

Planning Department
Planning Counter
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Received



VDC Campus - Aerial View from north

Additional Information Response
DUB11 CAMPUS DEVELOPMENT
Design Statement in support of
Planning Application

DUB11-DC-XX-G021-V1-PL-BMD

Revised Feb 28th, 2022



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Introduction

Planning Application Ref: SD21A/0241 was lodged with SDCC on 23rd August 2021. The Council, after careful review of the application made a Request for Additional Information on 26th October 2021

The design has been amended and additional information provided in the Additional Information (AI) Response submitted on 6th January 2022 by Marston Planning Consultancy on instruction from the Applicant Vantage Data Centers DUB11 Ltd.

This Design Statement together with the design drawings prepared by Burns & McDonnell Inc. forms part of the AI Response. It explains the changes made to adapt and improve the design. The full response to the AI Request is given in the Marston Planning Consultancy Planning Statement

This Design Statement should be read as part of the full suite of documents submitted for the AI Response.

Appendix A is an updated Drawing List showing the extent of revisions as part of the Additional Information Response.



Location Plan

Additional Information – Design Statement Jan 27th, 2022

Basis of Design

DESIGN BRIEF

Every new project follows a defined sequence of steps. The starting point is an appraisal of the opportunities and constraints of the development site, both physical and regulatory against the development objectives of the investor.

Below is a re-cap of the design process leading to the original application.

DEVELOPMENT OBJECTIVES

The specific development objectives for this development are to:

- Add to the national IT and data storage infrastructure
- Create employment;
- Provide a minimum of 12 data modules of the Vantage hyperscale model;
- Create a high-quality Business Park environment
- Increase biodiversity
- Enhance the ecological value of the Baldonnell Stream and
- Increase capacity of the local electrical grid network.

ALTERNATIVE OPTIONS

Three alternatives were considered:

- The 'Do-Nothing' alternative;
- Alternative locations and uses; and
- Alternative design/layouts of the proposed development.

Do-Nothing:

This option was briefly considered and rejected on the basis that

- The land under the Local Plan is intended to be re-purposed to an Employment Use
- A consent is already in place for a similar storage use
- The area has excellent fibre connectivity
- Do-nothing does not meet any of the Developer's objectives.
- There would be a substantial loss of economic opportunity value

Alternative Locations

No alternative sites have been considered by the Applicant for the following reasons:

- The site is owned by the Applicant and therefore the Applicant did not consider alternative sites which are the property of a third-party;
- The site is located within an area identified in SDCC's Development Plan 2016-2022 as an area for enterprise and employment uses (as previously stated);
- The site would provide a key development opportunity to contribute to the regeneration of an underutilised site and with the land use identified in ROP 8.25;
- The site sits within a wider area dominated by data centres which has good network provision and fibre suppliers, that suit the needs of the site and is thus an ideal location for the proposed development to be situated;
- Alternative sites in the Dublin area may lack adequate power distribution
- Alternative sites in the west of Ireland may lack fibre connectivity
- There is no evidence of site contamination; and
- The level terrain is suitable for large floorplate buildings.

Alternative Design & Layouts

Data centres are in general simple buildings with complex and dense services for IT, power distribution and mechanical cooling, all requiring a high input of engineering design and project management. This experienced developer has evolved standard designs to achieve consistently high quality reliable facilities. Repetitive design helps improve safety at all levels for construction and management. A characteristic of the Vantage model is a single data-hall module with associated plant that can be replicated on a global basis.

This forms the building block for evaluating each site, matching the business case and achieving a best-fit outcome. The steps on the next page illustrate how this process has been applied to the Profile Park site.

Design Evolution 1

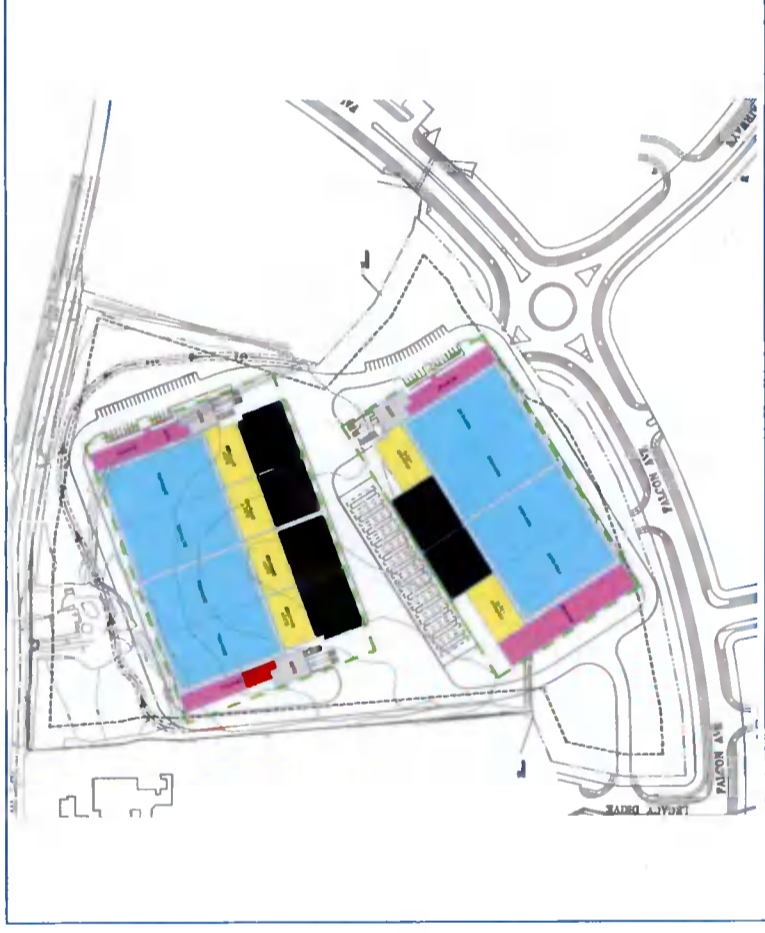
Step 1 – Test consented scheme



Outcome: The standard design superimposed on the consented warehouse scheme yields an 8-hall datacentre.

Fail: Not enough data space to meet business case. Poor site utilisation and density

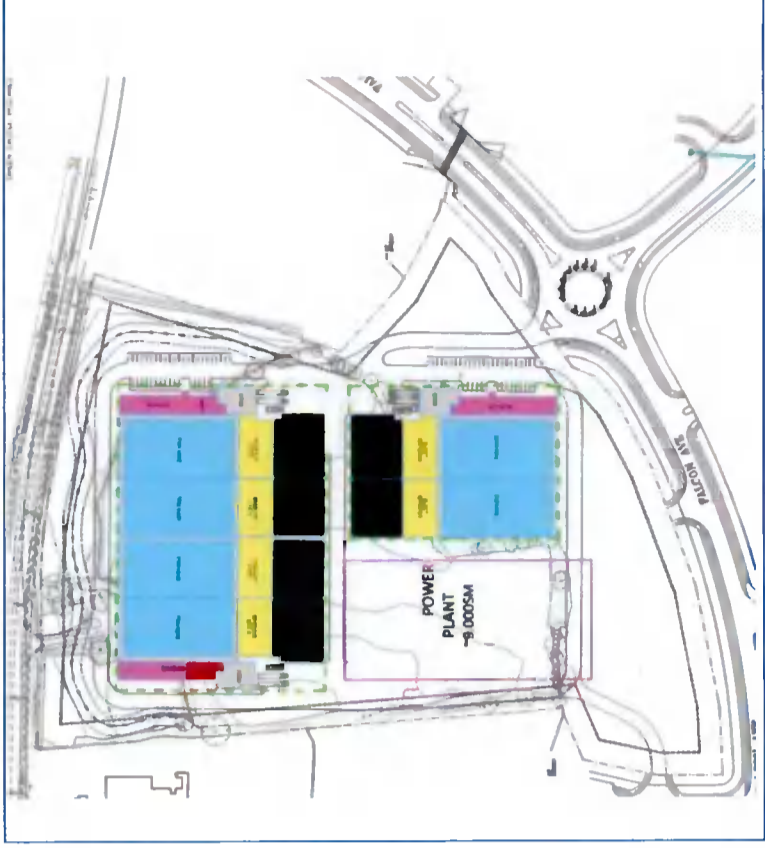
Step 2 – Maximum site coverage



Outcome: Spatial exercise to see how many halls can fit on the site by building over the stream and using standard design.

