APPENDIX 4.1
REVISED ARCHITECTURAL DESIGN STATEMENT

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Herbata Data Centre Campus, Naas, Co. Kildare

22217-RKD-XX-XX-RP-A-0001
Revised Architectural Design Statement

Purpose of issue: Issued for Further Information
Revision: P07

May 2025

Contents

1.0 Introduction

This updated Architectural Design Statement (ADS) has been prepared by RKD Architects as part of the response to the Request of Further Information from Kildare County Council. It is intended to be read as a revision to the Architectural Design Statement submitted as part of the planning application 24/60787 in August 2024.

This revised document highlights (in red text) the proposed amendments to the initial planning submission Architectural Design Statement following the initial statutory consultation period.

The following report describes the architectural rationale of the Herbata Data Centre Campus, to be constructed on lands at Halverstown, Jigginstown, and Newhall, Naas, County Kildare which comprises of:

- 6 no. two storey data centre buildings
- an administration / management building
- car parking
- landscaping
- gas and diesel storage and gas turbines
- energy storage
- and other associated works.

The overall red line boundary comprises c37.5 ha for the planning application. The subject site currently consists of agricultural lands, residential houses & agricultural buildings to the west of the M7 and Naas town. This does not include an associated electricity grid substation compound which forms part of a separate Strategic Infrastructure Development (SID) application (3.15 ha).

The current site use is a greenfield site and is currently used as agricultural land. It is bounded to the south by the M7 Business Park, to the east by the M7, to the north by Osberstown Business Park and to the west by agricultural & residential lands.

The development will include loading bays at each data centre for deliveries, 210 no. car parking spaces, bicycle shelters serving 104 no. spaces, smoke shelters, internal access roads & footpaths, vehicular & pedestrian access from the R409 and upgrade of R409 to include dedicated pedestrian and cycle infrastructure and a bus stop, as well as all associated site development works, services provision, drainage works including attenuation, landscape & boundary treatment works including berming, hedgerow protection areas and security fencing.

Each of the 6 no. Data Centres follow a template design with a total area and height as follows:

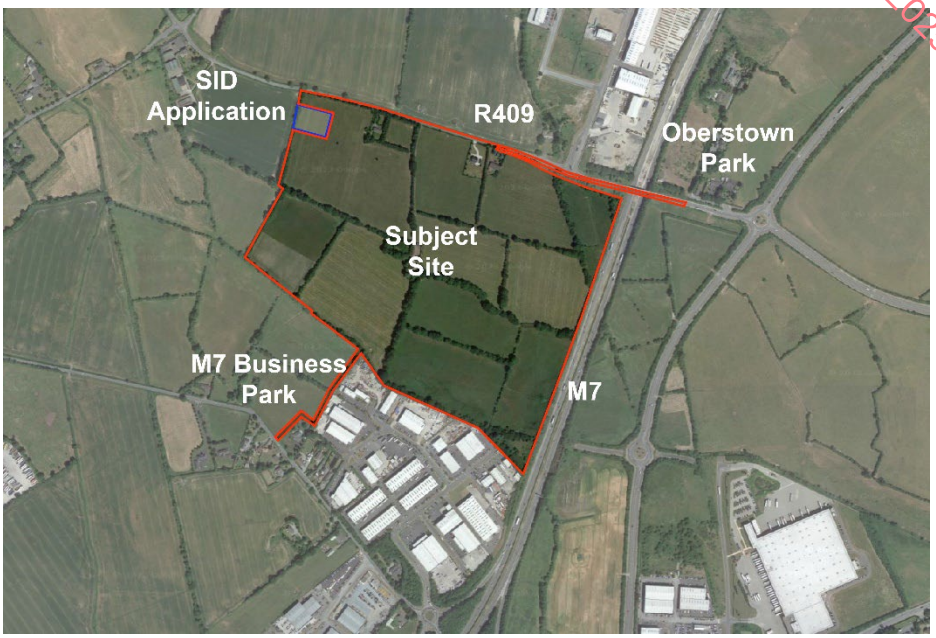
- Total area per Data Centre Type A, B & C: 27,261 sqm
- Total area per Data Centre Type D: 16,188 sqm
- Height at Data Hall parapet level: 18m
- Height of flues over External Plant Yard: 19m.

The main access to the site will be from the R409, with a secondary emergency access point from the M7 Business Park to the south of the site.

2.0 Site & Surrounding Areas

2.1 Existing Site Location

Picture 01 | Site Context



The subject site is located within Jigginstown, Halverstown and Newhall outside of Naas, Co. Kildare.

There are 3 no. existing houses and 5 no. farm buildings located on the site that are to be demolished as part of the proposed works. To the north and south of the site, the lands are mainly used for commercial/industrial purposes (M7 Business Park & Osberstown Business Park) and agricultural uses.

A 2-storey house and farm buildings are located approx. 200m to the west of the site, whilst some bungalow and 2 storey houses are located approx. 250m to the south of the site. There is a bungalow immediately to the north of the site, across the R409.

According to the National Monument Service, a Fulacht Fia (an ancient Irish cooking pit) is located on the south-east part of the site. A second archaeological feature identified by geophysical survey is located on the east area of the site. The exact location of these areas are marked on all proposed site plans.

Picture 02 | View of existing site from Google Streetview – Image 01 on Key Plan.

Picture 03 | View of existing site from Google Streetview – Image 02 on Key Plan.

Picture 04 | View of existing site from Google Streetview – Image 03 on Key Plan.

Picture 05 | Aerial view of existing site – Image 04 on Key Plan.

Picture 06 | Key Plan of site showing location of street views.

2.2 Site Zoning

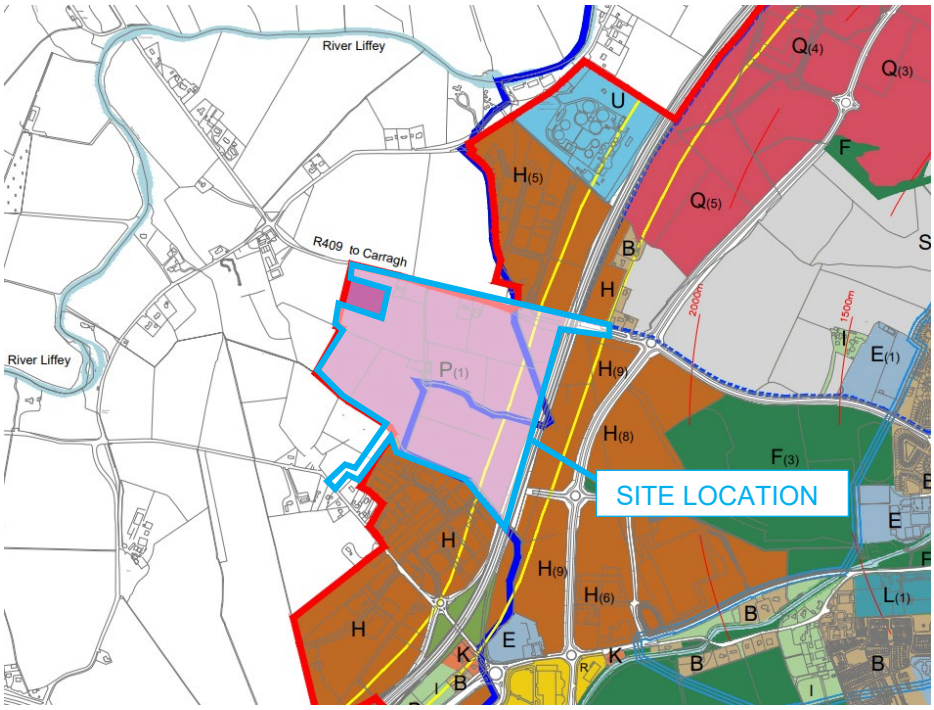
It is Government Policy as set out in the National Planning Framework and the Government Statement on "The Role of Data Centres in Ireland" to promote Ireland as a sustainable international destination for Information Communications Technology (ICT) infrastructure such as Data Centres. Within Naas, 2 sites have been designated for the development of Data Centres and *'The Council will not consider any alternative use on these lands, other than those associated with Data Centres (Objective EDO 1.12)'*. The subject site (as shown in the zoning map below) is one of these allocated sites.

Both the Kildare County Development Plan (2023-2029) and the Naas LAP acknowledge the necessary development of Data Centres within Kildare and their importance in terms of employment and economic opportunities.

The proposed development accords with the land use zoning set out in the Naas Local Area Plan 2021 -2027 ("Naas LAP") and will deliver local employment and anchor the ICT sector more firmly within Naas and the Greater Dublin Area more generally.

Picture 07 | Extract from Naas Local Area Plan (2021 – 2027): Land Use Zoning Map.

Site location marked in red by authors of this report.



Naas Local Area Plan (2021-2027) Legend:

Picture 08 | Extract from Naas Local Area Plan (2021 – 2027): Section 11.1 – Land Use Zoning Objectives

P: Data Centre(C7)

Ref.	Land Use	Land-Use Zoning Objectives
P	Data Centre	To provide for Data Centre development and their associated infrastructure only.

Within the KCC Development Plan, Chapter 7 states *'Where data centre developments are approved in the County, the Council will expect district heating systems to be developed for adjoining residential, community and/or commercial developments.'* A portion of the site has been allocated to house any required district heating infrastructure which will connect back to the surrounding area for future energy requirements. For full details, see HDR's District Heating Report.

2.3 Site Constraints

There are a number of existing conditions on-site which have been precisely analysed and that have shaped the proposed design approach.

- Existing hedgerows
  As the site has been used previously for agricultural uses, many hedgerows divide the site. These will be retained where possible, particularly on the external boundaries of the subject site to aid in screening and help promote biodiversity on-site.

