. of the administration part of the building which will remove deliveries from pedestrian, bicycle or car traffic.

Car parking provision is 37 spaces to cater for staff and visitors, including 4 EV and 2 disabled parking spaces together.

Covered bicycle parking is provided adjacent entrance to the administration and main entrance as indicated on drawings.

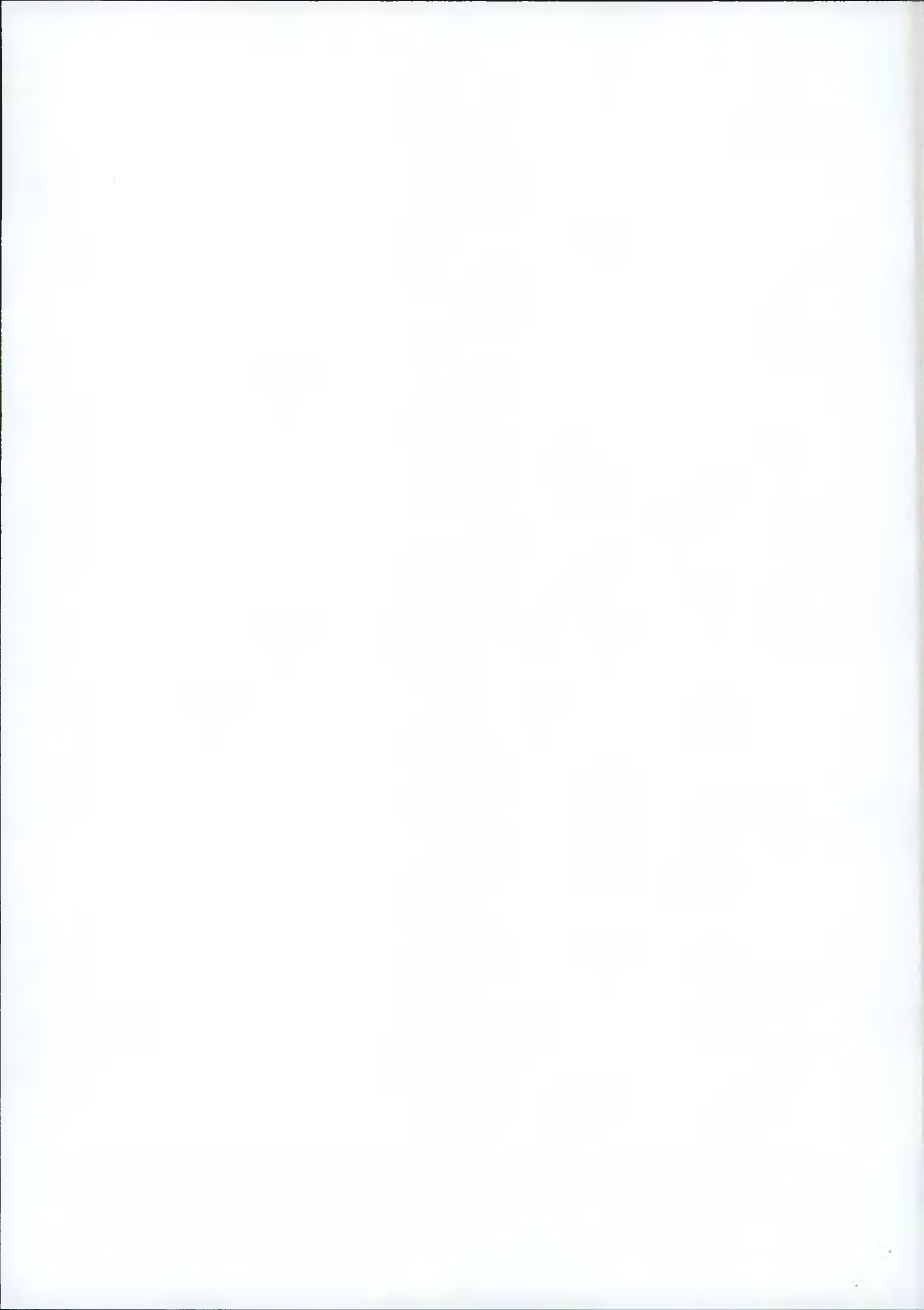
The open landscaped space on site adjacent public pedestrian towpath along the Grand Canal will be accessible to the public with pathway through the landscaped and water features as indicated on Kevin Fitzpatrick Landscape Architects drawings submitted with this application.