Fail: Achieves 16 modules but without space for parking and Power Plant. Inadequate for fully serviced modules.

Step 3 – Maximum including Power Plant

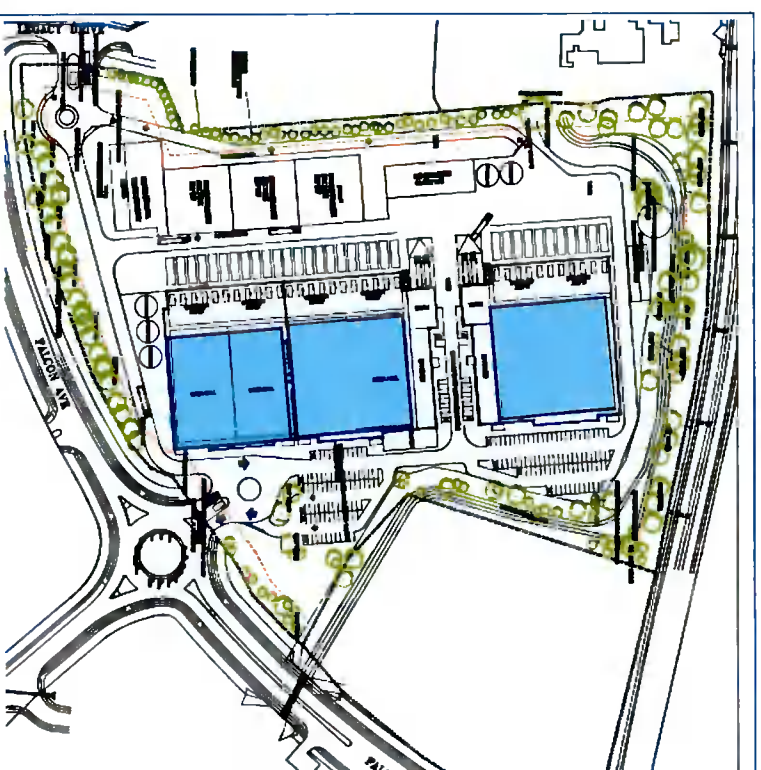


Outcome: Spatial exercise to see how many halls can fit on the site using standard design and with space for a Power Plant

Pass: Achieves 12 modules to meet the business case with space for Power Plant. Creates the challenge of the Baldonnel Stream alignment.

Design Evolution 2

Step 4 – Site Plan Development



Outcome: Design Evolution using CAD and with Power Plant. Stream re-aligned. Plant paced on least noise –sensitive side.

Fail: Meets business case. First consultation meeting with SDCC raises concerns notably around watercourse and loss of biodiversity.

Step 5 – August 2021 Scheme



Outcome: Intensive design work on landscaping and ecology aspects of the scheme to create a new watercourse that is longer, wider and richer than the existing. Stormwater management to reduce below-ground attenuation and lower flood risk.

Fail: Applicant's preferred outcome to balance business drivers with biodiversity gains and long-term site improvement. **Fails to gain SDCC support.**

Step 6 – SDCC Response

Outcome: SDCC issued Decision Order 1390 and Chief Executive's Order PR/1390/21 on 26th October 2021 which identified some areas of concern and requested further information. from the Applicant.

Key Issues: The main points raised by SDCC can be summarised as:

1. Compliance with National & Regional Energy policy E1,E5 & E11 of the 2016-22 Local Plan
2. Realignment of +the Baldonnell Stream
3. Massing and appearance of the Data Centres
4. Phasing
5. Trees & Hedgerows
6. Sustainable Drainage & Green Infrastructure
7. Department of Defence consultation
8. Verification from Irish Water

Response: The Applicant and the Design Team have reviewed the whole design of the scheme and addressed each of the concerns raised in the SDCC Additional Information Request. This Design Statement focuses on Points 2 & 3 of the AI Request. It should be read together with the Additional Information Response statement by Marston Planning Consultants.

2. Response to AI Request Item 2(A) (i), (ii) – Baldonnel Stream

(A) In light of this, the applicant is requested to reconsider the proposed development on the site, as follows:

(i) constructing all required structures on the site in a more southerly/south-westerly direction, by relying more on the internal road network within Profile Park (Falcon Avenue). The planting scheme and landscaped area proposed at the southern end of the site could be relocated at the northern end alongside the existing stream. The applicant is requested to submit a revised layout plan indicating this.

Response

The Design Team have undertaken a thorough review of the site layout to assess if the diversion of the Baldonnel Stream can be avoided. This review has enabled the existing stream alignment to be retained.

The suggestion to “rely more on the internal road network within Profile Park (Falcon Avenue) was considered. Moving the buildings closer to Falcon Avenue makes it feasible to retain the stream. The Applicant prefers to retain an access road inside the site because

- access for cranes is required to install and remove rooftop plant
- a secure perimeter fence is essential for the campus without introducing extra security gates on the perimeter.
- Falcon Avenue is not within the ownership and control of the Applicant and would require a consent from the Profile Park owner and possibly other datacentre stakeholders

(ii) If (i) cannot be achieved, the applicant should consider the omission of one of the datacentre structures.

Response

The careful re-design of the site layout allows the stream to be retained without omitting any of the datacentres.



Frontage to Falcon Avenue



Overlay of original scheme on new site plan

2. Response to AI Request Item 2 (c) – Baldonnel Stream

- (C) The applicant is requested to clarify that a 10m riparian strip (measured from the top of each of the banks) has been provided and does not include any built development and is taken from the top of the bank.

Response

The revised site layout plan (Drawing DUB11-DR-SP-A004-V1-PL-BMD) shows a 10-metre wide riparian strip will be maintained along both sides of the stream banks for the entire length of the stream within the site. The strip will be free of any development apart from ecological enhancements.



Northern portion of existing stream



Southern portion of existing stream

3. Scale of Development

3. (a) The proposed size, bulk, scale and mass of the development and the land coverage the buildings are significant and may be deemed to be an overdevelopment of the site. Any development proposed on lands zoned for Enterprise and Employment is required to comply with policies and objectives contained within the current County Development Plan. Chapters 7 and 8 require natural solutions and significant green infrastructure to form planning proposals on EE zoned land. It is apparent that there is a significant level of hardstanding across the site and 'greener' solutions may be more appropriate in some instances. The applicant is requested to reconsider the overall layout.

Response

The Design Team have re-considered the overall layout of the scheme and arrived at a design which is a significant improvement on the original application in that it overcomes many of the concerns raised in the SDCC Additional Information Request. This has meant introducing changes which are not part of the Applicant's standard design but which enable us to achieve a more compact layout that retains the stream alignment while meeting the space requirements of the design brief.

Natural solutions including soft landscape and a new SuDS drainage design offer the benefits to ecology and the environment that underpin Chapters 7 and 8 of the County Development Plan. These are described in more detail in the Civil & Structural Engineers Report prepared by Pinnacle Ireland and the Landscape Report and drawings prepared by Kevin Fitzpatrick Landscape Architecture.

The area of hardstanding has been reduced 20.4% from 15,079m² to 12,010m² through the use of more permeable paving and gravel.



Aerial view of the redesigned scheme

This shows the stream retained and the increased landscape along New Nangor Road

(b) The Planning Authority notes from a site inspection that the site is set below the existing internal road network and this change in levels is not apparent in the section that was submitted. It is also noted there will be cut and fill on this site and the applicant has provided a plan indicating how the levels will change across the site. In addition to this information, the planning authority require existing and proposed cross sections. It is apparent that there are retaining structures proposed and details of these should be provided on plans and sections provided.

Response

Cut and fill sections are shown on Drawing DUB11.1-DR-SP-C312-V0-WS4-PIN and the external civil works are shown on Drawing DUB11.1-DR-SP-C130-V0-WS4-PIN. Formation levels are shown on Pinnacle Drawing DUB11.1-DR-SP-C316-V0-WS4-PIN and cut-and-fill across the site are shown on Drawing DUB11.1-DR-SP-C317-V0-WS4-PIN.