- Fulacht Fia
  According to the National Monument Service, a Fulacht Fia (an ancient Irish cooking pit) is located on the south-east part of the site. It has been identified and recorded with the reference number KD019-028. There is no obvious visible trace of it but remains still exist underground. Its approximate location is highlighted on all proposed site plans.

- Archaeological findings
  An archaeological feature identified by geophysical survey is located on the east area of the site. The proposed site plans identify the approximate location of this feature. The masterplan is designed to avoid disruptions to this area. See Addendum to Chapter 10 Cultural Heritage for further details.

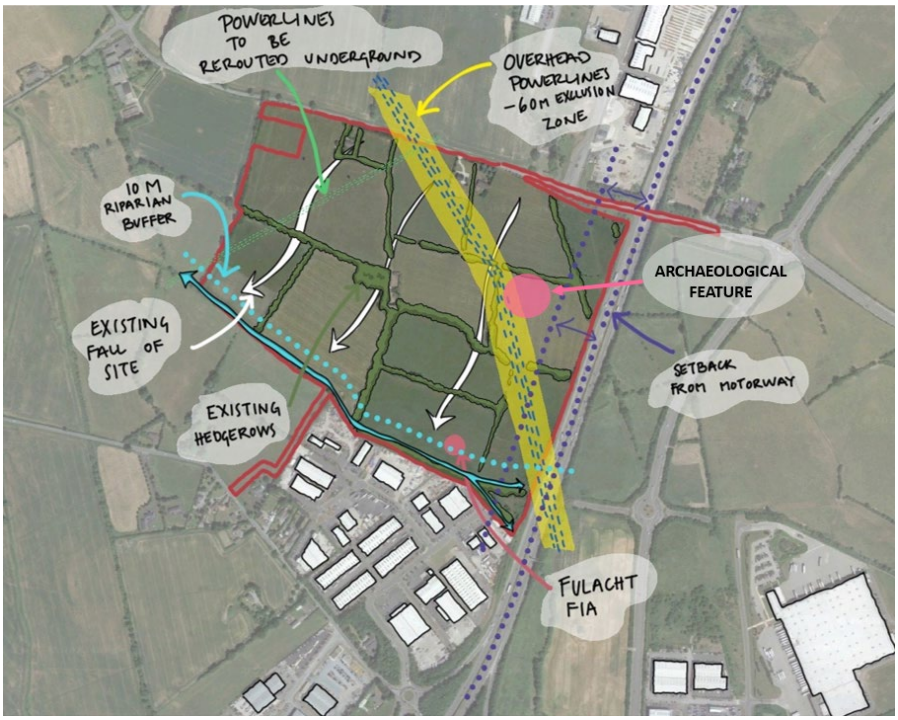
- Bluebell Stream
  A stream is located to the south of the site, with many existing trees and shrubs located there as well. A 10m riparian buffer is proposed to ensure the preservation of the ecology within this site and to maintain green and blue corridors. A bridge is needed in the southeast corner where emergency access to the site is proposed through the M7 Business Park as this connects over the stream.

- Motorway
  The M7 motorway runs along the eastern boundary of the site. Existing hedgerows along this boundary are to be maintained and additional trees & shrubbery are proposed. This is to help maintain a visual and noise buffer, and to allow for any potential expansion of the motorway.

- 220kv Overhead power lines
  There is a 60m wide exclusion zone underneath the overhead power lines that traverse the site. No buildings are to be developed underneath these power lines.

- 110kv Overhead power lines
  To the northern corner of the site, 110kv powerlines are to be rerouted underground to allow for the development of an electricity grid substation compound on site. The proposed substation and partial undergrounding of EirGrid's 110kV overhead lines will be subject of a separate SID planning application to An Bord Pleanála as it involves changes to electricity transmission.

- Existing Site Levels
  The existing site levels differ by approx. 6m between the levels along the northern boundary (84 O.D) and levels along the sourthern boundary (78 O.D). The arrangement and orientation of all proposed buildings are as such to minimise the amount of cut and fill within the site.



Picture 09 | Concept Sketch showing the existing site constraints.

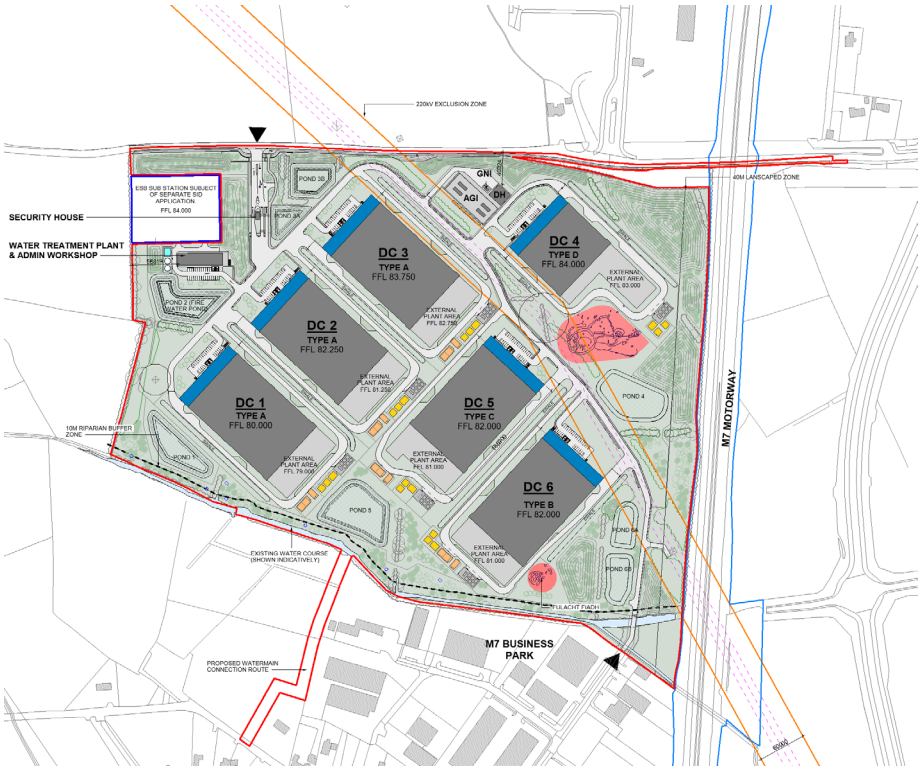
3.0 Concept Ideas

3.1 Site Strategy – Masterplan

The masterplan design seeks to develop a high-quality data centre campus with site strategies to allow the development to integrate sympathetically into its surroundings and create a positive and carefully designed site layout. There is a high priority to retain the existing biodiversity throughout the site and to minimise visual impacts where possible on the site boundaries through planting.