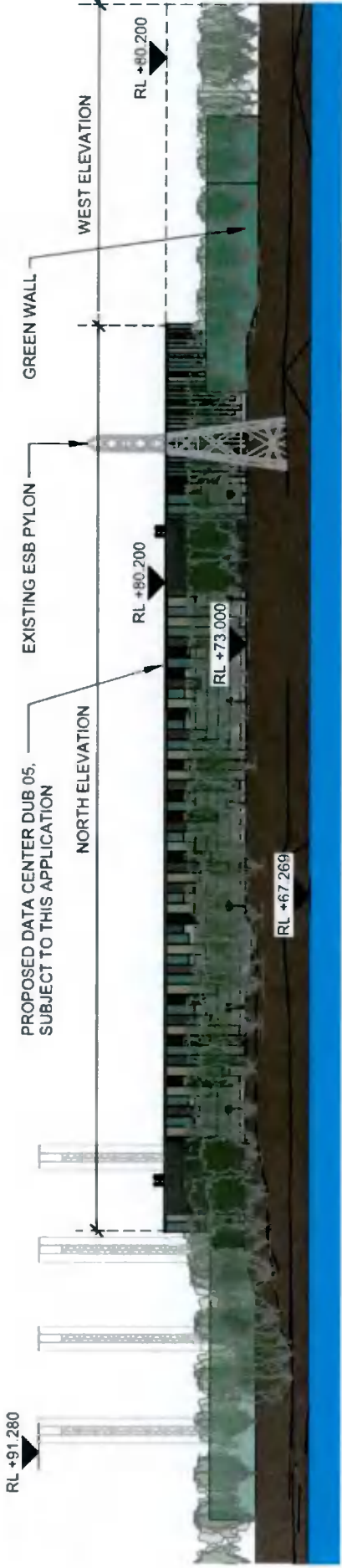
The Data Centre will be occupied on a 24-hour basis with reduced staffing at night.

5. OPEN SPACE AND LANDSCAPE

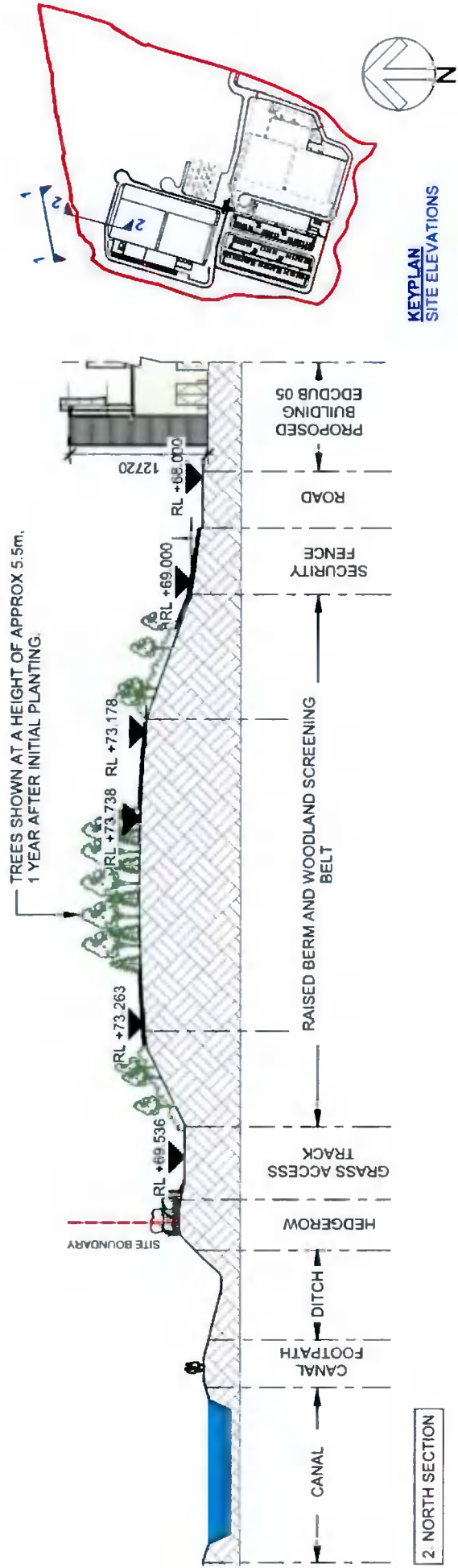
The perimeter of the site is treated as a continuous green buffer of interlocking and overlapping planted berms. This landscaping principle is enhanced at the north end of the site where the Grand Canal heritage belt is extended in depth by a minimum of 50m to over 100m to house planting and wetlands including surface water attenuation areas. Public access from the canal towpath will be extended into this space. Pathways will be provided leading to seating/viewing points.