3. Scale of Development

(b) The site is highly prominent, with significant blank facades.

Response

Datacentres, like most bulk storage buildings, are tall buildings with only a modest demand for windows and glazing as the data modules and plant rooms house computer servers and the plant needed to keep them cool and dissipate heat. This often presents a challenge to designers. The original design adopted a functional layout with the offices and support spaces facing each other across an internal road.

- (i) The data centre buildings are significantly taller than the landscaping. The Planning Authority has significant concerns regarding the visual impact of this element of the proposal, given the prominence of the data centres along New Nangor Road and also within Profile Park, on Falcon Avenue. The applicant is, therefore, requested to consider how the visual impact could be reduced, in terms of both the design of the buildings, reduction in footprint of the buildings and also the provision of significantly additional green infrastructure and landscaping. The applicant is also requested to consider:
- Reorientating buildings to increase the visual prominence of active facades;
 - Redesigning buildings to reduce the monolithic appearance from New Nangor Road and Falcon Avenue;
 - Provision of further green walls.

Response

The Design Team have adopted several strategies to overcome the bulk and blank facades of the datacentres when viewed from New Nangor Road and Falcon Avenue. The first strategy was to make the built campus more compact to reduce the overall footprint and to increase the distance from the boundaries. The figure opposite shows how the more compact site layout has been achieved by double-stacking the generators, splitting the Power Plant and reducing the paved area so that all the key elements of the campus are contained south of the Baldonnel Stream. The next page shows aerial views of the campus – original and revised schemes.



Overlay of original scheme  on new site plan

3. Scale of Development

ORIGINAL APPLICATION – Aerial View from South (Below)

The original application was a rational and efficient response to the Applicant's modular design philosophy. The response from SDCC Item 3 (b) indicated that the site could be regarded as overdevelopment, especially given the Council's policy to retain watercourses. The rectilinear layout creates the impression of a single large building.



RESPONSE TO FURTHER INFORMATION REQUEST (Below)

Blank facades on the Falcon Avenue frontage are avoided by placing offices and entrance facing South.. By double-stacking and placing the generators at an angle we are able to compress the built footprint within the area bounded by the existing Baldonnel Stream and create a substantial landscaped area to the North of the site. Introducing angles between the buildings breaks up the mass and gives more visual interest. The bulk of the Power Plant is reduced by a split into two buildings separated by the transformer compound. Attenuation ponds, meadows and swales allow surface water to be controlled without any below ground tanks. Permeable surface paving is increased and there is a slight reduction in parking spaces



3. Scale of Development

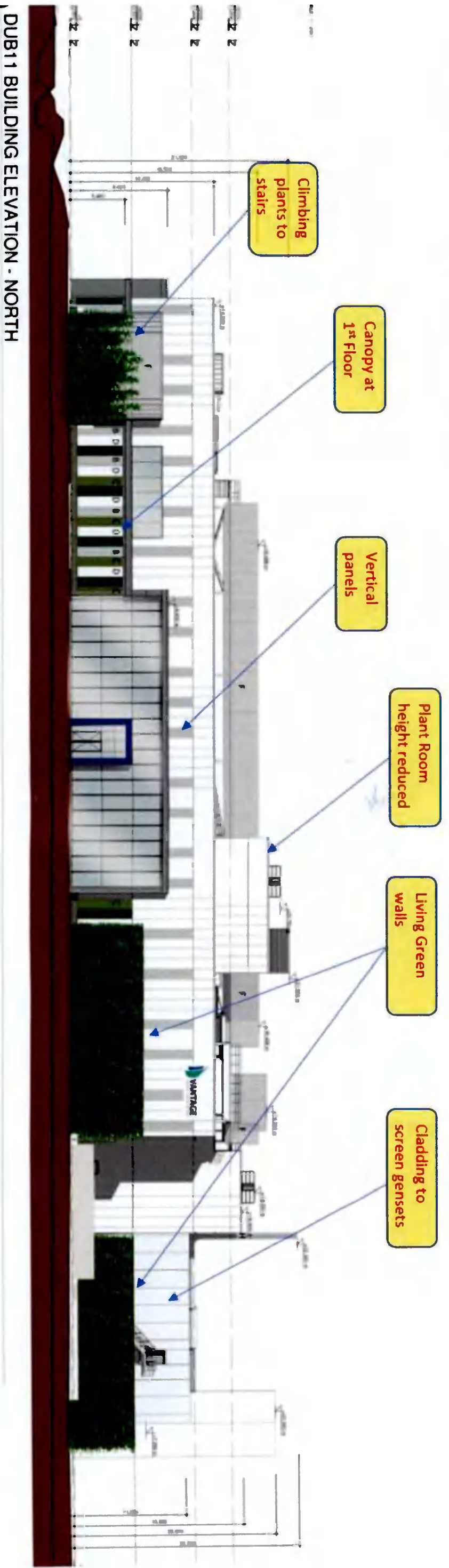
Response

The detail design of the buildings was re-visited to address some of the other points raised by the Council and several changes made which are summarised below.

- Moving the offices to face the Road
- Changing the panel format to a vertical module.
- Lowering the height of the Plant Room
- Framing the cladding at the west end with projecting fascia

Similar treatment is adopted for DUB12 which now faces Falcon Avenue.

- Living Green Walls at Ground level
- Climbing plants on the mesh screen to the stair towers.
- Adding stronger colour to the panels
- Dark grey louvers to the chiller plant screen and the generator enclosure



Exterior Treatment & Streetscape

The approach to the exterior design of the data centre buildings is to use high quality insulated panels for the main façade with a powder-coated finish and with a palette of colours that enlivens the façade in a graduated way. Perforated metal panels are used around the staircases and with stainless steel wire mesh to allow planting to grow up the façade, thus adding texture and visual interest as well as contributing to the bio diverse habitat of the landscaping. Living Green Walls are introduced at Ground level to increase biodiversity and soften the building at street level.

Rooftop plant including chillers and transformers are masked by dark grey mesh panels. The façade around the office entrances are aluminium curtain wall. A sedum “green” roof is introduced over the office and non-critical areas of the datacentres.

A similar palette of cladding is used on the Power Plant and other ancillary buildings.