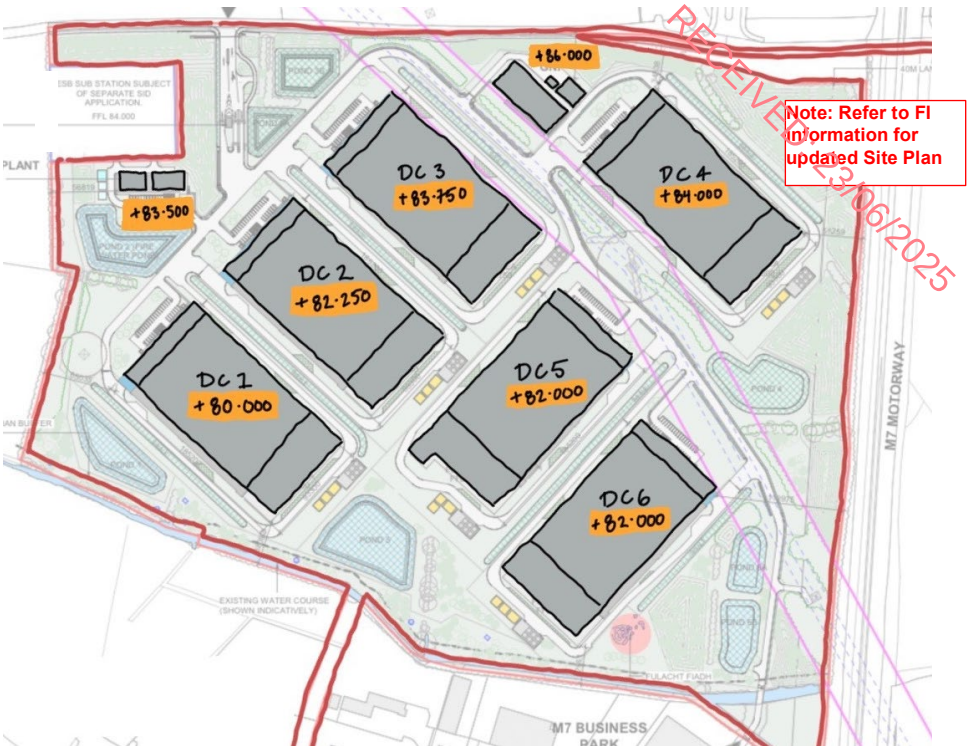
Picture 10 | Proposed Site Plan

- **See 22217-RKD-ZZ-ZZ-DR-A-1010 for further details.**



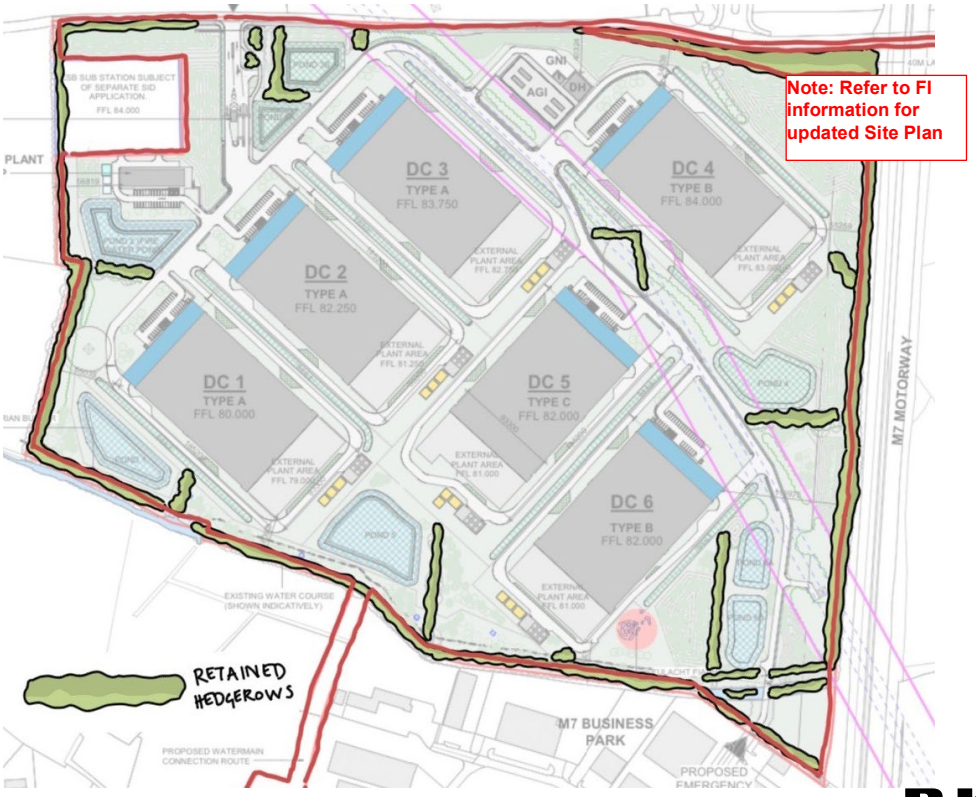
All buildings on site are stepped from north to south to follow the existing site levels. This allows for minimum cut and fill within the site. The cut from the attenuation ponds and foundations will be reused for the berms with allow for shielding of the DC buildings from the R409 and M7.

Picture 11 | Sketch Site Plan showing proposed levels.



The orientation of the DC buildings, location of attenuation ponds and entrance points to the site have been chosen to retain as much of the existing hedgerows as possible. The location of the Bluebell Stream along the south boundary of the site means a 10m riparian buffer will retain the existing hedgerows along this boundary and protect any existing biodiversity. Given the scale of the development, much of the existing hedgerows have needed to be removed but these have been supplemented by new planting throughout the site. The planting that is proposed has been arranged in such a way as to shield as much of the massing of the DCs as possible from the M7 and the R409. For further detail on the planting strategy, see the Landscape Statement.

Picture 12 | Proposed Site Plan showing retained hedgerows.



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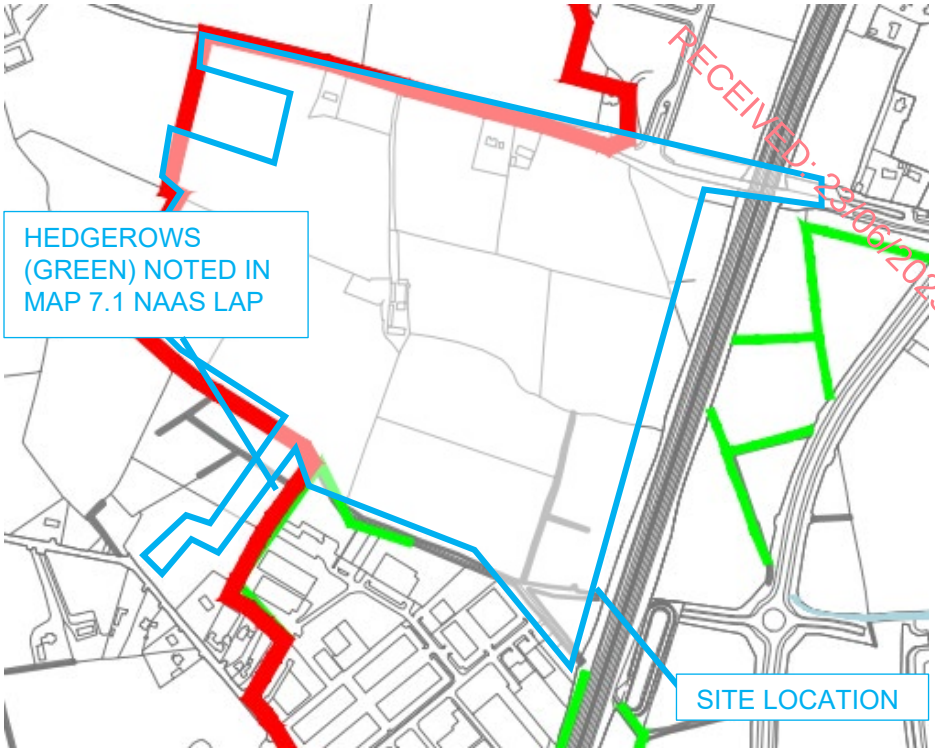
Picture 13 | Excerpt from Naas LAP Green Infrastructure Map (Map Ref 7.1)

Site location marked in red by authors of this report.



The protection of the environment is a key principle of the Naas LAP. A number of the objectives regarding green infrastructure will guide the proposed development including: *"NE 2.2 Protect trees and woodlands of particular amenity value, identified in the Naas Green Infrastructure Map (Map 7.1), from damage and/or degradation."* The protected hedgerows indicated in Map 7.1 (see above) of the Naas LAP will not be impacted by the proposed development.

There are 2 overhead powerlines that cross the site. The 110kv powerline that crosses the northern end of the site will be rerouted underground as part of the separate SID application. However, the 220kv powerline that crosses from the north to south-east of the site will remain in place. This has a 60m wide exclusion zone beneath the powerlines and this means that no buildings can be proposed in this area. DC 3, DC 4 and the AGI building all straddle this with only internal roads proposed in the zone. The road in this location acts a central artery that serves these buildings.

The proposed development provides for a setback of the building line of approximately 51m from the motorway at DC 4's External Plant Yard. However, the actual building stands at approximately 77m from the site boundary. This is consistent with existing development in the area and fully protects potential development of the motorway network. This layout has been discussed with KCC Roads Planning Section, for further details please see RPS's Planning Report. The proposed landscaping measures include a 40m wide landscape buffer to minimise views of the proposed data centre from passing traffic on the motorway.

In terms of access to the site, all efforts have been made to provide for all modes of transportation for any staff or visitors. Primary access is assumed to be vehicular, with parking provided in front of each DC and at the Admin Workshop.

These include the required designated spaces and electric car charging points. Bicycle parking is provided adjacent to the entrance of each DC with shower facilities and secure storage included in the Admin Block of each building. Finally, a new bus stop will be provided along the R409, with footpaths provided for pedestrians arriving to the site. Internal footpaths are provided throughout the site to encourage active modes of transport within the site and to protect pedestrians.

3.2 Enhancing the Public Realm

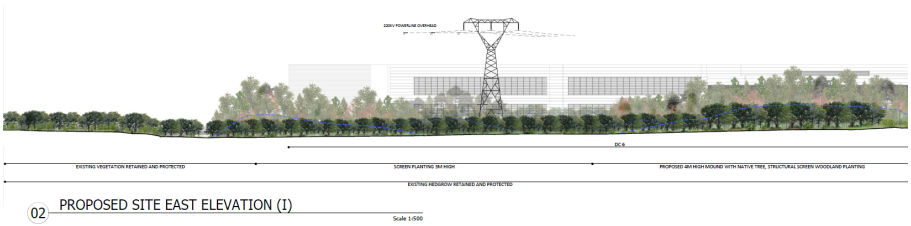
Kildare County Development Plan (2023-2029) Chapter 15.3, where a development requires a design statement, states the following details should be included:

'A demonstration of how the development adheres to the relevant provisions of the County Development Plan, including explicit reference to the Urban Design Standards Checklist, as outlined in Table 14.2.'

The masterplan includes a landscape strategy that creates an attractive site layout using landscaping such as planting, ponds and berming. While existing tree and hedgerow removals will be required to facilitate the development of this zoned land, careful attention has been placed on retaining vegetation where possible and providing new planting. The retention and enhancement of key existing vegetation will ensure that the site maintains a green edge whilst containing views towards the proposed development. Retained vegetation within the site along with new proposed tree planting will aid in framing the proposed built form within a naturalistic setting forming a juxtaposition between the industrial forms of the data centres and their natural surroundings.

Picture 14 | Proposed East elevation along the M7.

For further elevations, see BSM-ZZ-ZZ-DR-L-0405.



The Naas LAP has zoned the subject site *'to provide for Data Centre development and their infrastructure only.'* (Naas Local Area Plan 2021-2027). A secure site boundary is required in developments such as data centres to protect their valuable contents. A 2.4m high palisade fencing is proposed and has been offset from the site boundaries. This is set behind proposed planting to create the appearance of openness from the site context.

Utmost care has been taken to the internal layout of the site, with landscaping and pedestrian footpaths used to create an enticing public realm within this secure boundary.

3.3 Sustainability Strategy

Herbata Data Centre Campus has ambitious sustainability goals and is committed to incorporating green building and urban design principles into the design of the campus. The following sustainability strategies have been integrated:

Site Layout

- There is a long-term landscaping framework that softens the built environment including site boundary screening enhancement & promotion of biodiversity potential throughout the scheme.
- Retention of existing hedgerows along site boundaries that will be augmented with new planting. Hedgerows through the site will be retained where possible and new planting is proposed throughout the site.
- A landscape & SUDS strategy with a focus on nature-based SUDS and incorporating measures such as retention ponds, berming and swales. These will also provide screening for data centres.
- The Bluebell Stream runs along the southern boundary of the site and a minimum 10m riparian buffer is proposed to protect the existing biodiversity located here.
- Ecological enhancements such as bat boxes and houses along with significant habitat creation from woodland planting to wildflower meadows will ensure the site maintains its biodiversity for local wildlife.
- Ancillary buildings such as the Admin Workshop/Water Treatment Plant & Security Hub will incorporate green roofs and where possible, grasscrete paving will be used rather than asphalt.