The primary objective of the site strategy is to minimise the impact of noise and other emissions, softening transition areas and removing the most impactful plant installations away from sensitive boundaries and towards the core of the site. Similarly, tall and voluminous structures are located away from neighbouring lands and public roadways. The proposed structures and plant compounds are located on the south west and north west corner of the site, leaving the north east of the lands undisturbed at this stage of development. An ecological corridor is introduced from east to west bisecting the site- to the north of the already permitted Data Centre building and north of the proposed gas power generation buildings. This new hedgerow which has been introduced in part within the layout previously granted planning permission will provide a significant biodiversity gain to the development of the site. Green walls are proposed on the north façade of the generators and around the water tank compound of the Data Centre building and on the south face of the gas power generating buildings. The integration of open space and landscape is illustrated in site concept drawing above and the site elevations indicated below, Diagram 3 & 4





1. NORTH ELEVATION



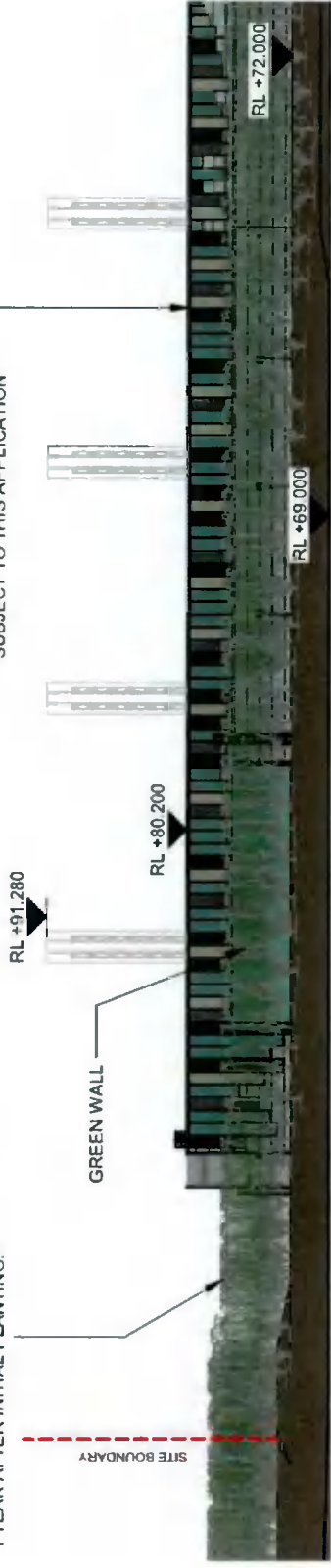
2. NORTH SECTION

Diagram 3



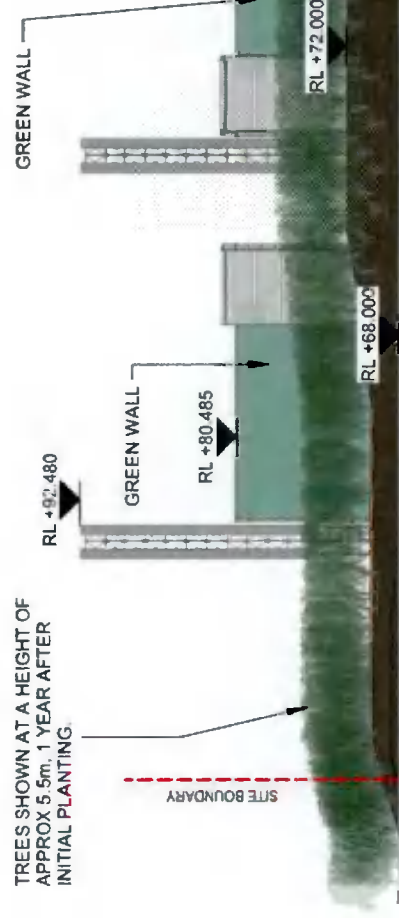
TREES SHOWN AT A HEIGHT OF APPROX 5.5m.
1 YEAR AFTER INITIAL PLANTING.