WHITE METAL PANEL



GREY METAL PANEL



CURTAIN WALL



ACOUSTIC LOUVERS



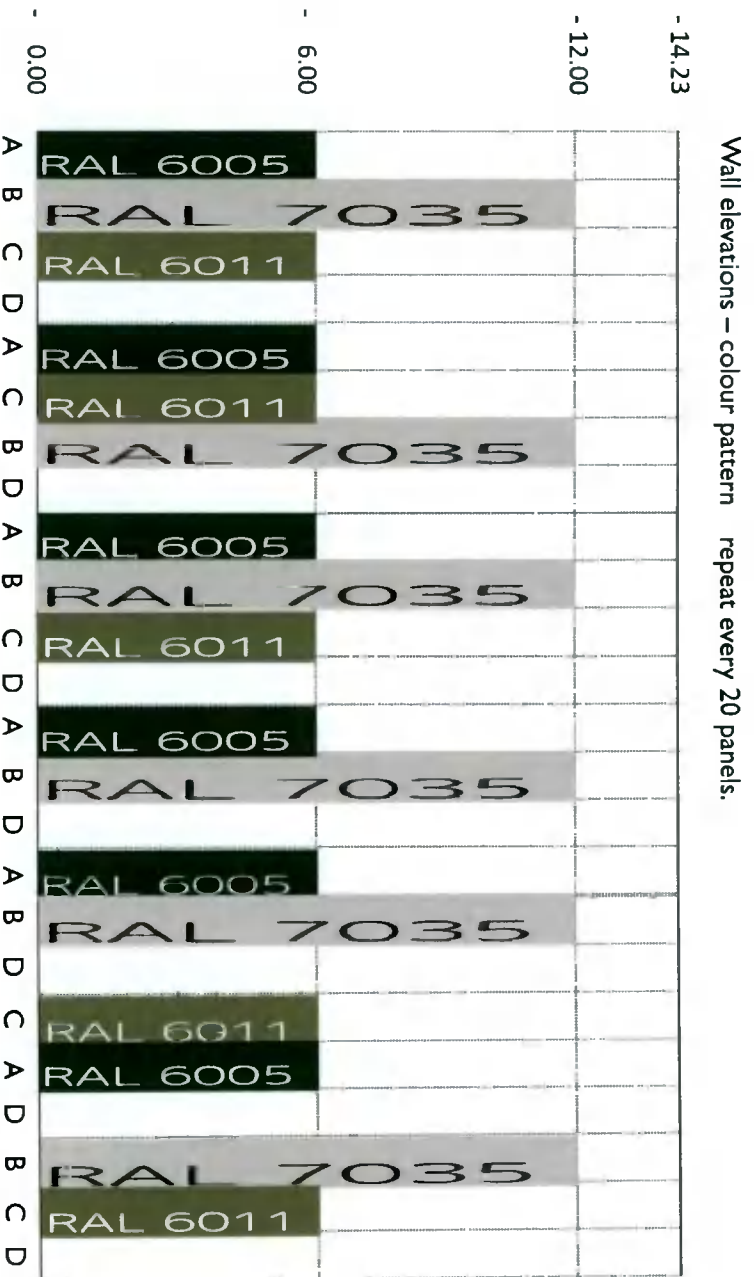
PERF. PATTERN METAL

Key Issue 3 – Facades

Facade Colours

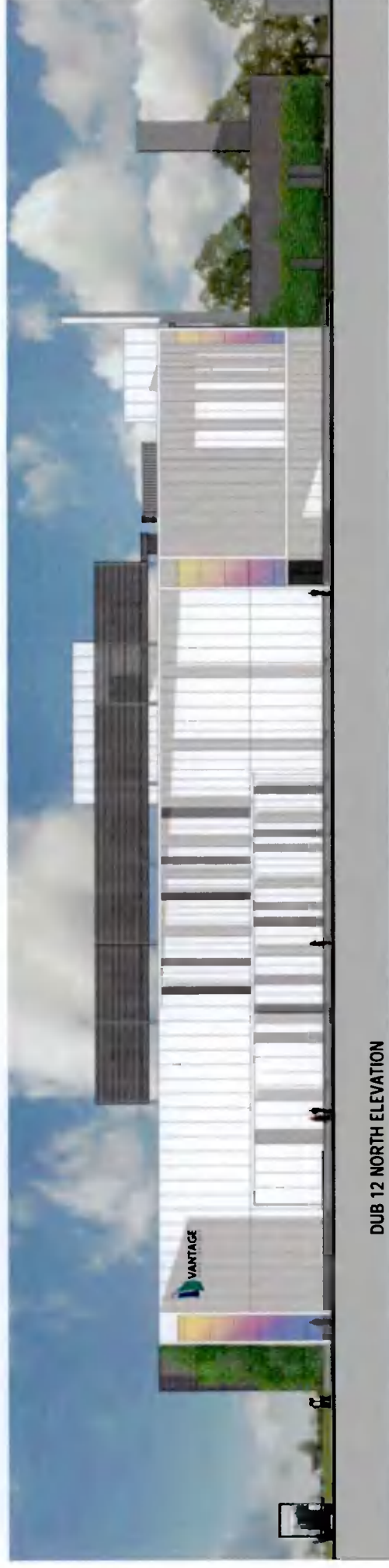
The design of the facades has been reviewed and a new colour pattern style introduced to strengthen the visual impact at Ground level, reducing at First Floor and reverting to a solid white cladding at parapet level.

The pattern of colour on the primary street-facing facades is built around a repeating pattern. This breaks up the mass of the building and complements the Living Green walls and climbing plants around the stair towers.



DUB11 BUILDING ELEVATION - EAST

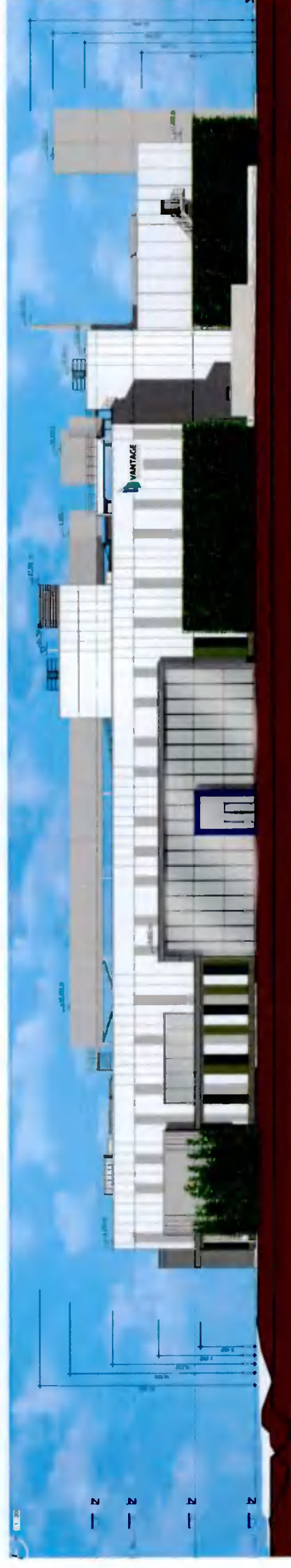
3. Scale of Development



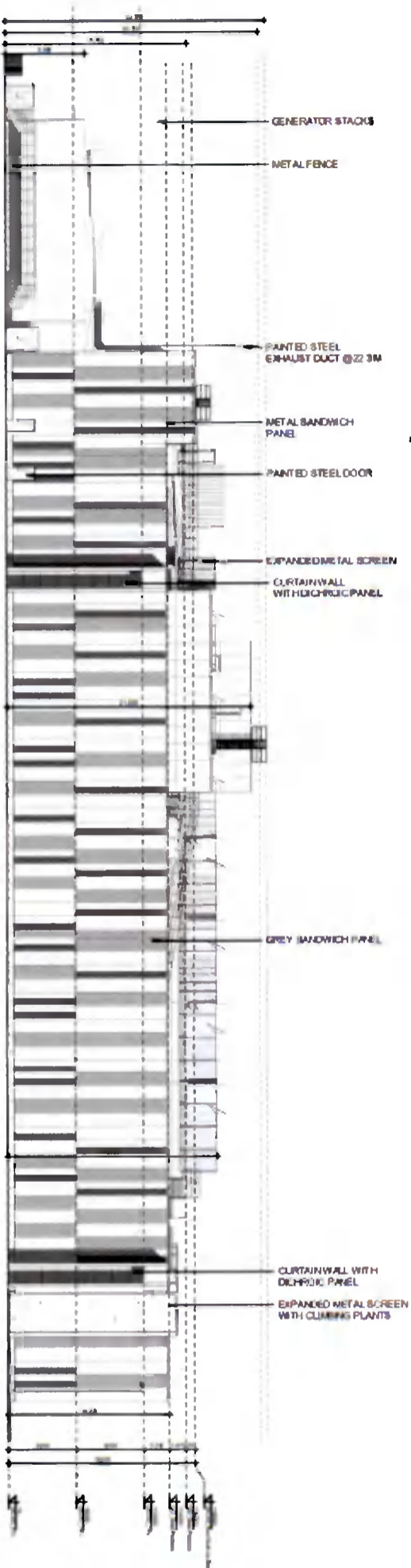
ORIGINAL APPLICATION – Elevation to New Nangor Road (Above) Blank frontage enlivened with coloured panels and trim. This softens the bulk of the building but a more substantial change is required to meet the Additional Information Request Point 3 (b)

RESPONSE TO FURTHER INFORMATION REQUEST (Below)

The buildings have been re-organised on site to locate the main entrance of DUB11 facing New Nangor Road. This gives more visual interest and also affords staff and visitors an attractive view over the landscaped stream and berms. In addition, we have introduced living Green Walls in front of the loading bay and the generator compound. The wire trellises around the escape stairs are enlarged to allow climbing plants to flourish. By changing the means of escape from the roof to the staircase midway along the East façade we have reduced the escape stair on the NE corner to serve only the first floor. The overall level of the building is lowered by 250mm and the plant room on the roof reduced in height. The coloured panels on the façade are graded in colour from dark to light to reduce the visual bulk and a canopy has been added at first floor level to break up the massing from street level.