Building Design

- Building designs include energy efficient envelope, green/blue roofs, and roof top PV panels.
- Use of recycled steel where possible in the structural materials.
- Any concrete that is used throughout the site will include suitable levels of GGBS and pulverised fuel ash as replacements for Portland cements to reduce carbon emissions.

Energy Production

- Herbata will be a non-power grid dependant Data Centre Campus utilising renewable, efficient technologies to support an IT load of 180MW. Every building utilises highly efficient cooling systems using direct air and exhaust arrangements for each building topped up with adiabatic elements for peak summer conditions.
- There are two forms of water storage for each data centre building. Firstly, there is a minimum of 1 year water storage is provided on site for the adiabatic cooling top-up and storage top-up from on-site ponds if required. Secondly for the steam system associated with the Closed Cycle Gas Turbines there is a separate rainwater harvesting storage from 50% of the roof area to maintain the top-up water for each steam system. In addition, a highly efficient surface water management design

mitigates rain run off combined with rain harvesting, to ensure minimal water wastage on site.

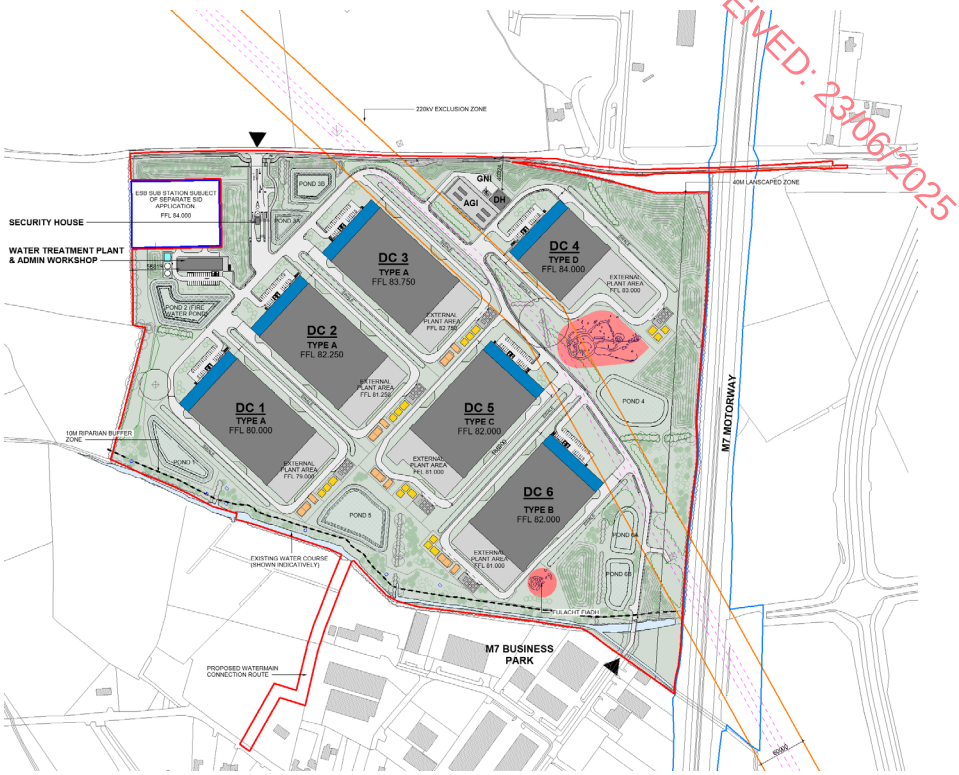
- Waste heat from the gas turbine flue stacks can be made available at high temperatures for a local district heating system. This will aid the decarbonisation of future developments in the local area.
- 20kWp PV panels will be located on the roof of each Data Centre, to further aid on site energy production.
- To meet Kildare County Council's policy of a minimum of 30% of the operational energy being sourced from renewable sources, using Commercial Power Purchase Agreements (CPPAs) from wind and solar farm projects located within Ireland, supplemented by using on-site solar arrays. Please see Response to Further Information Report prepared by RPS for further detail.

Transportation

- EV charging for 30% of the parking allocation.
- Bike shelters provided throughout the site and shower/changing facilities for those arriving by bicycle or foot.

These measures have been put in place to ensure that a holistic approach to sustainability and resilience is integrated. Herbata Limited hopes to become a leader in green energy data design through this development.

4.0 Proposed Site Plan



Picture 15 | Proposed Site Plan

- See 22217-RKD-ZZ-ZZ-DR-A-1010 for further details.

The vehicular and pedestrian site entrance is located in the north corner of the site. The entrance location has been chosen to ensure adequate sight lines can be achieved for all traffic leaving the complex. A new entrance will need to be made in the existing hedgerows to allow for this. Given the scale of the site, prominent stone wall and signage is proposed along the R409 to mark the entrance. For further details, see doc. 22217-RKD-ZZ-ZZ-DR-A-1401.

Picture 16 | CGI of Entrance from R409

Vehicles, pedestrians and cyclists will arrive through a secure sliding gate. A 2.4m high palisade fencing surrounds the site and has been offset from the site boundaries. Careful consideration has been given to choose fencing that is subtle and sympathetic to the surrounding locality. Most fencing will be hidden

by existing and proposed planting, to help maintain the appearance of openness whilst assuring protection for the valuable contents within the development.

An internal access road with separate pedestrian footpath, provides a safe and uncomplicated access to the necessary buildings. An emergency entrance is located to the south of the site entered through the M7 Business Park.

A carpark is located to the front of the DC building for all visitors and staff arriving by car. The rear of each data centre will be for HGV's & service vehicles only.

Pedestrians and cyclists will also follow these roads to enter the data centre. Footpaths will be provided, and bicycle shelters will be located adjacent to the entrance of each data centre.

Please refer to Chapter 7.0 for more detailed description.

The existing site levels differ by approx. 6m between the levels along the northern boundary (84 O.D) and levels along the sourthern boundary (78 O.D). The proposed site plan looks to step the data centres in line with the existing site levels & contours, and to minmise the cut & fill of existing soil.

An external plant yard to the rear of each data centre will be dropped by 1m to accommodate the height of machinery.

Each proposed data centre building has a regular rectangular shape with the admin block located to the front, data hall in the middle and external plant yard to the rear. The layout of each data centre is the same however, 3 data centres are mirrored to accomodate the location of the loading bays throughout the site. They have been separated into 4 types – A, B, C and D. Data Centre Type D has a smaller footprint and a L-shape external plant yard to the rear, to avoid the exclusion zone of the archaeoligcal findings.

Data Centre Number	Data Centre Type
DC 1	TYPE A
DC 2	
DC 3	
DC 4	TYPE D
DC 5	TYPE C
DC 6	TYPE B

The mirroring of the Data Centres was chosen to hide the work that is done in the loading bays of each building (typically back of house work). As visitors travel through the site, their approach to the buildings will only show the front of each building, screening them from the loading bays.

The Admin Block, where the main entrance to each facility is located, overlooks the car park for each building. The bike shelter is adjacent to the building entrance, with a smoke shelter on the oppisite side. The building entrance is

highlighted through coloured tiles that will stand out against the grey cladding on the remainder of the building. For full details on building elevations, see Chapter 8.

Access to the data hall and external plant yard will be through the admin block for security reasons.

Loading bays are dropped 1.2m from the finished floor level to allow for deliveries, with space for 2 no. HGV loading bays.

A Fuel Compound, a Sprinkler Tank Compound and a Condenser Compound are located to the rear of each Data Centre. Meanwhile, a Hydrant Pump Room and 2 no. Hydrant Pump Room Storage Tanks are located adjacent to the Water Treatment Plant and Admin Workshop.

Onsite power generation will be produced through a combination of gas turbines and gas engines. The onsite generation will be supplied by gas from Gas Networks Ireland (GNI) transmission infrastructure via a pressure reduction station or AGI (Above Ground Installation) that is located to the north of the site. This area also includes a second District Heating building, where waste heat from the gas turbine flue stacks can be made available at high temperatures for a local district heating system. This will aid the decarbonisation of future developments in the local area. For further details, see HDR's District Heating Report.

At the entrance to the site, as part of a separate SID application, will be an electricity grid substation compound. Initially, power on site will be provided through an Eirgrid Autoproducer connection, with the installation of a GIS grid substation required for this. Planting and berming will surround the substation to aid screening of this on site and from the R409. Access to the substation will be onsite, behind the Water Treatment Plant and Admin Workshop.

Landscaping will include the retention of existing hedgerows and trees where possible. Along the north and east site boundaries, 3-6m mounds are proposed with native woodland planting to aid screening of the site from the roads.

The overall surface water drainage strategy for the site is described in the Engineering Report. Several attenuation ponds of varying sizes are proposed throughout the site, which will be landscaped around their edges.

4.1 Site Phasing

Given the scale of the proposal, site phasing is proposed for the construction of the data centres and ancillary buildings.

Existing trees/hedgerows that are to be retained will be protected in accordance with BS 5837:2012, Trees in relation to design, demolition & construction. Prior to the commencement of any work, or any materials being brought on site, existing trees to be retained are to be protected with temporary fencing. These shall be maintained in good and effective condition until the work is completed. The protective fencing is to coincide, as far as is practical, with the root protection area (RPA), unless otherwise agreed. All weather notices shall be securely fixed to the fence words such as 'construction exclusion zone - no access'. Please refer drawing BSM-ZZ-ZZ-DR-L-0211-0214.