PROPOSED DATA CENTER DUB 05,
SUBJECT TO THIS APPLICATION



3. WEST ELEVATION

TREES SHOWN AT A HEIGHT OF
APPROX 5.5m. 1 YEAR AFTER
INITIAL PLANTING.



4. SOUTH ELEVATION

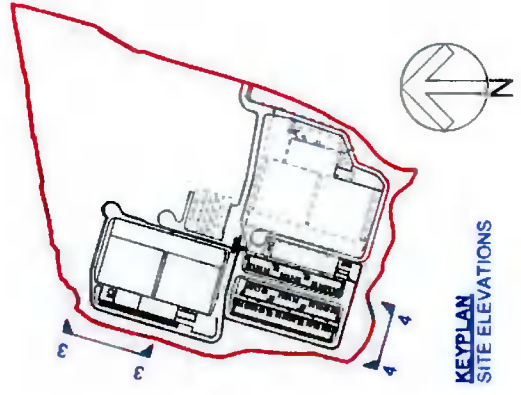


Diagram 4



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6. BUILT FORM AND CORPORATE IDENTITY

The site is located to the west of an existing business park with recent built developments of similar nature. In contrast to current trends in Data Centre for multi storey developments this proposal is for a single storey Data Centre. The site will be developed in a number of phases with a number of buildings to ensure that massing and scale respond to the particularities of the site.

The design, colour and texture of all external elements are selected to minimise impact on the site and to complement the existing nearby industrial buildings. The appearance of the new buildings subject of this application will be in-keeping with the prevalent industrial landscape but with a softened interface with green surroundings and the newly landscaped areas. The external facade finish to all buildings will comprise proprietary composite (insulated) cladding panels onto a support framing/structure. Their external metal face will be colour-coated. The design of sensitive elevations features an undulating pattern of different green hues in vertical bands, creating an interface with background greenery, breaking the scale of the building faces and reducing the apparent bulk of the blocks.

Various shades of green vertical panels are proposed similar in effect to the photographs shown here.





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There is no corporate signage proposed for the buildings.

Glazing to office and welfare rooms will be a coated aluminium proprietary system.

Green walls are integrated into building facades on the north face of proposed development set back a considerable distance from and facing the Grand Canal ecological and heritage zone. Green walls are also positioned on south face of gas power generating buildings.

The entire site perimeter contains a landscaped zone of berms and planting as noted in section 4.3 of this report.

The proposed data centre building is formed by two distinctive volumes. The principal larger block contains data halls and their associated electrical rooms. The smaller service block comprises ancillary plant and support areas, loading bays, storage, office and staff welfare facilities. Glazing to office and welfare rooms will be a coated aluminium proprietary system.

Access to roof level for service and maintenance access is via external stair cores which also provide emergency escape routes.