3. Scale of Development

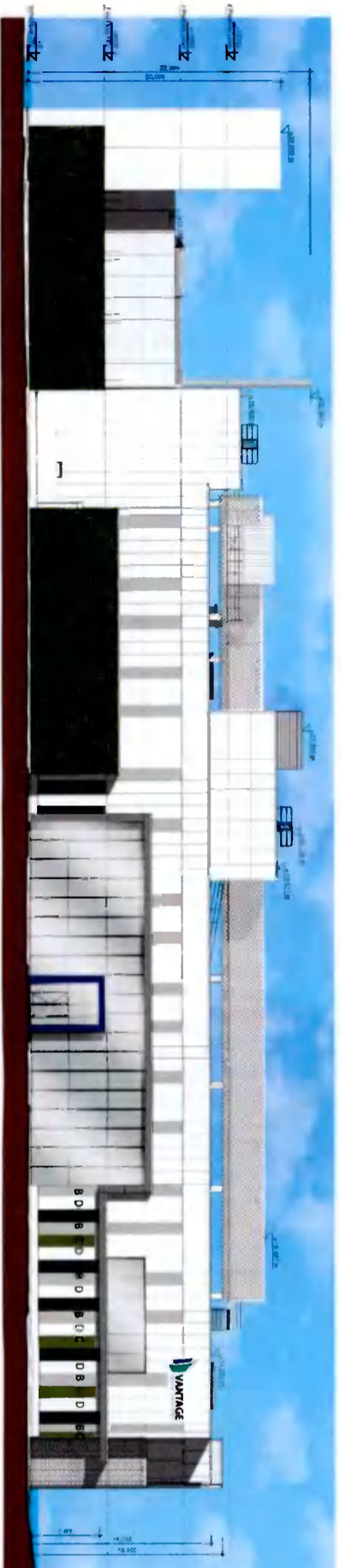


② DUB11 BUILDING ELEVATION - SOUTH

ORIGINAL APPLICATION – Elevation to Falcon Avenue (Above) Blank frontage enlivened with coloured panels and trim. This softens the bulk of the building but a more substantial change is required to meet the Additional Information Request Point 3(b)

RESPONSE TO FURTHER INFORMATION REQUEST (Below)

The buildings have been re-organised on site to locate the main entrance of DUB12 facing Falcon Avenue. In addition, we have introduced living Green Walls in front of the loading bay and the generator compound. The wire trellises around the escape stairs are enlarged to allow climbing plants to flourish. The overall level of the building is lowered by 250mm and the plant room on the roof reduced in height. The coloured panels on the façade are graded in colour from dark to light to reduce the visual bulk and a canopy has been added at first floor level to break up the massing from street level.



3. Scale of Development

Response

The effect of all the changes outlined above is to significantly reduce the visual impact of the datacentres, particularly along the New Nangor road frontage. The photomontages on the right show the appearance at 1-year and 5-years of planting.

For comparison the image below shows the original application scheme which was much more visible than the revised version.

New Nangor Road – original scheme



New Nangor Road – with young trees

New Nangor Road – with mature trees



3. Scale of Development

Response

The view into the site from the northwest shows the effectiveness of the new and existing planting in screening the Power Plant and datacentres. The photomontages below show the appearance at 1-year and 5-years of planting. The image on the right shows the original application image with the Power Plant visible.



New Nangor Road Boland Garage – with young trees



with mature trees.

3. Scale of Development

Response

The view into the site from Falcon Avenue. The photomontages below show the original blank facades of the original application scheme on the left and the revised scheme on the right with the office block facing the road.



Falcon Avenue – Original Application



Falcon Avenue – Revised Scheme with offices facing the road frontage

3. Scale of Development

Response

The distant view into the site from Baldonnel Road looking East shows the original scheme image top right and the revised scheme bottom right. The main impacts are to reduce the bulk and impact of the Power Plant on the left and to reduce the overall visual impact of the campus.



Distant view from East – original scheme



Distant view from East – revised scheme

3. Scale of Development

(ii) The permanent power plant would be over 118m long and would have a significant presence on the western boundary of the site. It is noted that the western elevation is blank and monotonous, with flues. Whilst significantly shorter than the west elevation, the south elevation also appears blank. The Planning Authority request that the applicant consider adding detail to these elevations, to reduce the monolithic appearance.

Response

The multifuel Power Plant is now split into two buildings separated by the Step-up Transformer compound. The North building is 63m long and the South building is 46 m long, with a separation of 40 metres. Whereas on the original scheme the Substation faced onto Falcon Avenue, it is now almost hidden between the two Power buildings.

The contrast between the two designs are shown on the next page.

(iii) There are concerns regarding the design of the temporary power plant. It is noted that the proposal would be temporary, however, there are still concerns regarding the presence of significant blank facades. The floorplans provided indicate a single access gate to the north and south and it is noted that these details are not reflected on the elevations. The Planning Authority request that the applicant consider adding detail to these elevations, to reduce the monolithic appearance.

Response

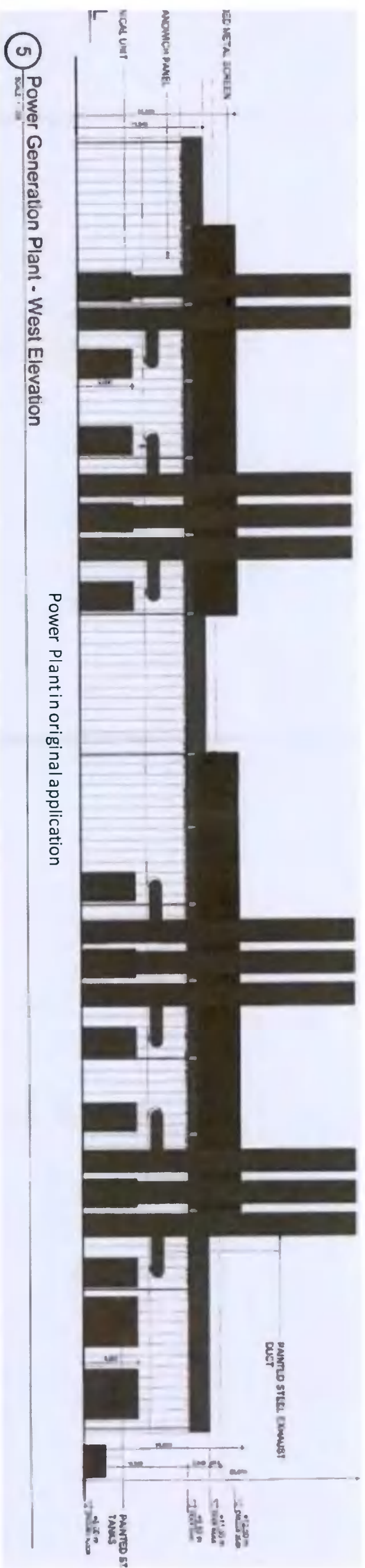
The evolution of the Energy Strategy described in the Planning Consultant's Report means that the temporary power plant is no longer required and is omitted from this Additional Information package.



Falcon Avenue Frontage with mature trees.

The South Power Plant is on the left and the DUB12 Datacentre is on the right in the image above.