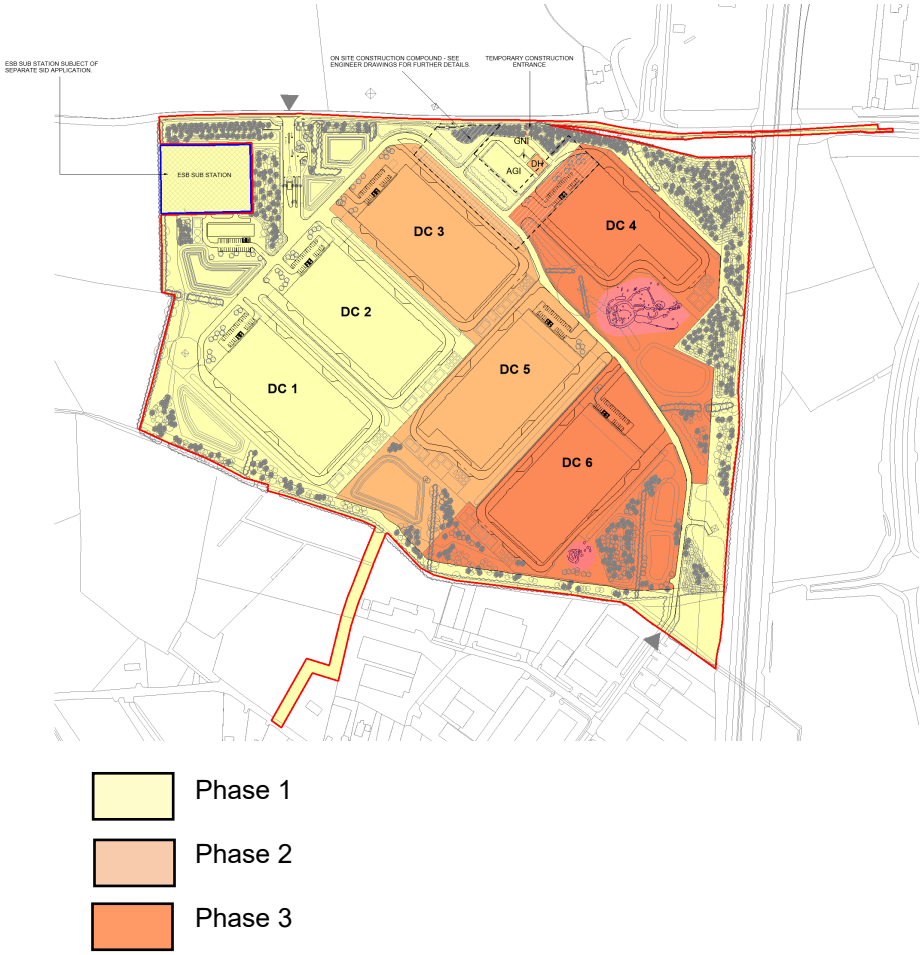
Phase 1 includes Data Centre 1 & 2, the AGI compound, Admin Workshop, Water Treatment Plant, Security House and the main road network through the site. It also includes Pond 1, 2, 3A & 3B and landscaping surrounding DC 1 & 2, AGI compound and planting along the boundaries of the site.

The electricity grid substation compound located in the north of the site and partial undergrounding of EirGrid's 110kV overhead lines will be subject of a separate Strategic Infrastructure Development (SID) planning application to An Bord Pleanála as it involves changes to electricity transmission. This is to be completed in Phase 1 as well.

Phase 2 will include the construction of Data Centre 3 & 5 and 2 no. District Heating buildings. It also includes the landscaping surrounding DC 3 & 5 and their roads. Pond 5 will also be constructed at this phase.

Finally, Phase 3 will include Data Centre 4 & 6, their roads and surrounding landscaping. It will also include ponds 4, 6A and 6B.

Picture 17 | Site Phasing Plan



5.0 Landscaping

This description covers the main points of the landscape proposal. Please refer to the Landscape Statement for detailed description.

The landscape design has been prepared by a qualified landscape architect who will also supervise the implementation of all works relevant to the landscape design. Construction phasing will be structured where possible to allow the early completion of landscape areas facilitating the establishment of planting and screening, ensuring the early establishment of the overall site. The landscape masterplan seeks to develop a high-quality data campus and native environment for the proposed new development. It places a high priority on biodiversity and sustainable water management at the Jigginstown Lands. The majority of the perimeter boundary hedgerows and tree lines are respected, strengthened and bolstered, encompassing the campus in a native woodland perimeter.

There are several natural features on the site, including existing hedgerows and trees which will be retained where possible. The Bluebell Stream runs along the south of the site, along with existing shrubbery & trees and a 10 m riparian buffer zone is proposed here to protect the existing ecology.

A minimum 40m landscaped zone is proposed along the eastern boundary to aid in screening the development from the M7 Motorway. To block views from the motorway, several high mounds are proposed ranging from 2-4 m in height. These will have native woodland planting to act as visual and noise buffers from the motorway.

Bat Houses and Boxes are proposed throughout the site to protect and preserve existing bat populations in the area. The site will operate as a ‘Dark Site’ where minimal lighting is only used when required to not disturb any wildlife on the site.

Picture 18 | Landscaping Masterplan

– see BSM-ZZ-ZZ-DR-L-0301

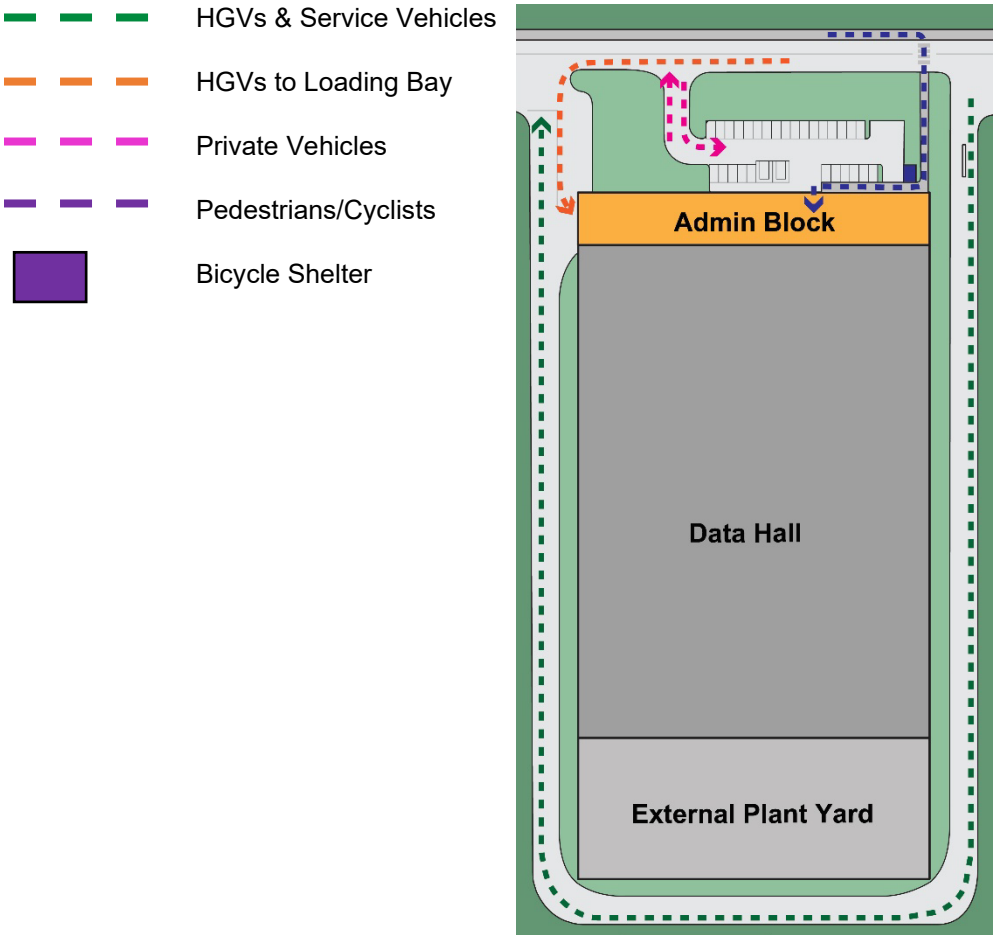
6.0 Transport & Access

6.1 Site Access

All access for vehicles, HGV's, cyclists and pedestrians occurs at northern point of the site. A proposed stone wall entrance will be designed to mark the entrance point to the site from the R409. This includes a 2.4m high sliding gate.

Upon entry to the site, visitors and staff will meet guards at a Security Hub which has an additional gate and rejection hammerhead junction. Those who are not given permission to enter the site will then leave through the site security gate. An internal access road and footpath will continue into the site. Access to each Data Centre is shown in the diagram below.

Picture 19 | Traffic Management Diagram



To the front of each Data Centre 2 roads are proposed for the separation of private cars and HGVs for safety reasons. A carpark is provided to the front of each data centre for those arriving via car. A rear access road is included for access to HVO compound. Rear access roads have been designed as single direction – traffic will be managed via signage. Refer to Traffic Impact Assessment for further details.

The area of the delivery yard & loading bay has been designed to facilitate the vehicles to turn back and exit via the dedicated gate.

Dedicated footpaths following the internal access roads will be provided for all pedestrians and cyclists will also follow these roads to enter the data centre campus. Appropriate signage will be provided throughout.

Shower and changing facilities are provided in each data centre along with secure storage for personal belongings.

An emergency entrance is located to the south of the site entered through the M7 Business Park.

6.2 Parking Spaces

Parking spaces have been provided to the front of each Data Centre. Each data centre provides 30 no. parking spaces, 2 of which are designated spaces and 9 are electric car charging points.

At the Admin Workshop and Water Treatment Plant area, 30 no. parking spaces have been provided, 2 of which are designated spaces and 9 are electric car charging points.