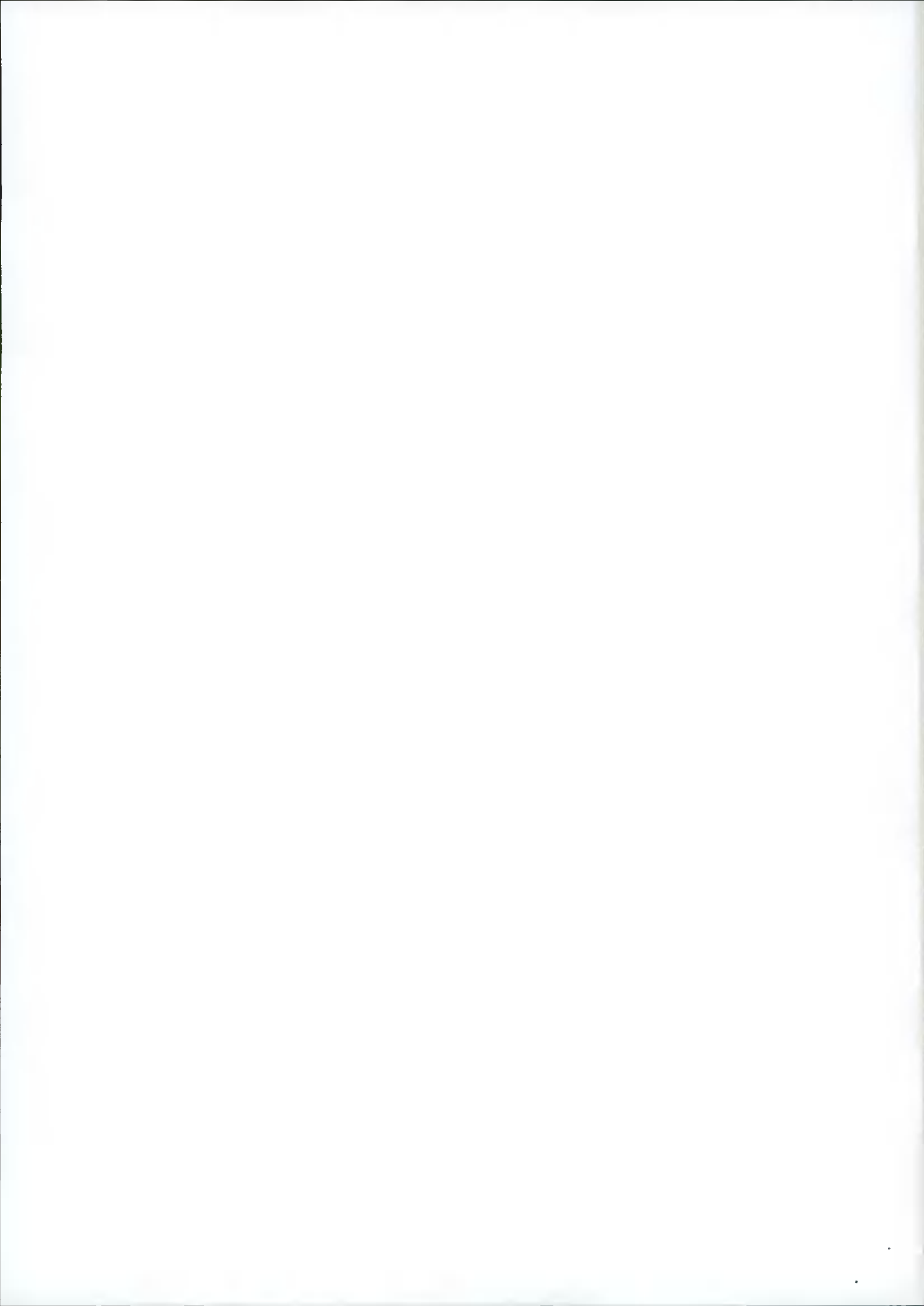
External plant installations adjacent to the building include sprinkler water tanks with their associated pump houses and a screened back-up generator farm to the rear of the building.

The gas power generating buildings to the south west are set back from the site boundary and landscaped berm within the site.

The arrangement of buildings and structures is intended to break-up and soften the visual impact of the development.

The Data Hall parapet is 12.720m above ground floor level. The power generation buildings are 13.005m above ground floor slab with the highest point being escape stairwells from roof where the parapet rises to 14.130m above ground floor. These parapet levels include screening of roof plant, as elevated viewpoints such as the Grand Canal banks are taken into account. Generator compounds at ground level are also fully screened. Generator flues rise to 25m in height.

The site elevations shown above illustrate the result of keeping a low profile and integrating the building within the extensive landscaping



7. PHASING

The documents submitted to the local authority and on foot of which planning permission Register Reference SD 19A/0042 and ABP 305948 were granted in October 2020 indicated at that time, the overall landscaping master planning of the site. This planning permission includes building development in the south east quadrant of the site within an encompassing total perimeter landscaping of the entire site to be completed as part of the initial phase. This is shown on Kevin Fitzpatrick Landscape Architects drawing number 101 submitted with this planning application.

The current planning application Register Reference SD 21A/0042 builds upon the established planning permission with a proposed second phase of development. The buildings forming part of this application are located on the west side of the site. The proposal increases the extent and content of landscaping by providing additional east west landscaped green corridor and green walls to augment the perimeter landscaping previously permitted.

The master plan [drawing number P1.04 prepared by HJ Lyons Architects] and included with in SD 21A/0042 indicates a further phase of potential development in the north east quadrant of the site which would be contained within the masterplan for landscaping already identified.

By handling the landscaping in this manner all landscaping on boundary with public and private realm would be completed at an early stage.

The approach to phasing is indicated on site concept drawing shown above, Diagram 2.