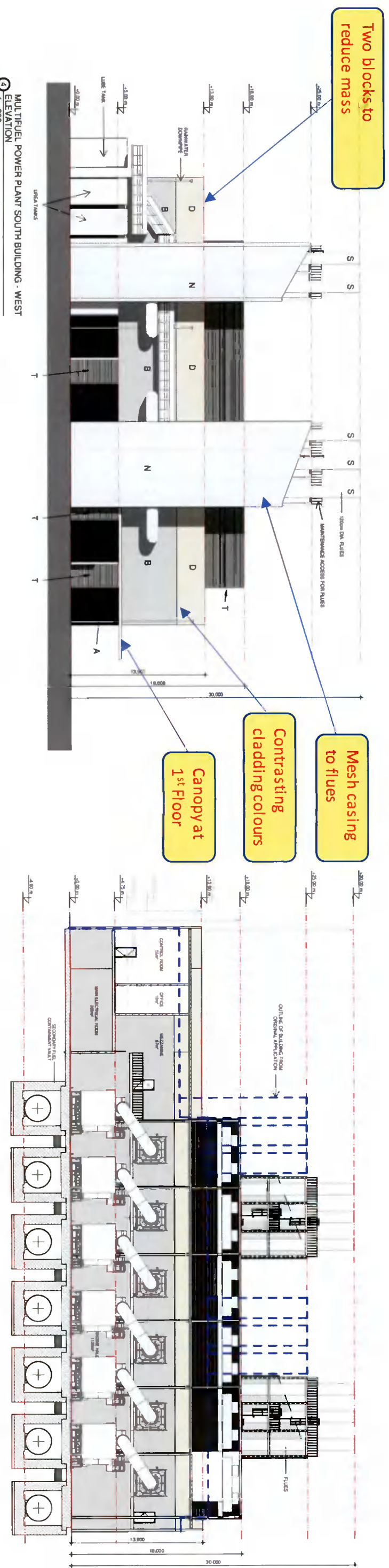
3. Scale of Development – Power Plant Design Changes



5 Power Generation Plant - West Elevation

Power Plant in original application

This page shows the changes made to the design of the Power Plant to reduce mass and bulk and enhance the appearance.



MULTIFUEL POWER PLANT SOUTH BUILDING - WEST
ELEVATION
1 : 200
BURNS & MCDONNELL

MULTIFUEL POWER PLANT NORTH BUILDING
LONGITUDINAL SECTION
1 : 200
Additional Information – Design Statement Jan 27th, 2022

Appendix A: Schedule of Areas

Additional Information Response Item 4(1)

SCHEDULE OF AREAS

Function	PHASE 1 DUB 11	PHASE 2 DUB 12	
	m ²	m ²	
Data Modules	10,051	5,016	
Plant Rooms	7,612	3,845	
Offices	1,234	50	
Storage	1,331	741	
Support Space	226	236	
Circulation	2,861	1,245	
Total	23,315	11,133	
Walls, columns etc.	1,352	1,782	
Total datacentres	24,667	12,915	
Multifuel Power Plant	1784	1258	
AGI Plant	95		
Switch Station	252		
Step-up Substation	134		
TOTAL AREA	26,932	14,173	

GIA

GEA

GEA

Drawing List - Architectural

BUILDINGS	ARCHITECTURAL	DOCUMENT TITLE	REVISION	KEY CHANGES
Site	DUB1-DR-SP-G050-V1-PL-BMD	LOCATION PLAN	V1	No change
Site	DUB11-DR-SP-A001-V1-PL-BMD	SITE PLAN AS EXISTING	V1	Note added to show existing culvert
Site - Demolition of existing structures	DUB11-DR-SP-A002-V1-PL-BMD	SITE PLAN AS EXISTING - DEMOLITION OF EXISTING STRUCTURES	V1	No change
Site	DUB11-DR-SP-A003-V1-PL-BMD	AMENDMENTS TO EXISTING SITE PLAN	V1	Existing stream retained, culvert removed
Site - Phase 1 & 2	DUB11-DR-SP-A004-V1-PL-BMD	ARCHITECTURAL PROPOSED SITE PLAN	V1	New Site layout
Site - Phase 1	DUB11-DR-SP-A005-V1-PL-BMD	ARCHITECTURAL PROPOSED SITE PLAN Phase 1	V1	Amended to show two phases
Site & Buildings Phase 1	DUB11-DR-SP-A006-V1-PL-BMD	SITE CONTEXT ELEVATIONS - PHASE 1	V1	New drawings to show phase 1
Site	DUB11-DR-SP-A007-V1-PL-BMD	ARCHITECTURAL FENCING PLAN	V1	Amended to reflect new site layout
Site	DUB11-DR-SP-A008-V1-PL-BMD	ARCHITECTURAL EQUIPMENT YARD FENCE	V1	Minor changes
	DUB11-DR-SP-A009-V0-PL-BMD		V1	
	DUB11-DR-SP-A010-V0-PL-BMD		V1	
	DUB11-DR-SP-A011-V0-PL-BMD		V1	
Switch Substation	DUB11-DR-SP-A012-V1-PL-BMD	SWITCHROOM SUBSTATION Plans and elevations	V1	Updated to match switchgear design
AGI Gas Regulator Compound	DUB11-DR-SP-A013-V1-PL-BMD	ARCHITECTURAL AGI GAS REGULATOR Plans and Elevations	V1	No change
	DUB11-DR-SP-A014-V0-PL-BMD		V1	
Step-up Transformer & substation	DUB11-DR-ZZ-A015-V1-PL-BMD	TRANSFORMER COMPOUND & SWITCH BUILDING	V1	Updated transformers and switch building
North Power Plant Building	DUB11-DR-ZZ-A016-V1-PL-BMD	MULTIFUEL POWER PLANT BUILDING - NORTH Plans and Sections	V1	NEW drawing Plans and sections
North Power Plant Building	DUB11-DR-ZZ-A017-V1-PL-BMD	MULTIFUEL POWER PLANT BUILDING - NORTH Elevations	V1	NEW drawing Elevations
South Power Plant Building	DUB11-DR-ZZ-A018-V1-PL-BMD	MULTIFUEL POWER PLANT BUILDING - SOUTH Plans and Sections	V1	NEW drawing Plans and sections
South Power Plant Building	DUB11-DR-ZZ-A019-V1-PL-BMD	MULTIFUEL POWER PLANT BUILDING - SOUTH Elevations	V1	NEW drawing Elevations
North Power Plant Building	DUB11-DR-ZZ-A020-V1-PL-BMD	FUEL CONTAINMENT VAULT - Environmental Compliance	V1	NEW drawing Elevations
DUB 11 datacentre	DUB11-DR-R01-A101-V1-PL-BMD	ARCHITECTURAL LAYOUT GROUND FLOOR DUB11	V1	Double-stack gensets, single phase build
DUB 11 datacentre	DUB11-DR-Q2-A102-V1-PL-BMD	ARCHITECTURAL LAYOUT FIRST FLOOR DUB11	V1	Double-stack gensets, single phase build
DUB 11 datacentre	DUB11-DR-Q0-A200-V1-PL-BMD	DUB11 ROOF PLAN	V1	Grass roof added, minor amends
DUB 11 datacentre	DUB11-DR-Q0-A300-V1-PL-BMD	DUB11 ELEVATIONS	V1	Amended facade & escape stairs
DUB 11 datacentre	DUB11-DR-Q0-A300-V1-PL-BMD	DUB11 SECTIONS AA,BB,CC	V1	Minor Amends to match facade, gensets
DUB 11 datacentre	DUB11-DR-SP-A900-V1-PL-BMD	DUB11 MAIN ENTRANCE SITE PLAN	V1	Amended to match new site layout
DUB 11 datacentre	DUB11-DR-Q0-A904-V1-PL-BMD	DUB1 - SITE CONTEXT ELEVATIONS	V1	Revised to match new site plan
Site - Lighting	DUB11-DR-SP-E120-V1-PL-BMD	LIGHTING PLAN TERRAIN	V1	Amended to match new site layout
DUB 12 datacentre	DUB12-DR-S0-A110-V1-PL-BMD	ARCHITECTURAL LAYOUT GROUND FLOOR DUB12	V1	Double-stack gensets, minor amends
DUB 12 datacentre	DUB12-DR-O1-A111-V1-PL-BMD	ARCHITECTURAL LAYOUT FIRST FLOOR DUB12	V1	Amended to match new site layout
DUB 12 datacentre	DUB12-DR-O3-A112-V1-PL-BMD	ARCHITECTURAL LAYOUT ROOF PLAN DUB12	V1	Grass roof added, minor amends
DUB 11 & DUB12 - standby generators	DUB1-DR-ZZ-A116-V1-PL-BMD	STACKED GENERATORS	V1	NEW drawing Plans and sections
DUB 12 datacentre	DUB12-DR-Q0-A201-V1-PL-BMD	ARCHITECTURAL ELEVATIONS DUB12	V1	Revisions to facades
DUB 12 datacentre	DUB12-DR-Q0-A301-V1-PL-BMD	ARCHITECTURAL SECTIONS DUB12	V1	Minor Amends to match facade, gensets
DUB 12 datacentre	DUB12-DR-SP-A901-V0-PL-BMD	DUB12 MAIN ENTRANCE SITE PLAN	V1	Amended to match new site layout

Development Summary

The key elements of the development are shown in the table below. This is updated to reflect the design changes since the original application.