In total, the site will provide 210 no. car spaces – 14 will be designated car parking (5% minimum) and 63 will be electric car charging points (30%). Additional ducting is provided for electric car charging as per TM0118.

Bicycle shelters will be located in the vicinity of each data centre and at the Admin Workshop Area. A total of 104 no. bicycle parking spaces are provided throughout the site:

— 16 adjacent to the entrance of each Data Centre
— 8 adjacent to the entrance of the Admin Workshop.

6.3 Security Strategy

The site access points are limited to 2 no. secure vehicular gates. The main access point will be to the north of the site, whilst a second access point to the south (accessed via the M7 Business Park) will be used in emergencies only.

The boundaries of the site will incorporate existing hedgerows and trees where possible, with newly planted high mounds and trees/shrubbery for the remaining. Existing hedgerows will be augmented by additional planting. To the inside of this planting, a high-quality palisade security fence, approx. 2.4m in height and black in colour, surrounds the site and segregates the individual plots of each Data Centre. Timber post and wire fencing runs along the riparian

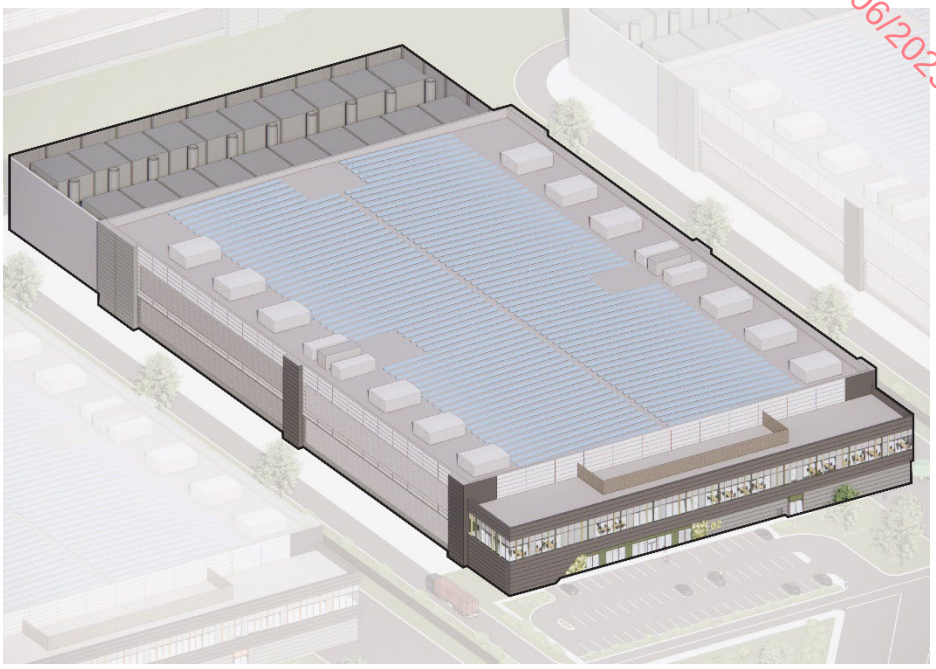
boundary to the bluebell stream to prevent any livestock from entering the site. For further details refer to doc. 22217-RKD-ZZ-ZZ-DR-A-1400.

The data halls are proposed to be accessible 24 hours a day for maintenance and service vehicles. The office building will be accessible also 24hrs however the standard working hours will be 8am-6pm.

7.0 Design & Layout

There is a template layout for each data centre that is repeated throughout the 6 data centres. Each data centre has a 2-storey admin block, data hall and external plant yard.

Picture 20 | Diagram of Data Centre



The external dimensions are approximately (including the external plant yard and to the widest point of the data hall facade) 184m x 91m. The façade along the data hall steps out, with changes in the colour of materials as well to help break up the massing.

The total areas for the separate components of each building are as follows:

DC Types A, B and C:

- Admin Block: 2,505 sqm
- Data Hall: 24,756 sqm
- External Plant Yard: 6,164 sqm
- Total Area: 27,261 sqm

DC Type D:

- Admin Block: 2,505 sqm
- Data Hall: 13,683 sqm
- External Plant Yard: 6,065 sqm
- Total Area: 16,188 sqm

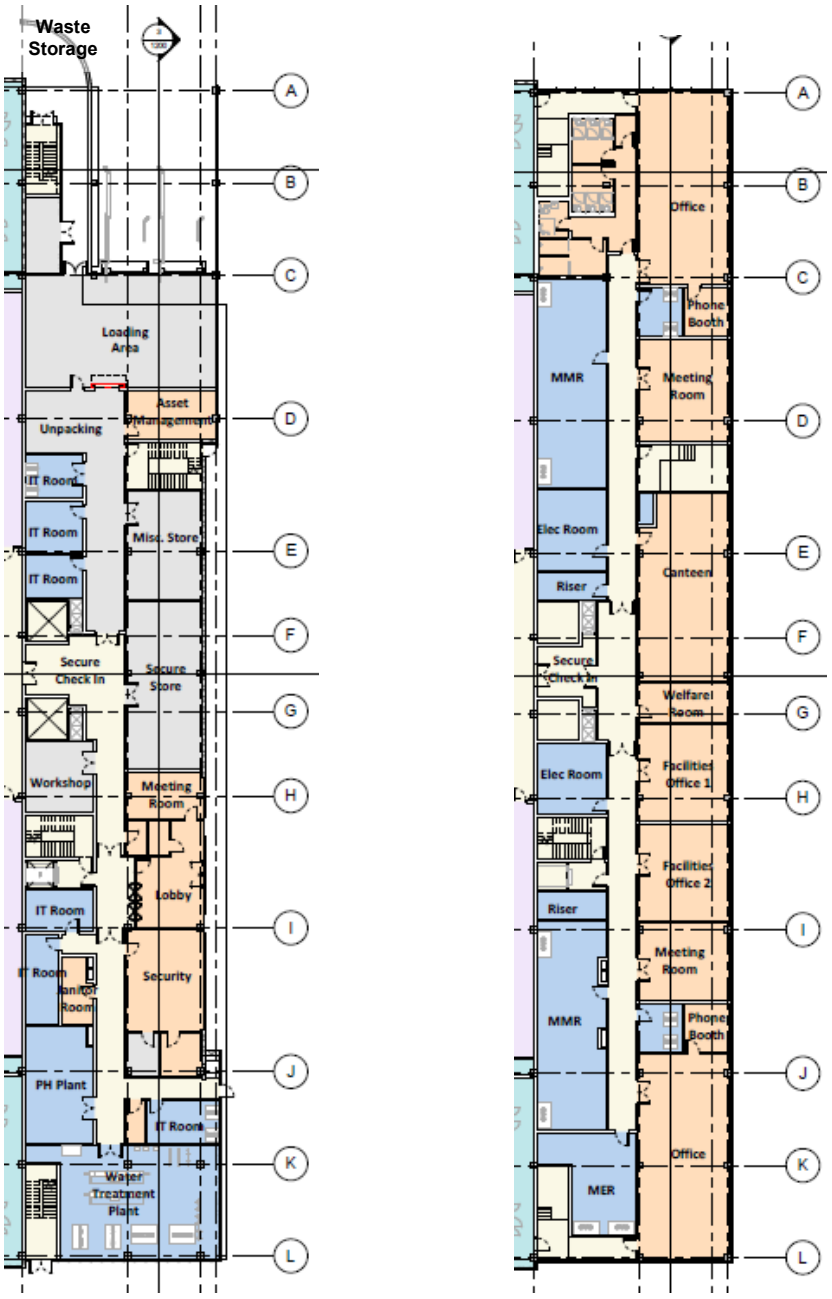
The data centre will provide services to one tenant per building, who will have an opportunity, along with renting of the data services, to rent an ancillary office space, so that their personnel can be permanently on site. This is an important characteristic of this facility and impacts the design in many aspects, mainly the office block layout design and size.

The front of the building is occupied by a 2-storey office block, known as the Admin Block. This block is approx. 90m x 15m. It provides the following services:

- Building entrance leading to the entrance lobby with security room and accessible toilet, guest conference room and 2 no. passages and a mantrap lobby providing access to the secure side of the building.
- Shipping and receiving area on the ground floor which includes 2 no. loading docks with roller shutters and levelling plates, unloading area, office, and storage areas. Corridor in this area is 2.8m wide to accommodate the transport of goods into the data hall. This area is directly linked with the external delivery yard and waste compound.
- Secure check in area at ground floor for access to data hall. This includes 2 no. goods lifts to access first floor.
- Janitor room at ground floor and storage at first floor.
- Waste Storage room at ground floor with external access ramp.
- Plant rooms throughout ground floor and first floor.
- 2 no. Open Plan Offices, 2 no. Facilities Offices, Welfare Room, 2no. Meeting Rooms, Canteen and WC/Changing Facilities at first floor level.

Picture 21 and 22 |

Extract from Ground Floor GA Plan and First Floor GA Plan showing the Admin Block.



Access to the roof is provided through the main staircase and one of the goods lifts. This brings you to an enclosed plant area on the admin block roof that is occupied by AHU units and chillers for office block and internal plant rooms. 20kWp PV panels will cover the roof of the Data Hall, to aid in on-site energy production. The PV panels are located on the roof but sit below the parapet of the data hall, and so cannot be seen in the elevations of the data centres.

The Data Hall block, 2-storeys in height, houses 8 no. Data Halls in DC types A, B and C and 4 no. Data Halls in DC type D, along with supporting LV and MV panel rooms, Mechanical Corridors for AHU storage, Plenums and 4 no. escape stairs.

Access to the External Plant Yard is also through the Data Hall at ground and first floor. The External Plant Yard houses electrical equipment such as gas turbines and some plant rooms. There is also an escape stair located in the plant yard.