The key changes from the original application are:

1. The area of the Multifuel Power Plant has increased in area because of the division into two buildings and design development of the electrical infrastructure has led to an increase in floor area of the substations.
2. The number of parking spaces has reduced from 144 to 137 to allow the campus to fit within the area south of the Baldonnel Stream
3. Fuel Storage for the Multifuel Power Plant to provide 72 hours reserve - an AirGrid requirement, is provided in below-ground bunded tanks,
4. The height of the flues to the Power Plant buildings is increased to 30 metres to meet EN 15259 sampling requirements.

The other key elements remain as the original application.

Item	DUB11	DUB12	Total DUB1
Development Site area			87,053 m ²
Building area- Data Centres	24,667 m ²	12,915 m ²	37,582 m ²
Multifuel Generation Plant, substations, AGI Plant	(1,784+252+134+95) = 2,265m ²	1,258m ²	3,523 m ²
Building height to roof	14.5m/18.5m	14.5m/18.5m	14.5m/18.5m
Roof top equipment & platform height above roof	6m	6m	6m
Building Occupants	45-90 persons	45 persons	135 persons
campus parking spaces	100	37	137
Delivery vehicle spaces	2	2	4
Cycle Spaces	44	22	66
Structure	Steel frame and concrete slabs.		
External wall	Insulated metal cladding on metal framing		
Elevators	3	2	5
Fire Suppression	Sprinkler	Sprinkler	Sprinkler
Emergency generators	22	14	35
Fuel Storage – Standby Generators	22 x 18,000 liters above ground	14 x 18,000 liters above ground	648,000 liters total
Fuel Storage – (HVO) Multifuel Generation Plant	14 x 80,000 liters below ground	12 x 80,000 liters below ground	2,080,000 liters total
Air-cooled chillers	24	14	38
Total Building electrical load	48MW	29MW	77MW
Projected annual water demand to EN 806.2 (2005)	2,043,808 litres (11.1) 539,606 litres (11.2)	2,043,808 litres	4,627,222 litres
Projected peak flow rate	2.82 litres/sec	Peak flow rate from fixture demand to BS 6700(2006)	
Sprinkler Tanks (NFPA-01 type II construction) most stringent requirements.	2 x 455 m ³	2 x 455 m ³	1,820 m ³

4. Phasing of the Campus Phase 1&2

4. (1) It is apparent that there are a number of phases to the development. The Planning Authority request that a single phasing plan is provided, indicating all buildings and that these buildings are clearly labelled. A corresponding schedule should be provided stating which plans should be referred to for each building. A schedule providing details of ancillary uses in each of the data centres should also be provided, setting out the total sq.m for each ancillary use.

Response

The Applicant has decided to build out the campus in two phases.

Phase 1&2 is shown on Drawing DUB1-DR-SP-A004-V1-PL-BMD and on the aerial views on this page.

The scope of the Phase 2 work comprises

- DUB11 Building
- South Multifuel Power Plant
- Remaining Earthworks and drainage
- Remaining Landscaping

The Drawing List for each phase and the schedule of ancillary uses is shown on the table on the next page.



DUB1 Campus – Phase 1 & 2



4. Phasing of the Campus

The campus will be built out in two phases. The sequence will start with the site infrastructure, the North Multifuel Generation Plant and the associated landscape works to give as much time as possible for the new alignment to mature. DUB11 will be the first datacentre. There will be a phased interior fitout of the Data Modules to match customer demand.

Phase 2 sees construction of the DUB12 Datacentre, the South Multifuel Generation Plant and any remaining siteworks.



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Phase 1



New

Existing

Phase 2

4. Phasing of the Campus – Phase 1

4. (1) It is apparent that there are a number of phases to the development. The Planning Authority request that a single phasing plan is provided, indicating all buildings and that these buildings are clearly labelled. A corresponding schedule should be provided stating which plans should be referred to for each building. A schedule providing details of ancillary uses in each of the data centres should also be provided, setting out the total sq.m for each ancillary use.

Response

The Applicant has decided to build out the campus in two phases.

Phase 1 is shown on Drawing DUB1-DR-SP-A005-V1-PL-BMD and on the aerial views on this page.

The scope of the Phase 1 work comprises

- Earthworks and drainage
- Baldonnel Stream improvements and landscaping
- DUB11 Building
- North Multifuel Power Plant
- Switch substation
- Step-up Transformer
- Gas Regulator compound
- Roads and Parking
- Power and fibre infrastructure,
- Boundary fencing and security installations

An area schedule is included in Appendix A



DUB1 Campus – Phase 1



3. Scale of Development

(g) there are a number of inconsistencies within the photomontages. The applicant is requested to provide the following:

- Location of view 1
 - Proposed views for view 4 and 8
 - Details of locations for 7a and 7b
- It is noted that the proposed development would take place in a number of phases. The applicant is requested to provide photomontages which reflect the different phases. These should include an interim landscaping. It is noted that earlier phases may be in place for a number of years prior to the construction of later phases. All boundary treatment and landscaping should be included in the photomontages.

Response

All of the photomontages submitted with the original application have been updated to reflect the revised site layout and building façade treatments as well as the new landscaping layout. Views are included in the EIR Volume 2 Technical Appendices prepared by Ramboll Engineers.

There are views from all the viewpoints agreed previously with young trees and mature trees for both Phase 1 and Phase 1+2. Please refer to this Appendix for a full explanation and location map.

The Design Statement includes photomontages of the new scheme compared with the original scheme to demonstrate the effort to reduce the visual impact of the design.



Original Scheme looking northeast from Falcon Avenue



Revised Scheme looking northeast from Falcon Avenue

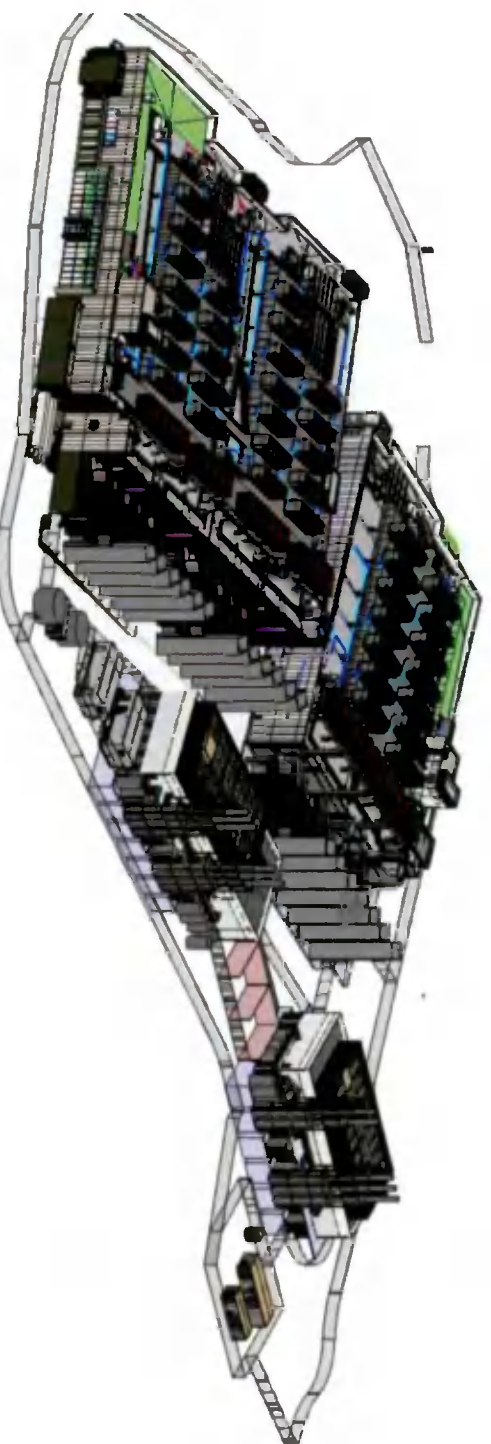
3. Scale of Development

(f) The diesel-powered electrical generators located to the immediate west are housed on site in a screened equipment yard located adjacent to the building and separated by an internal road. The applicant states the usage is only to supply power in the event of a utility outage. The Planning Authority would request further details and cross-sectional views on the stated 'buried' fuel tanks shall only be used where sub-base tanks are prohibited.