Upon entry to the site, the gates are manned from the Security Hub. This building houses a small office for 2 security personnel, a kitchenette, control panels area and an accessible WC.

An Admin Workshop is located to the north of the site and houses a workshop for any maintenance of plant required on site and storage for these. It also houses an office, kitchenette, WC & shower facilities, conference room, managers office and campus control room. Plant rooms and storage are also provided with the building.

There are multiple Ancillary Buildings throughout the site that are not inhabited such as the Sprinkler Pumphouse and District Heating buildings. These hold plant that is required on site.

All the data centre buildings have CCGTs (closed cycle gas turbines) in their external plant yards with waste heat boilers to feed steam turbines that are also connected back to the District Heating building proving a connect point to the district heating system. This will harness the waste heat associated with the data centre campus to serve the area to the west of Naas. The provision of district heating in the local area would bring many benefits to the local community and businesses by decarbonising the heating of buildings and by increasing local energy security at reduced cost to households, community facilities and businesses. See HDR's Energy Policy Compliance Report.

7.1 Building Height

Due to the size of the plant required within the Data Centres and that this layout incorporates a 2-storey data hall and admin block, these are large buildings, so careful consideration has been given to the scale and massing of the façade design, with the heights and materials of the sperate components of each building used to help break up the massing.

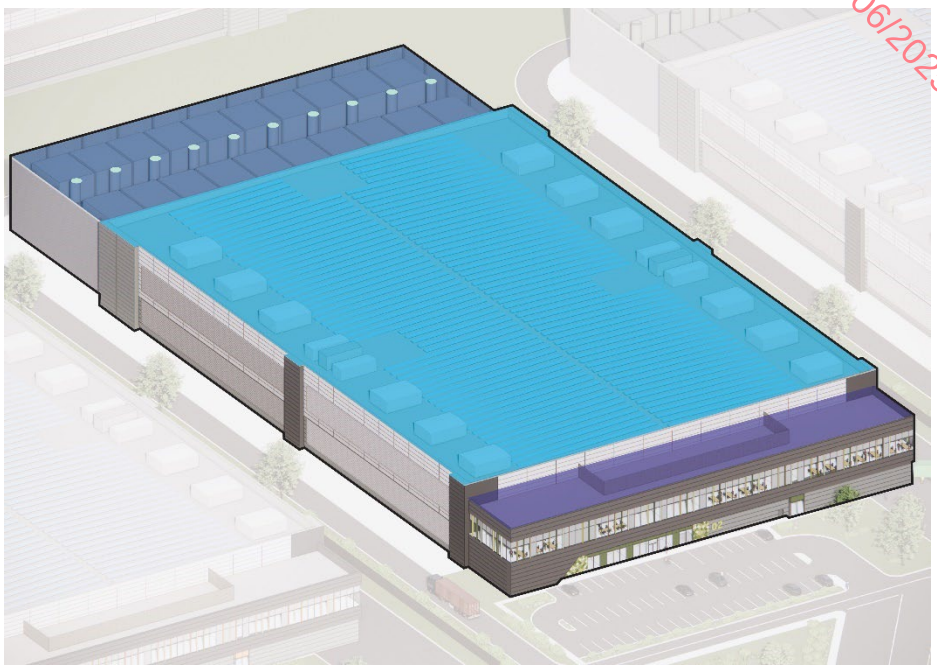
Each admin block, data hall and external plant yard are 2 storeys. The heights of the respective components above FFL are as follows:

— Admin Block: 15m
— Data Hall: 18m

— External Plant Yard: 18m

Some machinery and plant such as the gas turbine flues come up over the parapet of the External Plant Yard, totalling at a height of 19m above FFL.

Picture 23 | Building Height Diagram



Admin Block – 15m

Data Hall – 18m

External Plant Yard – 18m

Gas Turbine Flues – 19m

The height of all ancillary buildings throughout the site are as follows:

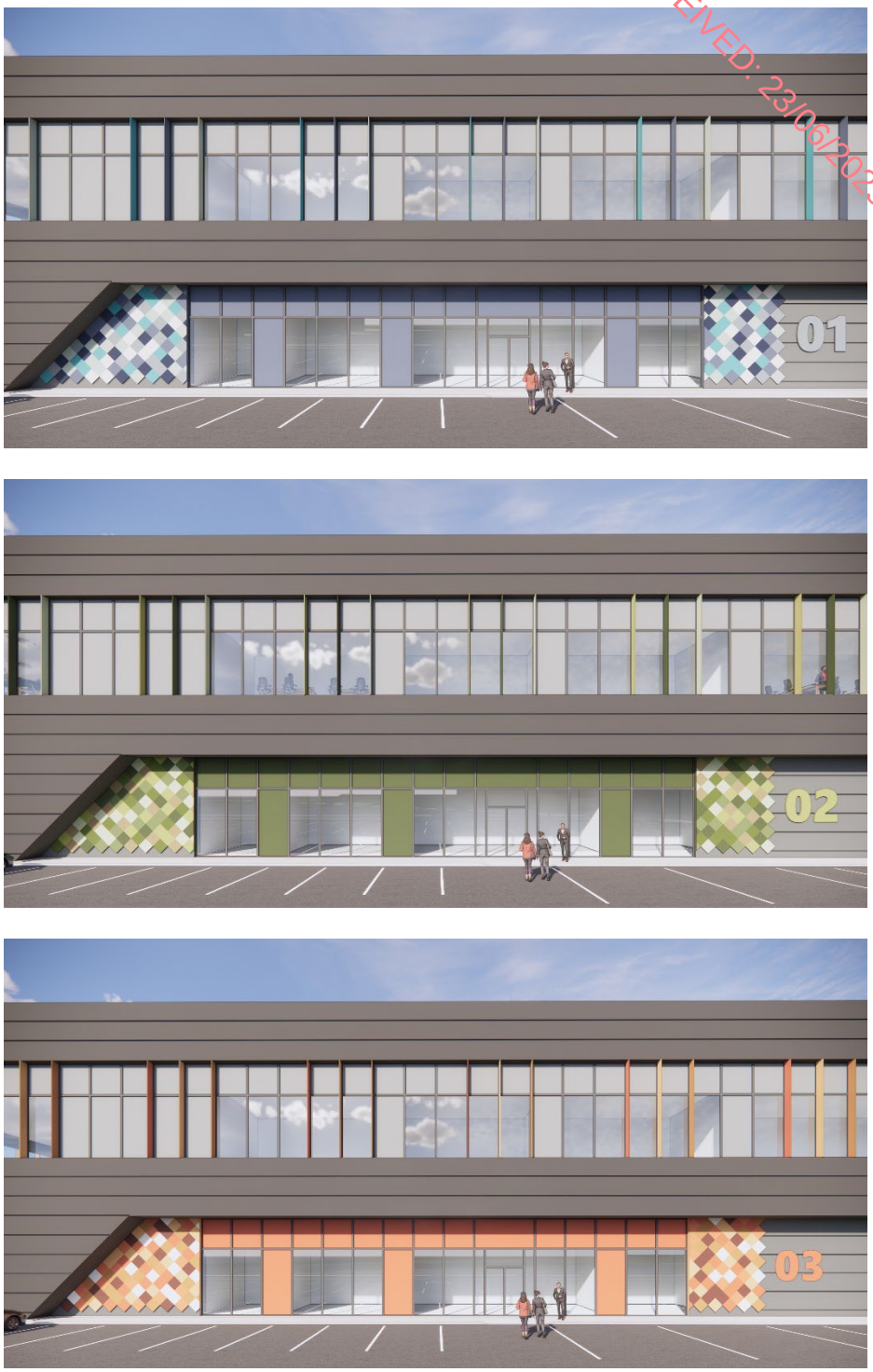
— Security Hub 4m
— Admin Workshop/ Water Treatment Plant 4.8m
— Substation (Part of separate SID Application) 15m
— District Heating Building 5m
— Hydrant Pump Room 5m

7.2 Elevation Design and Materials

The choice of materials and colours used throughout the building have been selected to create an attractive façade approach. The mass of the large volume of the Data Centre long elevations has been broken up by variations in the façade profile and the range of materials used.

Particular effort has gone into the design of the admin block, to create a visually appealing entrance to each building and use of colour to help with wayfinding throughout the site.

Picture 24 | CGIs of front façade of Data Centres



Given that the area of the first floor of the admin block is larger than the ground floor, the façade steps out to the front and over the loading bay to give a cantilevered appearance and to frame the entrance. The Admin Block is clad horizontally fixed, composite flat metal panels with mineral wool core, powder coated to a dark grey colour at first floor and light grey at ground floor.

An aluminium rainscreen system in selected colours arranged in a shingle tile mosaic effect surrounds the entrance to highlight this part of the façade. A range

of colours have been chosen for each data hall, taking inspiration from the surrounding context. Greens and blue from the surrounding sky and grasslands, whilst red, orange and yellows will reflect the changing leaves throughout the seasons of the year. Glazing is provided at first floor for all the main rooms such as open plan offices. These are decorated in vertical coloured metal fins (4.5m in height and 100mm depth) to help break up the façade along with spandrels to hide any parti walls and dropped ceilings. For full details, see doc. 22217-RKD-ZZ-ZZ-DR-A-1304.

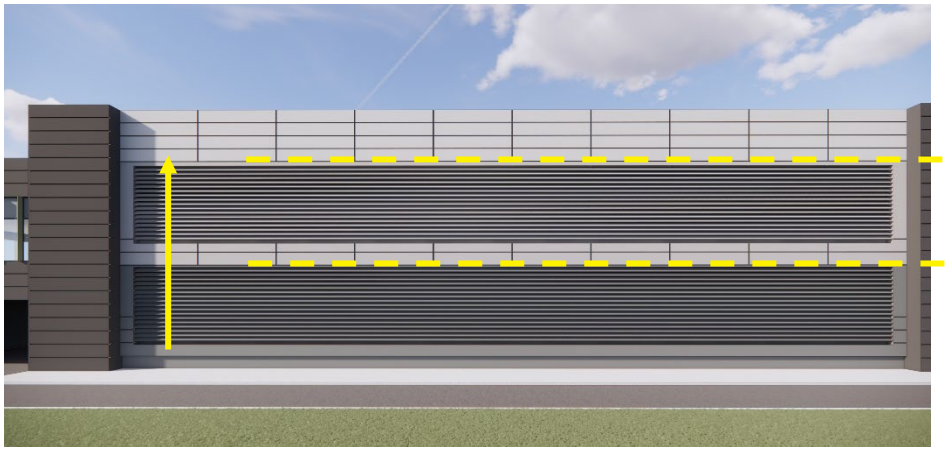
Picture 25 | A range of colours have been chosen for Data Centre to help differentiate each building and to aid wayfinding on the site.

Picture 26 | Data Centre 01 – 03 each with a different range of coloured tiles.

Picture 27 | Example of Admin Block with coloured tiles and metal fins.

The Data Hall is clad with horizontally fixed, composite flat metal panels with mineral wool core, powder coated to a range of grey colours. The image below shows the long façade and the use of a variation of colours to break up the façade. There is a gradient of colours from the base of the long façade getting lighter towards the parapet. Large louvered sections sit within the façade to provide ventilation to the AHUs internally.

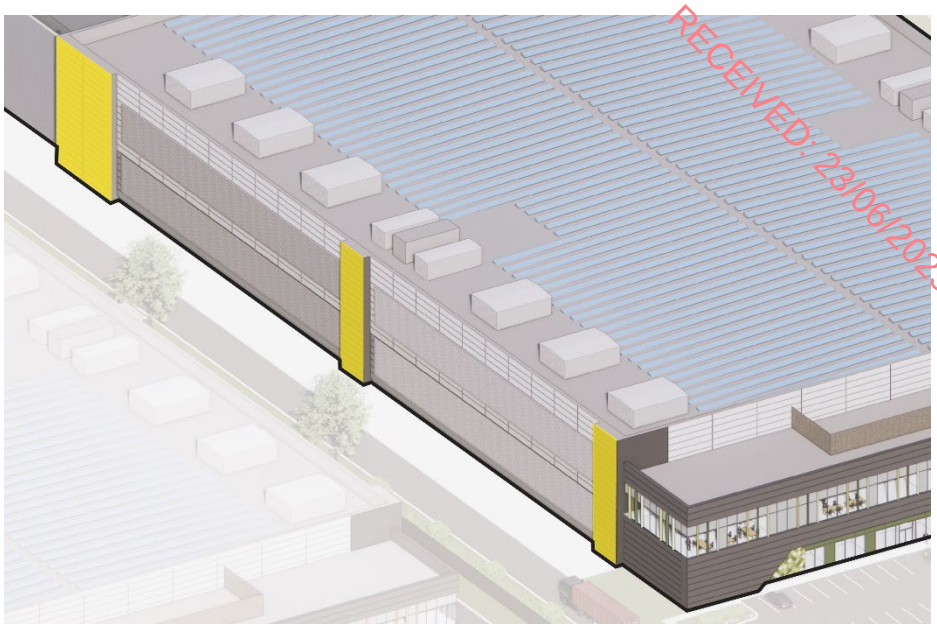
Picture 28 | Diagram highlighting gradient in panels from the base towards the parapet of the building.



Parts of the façade where the escape stairs are located step out and are horizontally fixed, composite flat metal panels with mineral wool core, powder coated to a dark grey colour to help break up the massing of the building. The parts of the façade where the stair core pushes out also range in colour, getting lighter towards the external plant yard.

Picture 29 | Diagram highlighting change in colour of stepped out façade.

Picture 30 | Diagram highlighting step in façade along the Data Hall.



The External Plant Yard is a fully louvered wall, the provide visual screening but will allow ventilation to all electrical turbines and machinery within.

7.3 Ancillary Buildings

The design of ancillary structures like Admin Workshop or Security House is in keeping with the main data centre building, ie. use of flat composite panels in light grey colour and where necessary, coloured aluminium rainscreen system to draw attention to the entrances.

The image below shows the Security House located at the entrance of the site. This has a sloped green roof with a large overhang to draw attention to it as you approach the site. A blue toned aluminium rainscreen system covers the base of the structure to contrast against the greens of the planting and berming that guides you into the site.

Picture 31 | CGI of Security House

The Admin Workshop has a flat roof but incorporates a large canopy that surrounds the entrance lobby and the glazing on the southern façade. This will help with glare and overheating whilst creating architectural definition on an

otherwise simple façade. An orange toned aluminium rainscreen system highlights the entrance contrasting from the surrounding planting but will help it to assimilate within the site in the later months of the year.

Picture 32 | CGI of Admin Workshop

7.4 Visualisations

Visual Impact Assessment Report is included as part of the EIAR submitted for this planning application.

8.0 Schedule of Areas

Refer to RKD sheets -

- 22217-RKD-ZZ-ZZ-DR-A-1040
- 22217-RKD-ZZ-ZZ-DR-A-1041
- 22217-RKD-ZZ-ZZ-DR-A-1046
- 22217-RKD-ZZ-ZZ-SH-A-2000 – 2004:

Picture 32 | Area Schedules

DATA CENTRE TYPE A - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Ground Floor FFL	Ground Floor Level - GIA	13,460.7 m²
00 Ground Floor FFL		13,460.7 m²
01 First Floor FFL	GIA First Floor Level - GIA	13,712.9 m²
01 First Floor FFL		13,712.9 m²
02 Admin Roof Level	GIA Admin Roof Level - GIA	16.7 m²
02 Admin Roof Level	GIA Admin Roof Level - GIA	17.3 m²
02 Admin Roof Level		34.0 m²
04 DC Roof Level	GIA Data Hall Roof Level - GIA	16.7 m²
04 DC Roof Level	GIA Data Hall Roof Level - GIA	17.2 m²
04 DC Roof Level	ROOF LEVEL - GIA	19.5 m²
04 DC Roof Level		53.3 m²
GROSS INTERNAL TOTAL AREA		27,261.0 m²

DATA CENTRE TYPE B - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Ground Floor FFL	GROUND FLOOR LEVEL - GIA	13,460.7 m²
00 Ground Floor FFL		13,460.7 m²
01 First Floor FFL	FIRST FLOOR LEVEL - GIA	13,713.0 m²
01 First Floor FFL		13,713.0 m²
Admin Roof Level	ROOF LEVEL - GIA	17.3 m²
Admin Roof Level	ROOF LEVEL - GIA	16.7 m²
Admin Roof Level		34.0 m²
DC Roof Level	ROOF LEVEL - GIA	17.2 m²
DC Roof Level	ROOF LEVEL - GIA	16.7 m²
DC Roof Level	ROOF LEVEL - GIA	19.5 m²
DC Roof Level		53.3 m²
GROSS INTERNAL TOTAL AREA		27,261.0 m²

DATA CENTRE TYPE C - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Ground Floor FFL	GROUND FLOOR LEVEL - GIA	13,460.6 m²
00 Ground Floor FFL		13,460.6 m²
01 First Floor FFL	FIRST FLOOR LEVEL - GIA	13,712.9 m²
01 First Floor FFL		13,712.9 m²
Admin Roof Level	ROOF LEVEL - GIA	17.3 m²
Admin Roof Level	ROOF LEVEL - GIA	16.7 m²
Admin Roof Level		34.0 m²
DC Roof Level	ROOF LEVEL - GIA	17.2 m²
DC Roof Level	ROOF LEVEL - GIA	16.7 m²
DC Roof Level	ROOF LEVEL - GIA	19.5 m²
DC Roof Level		53.3 m²
GROSS INTERNAL TOTAL AREA		27,260.9 m²

DATA CENTRE TYPE D - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Ground Floor FFL	GROUND FLOOR LEVEL - GIA	7,844.7 m²
00 Ground Floor FFL	GROUND FLOOR LEVEL - GIA	173.9 m²
00 Ground Floor FFL		8,018.6 m²
01 First Floor FFL	FIRST FLOOR LEVEL - GIA	8,095.4 m²
01 First Floor FFL		8,095.4 m²
Admin Roof Level	ROOF LEVEL - GIA	17.3 m²
Admin Roof Level	ROOF LEVEL - GIA	16.7 m²
Admin Roof Level		34.0 m²
DC Roof Level	ROOF LEVEL - GIA	20.2 m²
DC Roof Level	ROOF LEVEL - GIA	20.2 m²
DC Roof Level		40.5 m²
GROSS INTERNAL TOTAL AREA		16,188.4 m²

ADMINISTRATION WORKSHOP & WATER TREATMENT PLANT - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Entry Level	ADMINISTRATION WORKSHOP BUILDING - GIA	503.6 m²
00 Entry Level	WATER TREATMENT PLANT - GIA	315.4 m²
GROSS INTERNAL TOTAL AREA		818.9 m²

SECURITY HOUSE - GROSS INTERNAL AREA

LEVEL	NAME	AREA
00 Entry Level	SECURITY HOUSE - GIA	42.1 m²
GROSS INTERNAL TOTAL AREA		42.1 m²

HYDRANT PUMP ROOM - SCHEDULE OF AREAS

ROOM No.	NAME	AREA
	HYDRANT PUMP ROOM - GIA & NIA	80.0 m²
00 Entry Level		80.0 m²
NET INTERNAL TOTAL AREA		80.0 m²

DISTRICT HEATING BUILDING - SCHEDULE OF AREAS

ROOM No.	NAME	AREA
L0.01	DISTRICT HEATING BUILDING - GIA & NIA	340.5 m²
00 Entry Level		340.5 m²
NET INTERNAL TOTAL AREA		340.5 m²

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