Response

The original design included an electrical yard to the west of the datacentres housing containerised generators each with integral "belly tanks". As part of the exercise to make the campus more compact this compound has been re-designed to reduce the footprint of the yard by double-stacking the generator sets. In addition, the generators are placed at an angle to the building and the flues moved up against the west facade. There is an air exhaust at the west end of each generator to eject heat from the engines. These flues are clad in powder-coated metal in alternating light and mid-grey colours to add some visual interest to this side of the buildings and obviate a flat wall of exhausts. The chimney height is 20 metres. Refer to Drawing DUB1-DR-00-A116-V0-PL-BMD

Fuel is stored in above-ground tanks in the base of the genset containers.



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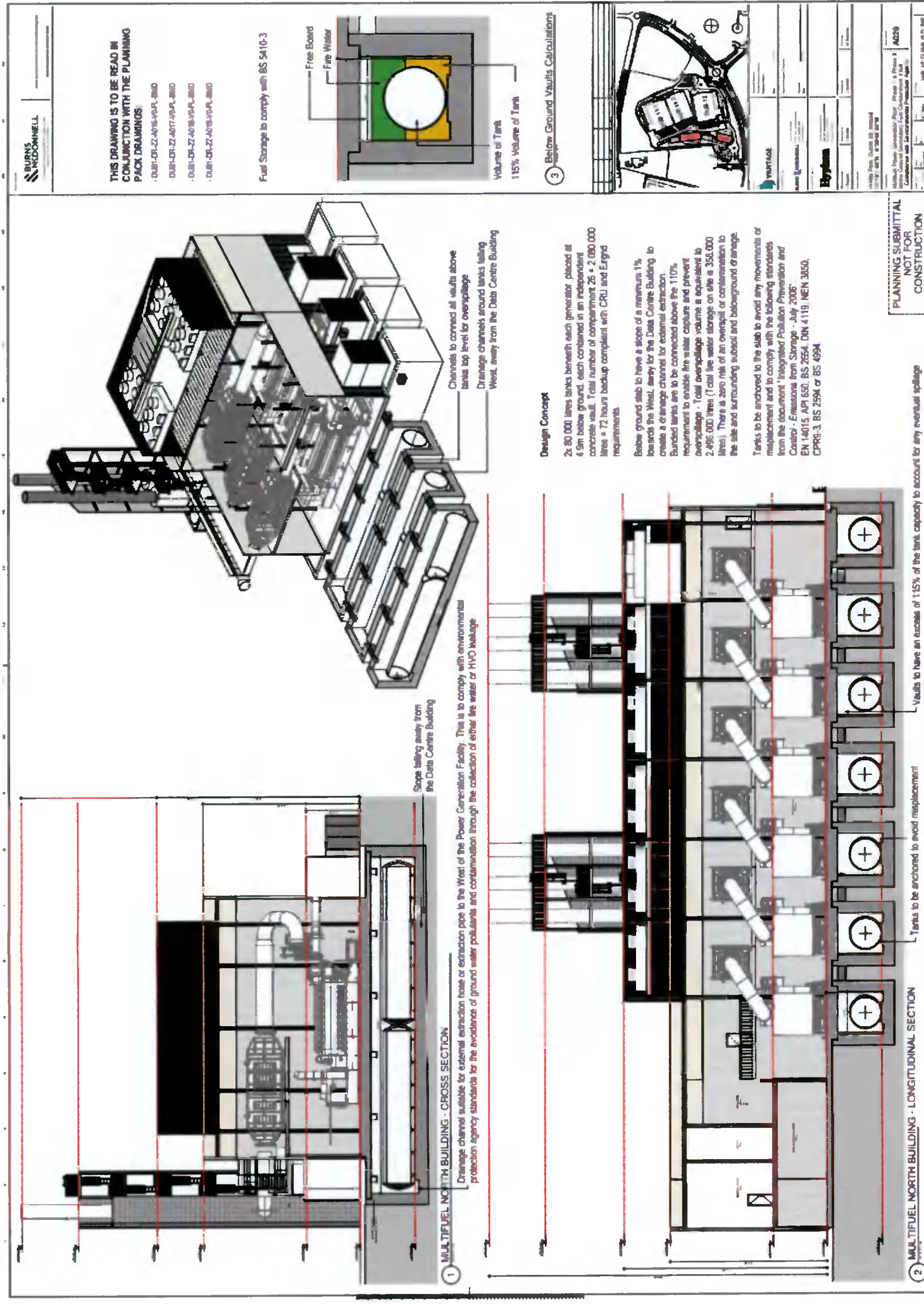
Additional Information - Design Statement Jan 27th, 2022

3. Scale of Development

Response

Power Plant – Further Information

The design of the Power Plant buildings has evolved since the original planning application. The building volume is increased to take account of the silencers and emissions reduction measures required to meet environmental standards. In addition, on-site fuel storage is part of the EirGrid agreement. Drawing DUB1-DR-ZZ-A020-V0-PL-BMD illustrates the developed design of the Power Plant buildings .



3. Scale of Development

(c) The applicant is requested to provide:

- (i) further details on the southern elevation of building 11. Details of temporary and final elevations should be provided, as it is proposed to construct this building under a number of phases.
- (ii) further details on the northern elevation for the permanent power plant. Details of temporary and final elevations should be provided, as it is proposed to construct this building under a number of phases.

Response

The Applicant has revised its phasing strategy such that there will be no temporary elevations on the DUB11 building. As both parts will now be built as a single phase, there are no temporary elevations. All permanent elevations are shown on Drawing DUB11-DR-00-A200-V0-PL-BMD.

The Power Plant will be built in phases as separate buildings with no temporary facades. The permanent elevations of the North Power Plant are shown on Drawings DUB1-DR-ZZ-A017-V0-PL-BMD and the South Power Plant on DUB1-DR-ZZ-A019-V0-PL-BMD.

(d) The applicant is requested to provide full details of all flues, in terms of location, scale and proposed materials. Details should be clearly set out in plans and elevations. Any temporary flues and the timeframe for removal should also be highlighted. It is noted that no roof plan has been provided for the temporary power plant.

Response 3(d)

The flues for the standby generators are on the west side of the datacentres – 22 in total on DUB11 and 14 in total on DUB12. The flues are grouped in five stacks of 4 flues and two stacks of 3 flues, all 22.3 metres in height. The finish is stainless steel. The flues are shown on the building elevations and roof plans.

Response 3(d) cont.

The temporary Power Plant and flues are omitted from this application.

The six flues for the North Power Plant and the five flues for South Power Plants are shown on the elevation drawings and the plans. They are 30 metres tall and finished in light grey cladding. There is a larger casing to the flues up to 20 metres high to conceal the silencers.

(e) It is noted that there are a number of inconsistencies between the description of development and the submitted plans and elevations:

- (i) **The permanent power plant, according to submitted plans provides the following: Height – Ridge 11.55m and eaves 9.5m, chiller deck at 12.5m. It is noted that the description of development sets out that this building is 13m high.**
- (ii) **The temporary power plant, according to the submitted plans, provides the following: Flue height 14.4m. It is noted that the description of development sets out that the flue are 25m high.**

Response

The design team have explored ways to reduce the height of the Power Plant building. In parallel the Engineering team have worked with the key engine supplier to refine the engineering design to achieve best in class performance in terms of emissions, noise and sustainability. The outcome for the building envelope is an increase in height of the radiator screen from 14.5 to 18metres, the building parapet from 12.5 to 13.90 and the chiller deck from 12.50 to 15.40 metres. The roof design is changed to a flat slab in place of the pitched roof on the original application. This allows the building to house the scrubbers, silencers and attenuators required to achieve the required environmental performance. To meet the emissions monitoring standard, the flue height is increased to 30 metres.