

DESIGN & ACCESS STATEMENT - UPDATED DESIGN

WORTHING ENERGY CENTRE

NORR

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Rev.D: Omission of car park rooftop plant enclosure and associated pipework.

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1.0 INTRODUCTION

1.1 The Project Team

Hemiko Limited are a specialist heating network developer who have appointed NORR to provide architectural design services to develop the design of the proposed Worthing Energy Centre.

1.2 NORR

NORR is an employee-owned, fully integrated architectural and engineering firm. Our professional team of 700 architects, engineers, planners and interior designers work collaboratively across 14 market sectors from offices located in the UK, Canada, the US and UAE.

Our mission is to create socially aware, environmentally responsible, and financially viable architecture and engineering design solutions to ensure our clients achieve their business goals while contributing to healthier and sustainable spaces and places across the globe.

Founded in 1938 by Canadian Architect John B. Parkin, we've been building on our reputation for inspired design for more than 80 years. We continue to advance design through sustainable stewardship, diversity of people, the power of technology and the pursuit of excellence for the built environment.

We are committed to core values that guide our actions and support our vision and mission:

- Be Responsible
  Environmental stewardship, sustainable design, equality and diversity
- Uphold Integrity
  Honest, trustworthy, accountable, ethical
- Embrace Creativity
  Innovative, imaginative, inspired, informed
- Engage in Collaboration
  Teamwork, sharing ideas and opinions, inclusive
- Show Leadership
  Vision, passion, impact, excellence

The following Design and Access Statement should be read in conjunction with the design drawings and information provided within the appendix.





2.0 CLIENT STATEMENT

This Design and Access Statement covers the proposed Energy Centre which will house equipment used to generate and distribute low carbon heat across Worthing Town Centre, via the Worthing Heat Network. The Energy Centre will serve the first phase of the heat network which has longer terms plan to grow further to decarbonize more of Worthing's building stock.

The Energy Centre will be a new building to be constructed on a plot of land on the High Street adjacent to the existing Guildbourne Centre car park to hold specialist equipment to generate and distribute heat around the heat network. Heat generation equipment will also be mounted on top of the existing car park and a service riser will run up the side of the car park to connect the Energy Centre and car park mounted equipment. A thermal store will be installed adjacent to the Energy Centre building which is an insulated tank of hot water required for the system to function. A HV substation will also be installed on the adjacent plot of land across the car park entrance road from the Energy Centre building. The heat source will be high efficiency industrial scale Air Source Heat Pumps (ASHP) with gas boilers providing back up and top up during peak demand periods.

The Energy Centre is a simple 2 storey steel frame structure designed to serve its purpose of generating low carbon and affordable heat to customers. The building houses noise producing equipment and is therefore specifically designed to prevent noise breakout to the surrounding public realm. This is achieved by avoiding glazing and utilising noise attenuating louvres and panels. Horizontal lines are incorporated into the design to visually tie the structure into the adjacent multi storey car park. A green 'living' wall will wrap around the building and thermal store, which will both be aesthetically pleasing and compliments its ultimate 'green' function.

The building is expected to be in place for up to 50 years after which point alternative heat sources are expected to be incorporated into the heat network as it grows and as low carbon heat generating technology evolves. There is also potential for the building to be removed in the nearer term in the event of redevelopment of the car park site as a whole.

Ultimately 3 no. ASHP heat absorber fan sets will be installed on the top of the existing multi storey car park once the Energy Centre site is fully developed. In the initial construction period only a single unit will be deployed, as initially this will satisfy the heat demand of the network. As the number of buildings connected to the network increases, the additional 2 units will be installed.

As discussed above the Worthing Heat Network of which the Energy Centre forms a critical element will bring significant benefits to the Town including:

- Delivering low carbon heat and significantly improving air quality in the town centre by offsetting gas combustion;
- Providing a simple and more economical option for the decarbonisation of heat in individual buildings within close proximity to the heat network;
- Providing a means to aggregate heat from sources not able to be accessed by single buildings such as recovering heat from waste water treatment plants;
- Create a greater incentive for developers to build in Worthing as meeting carbon emission regulations and local planning conditions will be cheaper in Worthing due to the heat network, thus influencing investment into Worthing;
- Speed up the decarbonisation of both Council and Privately Owned building stock, bringing substantial carbon savings earlier; and
- Providing new skills and jobs for local residents, as well as delivering additional local social value.

3.0 SITE ANALYSIS

3.1 Site Location

Address:
High Street, A259, Worthing Town Centre, West Sussex

Location:
The proposed Energy Centre will be positioned in Worthing's Town Centre, between the High Street (A259) and the existing Guildbourne Centre car park. The top deck of the car park will also be included within the project's site, resulting in a total combined area of approximately 3020m2.

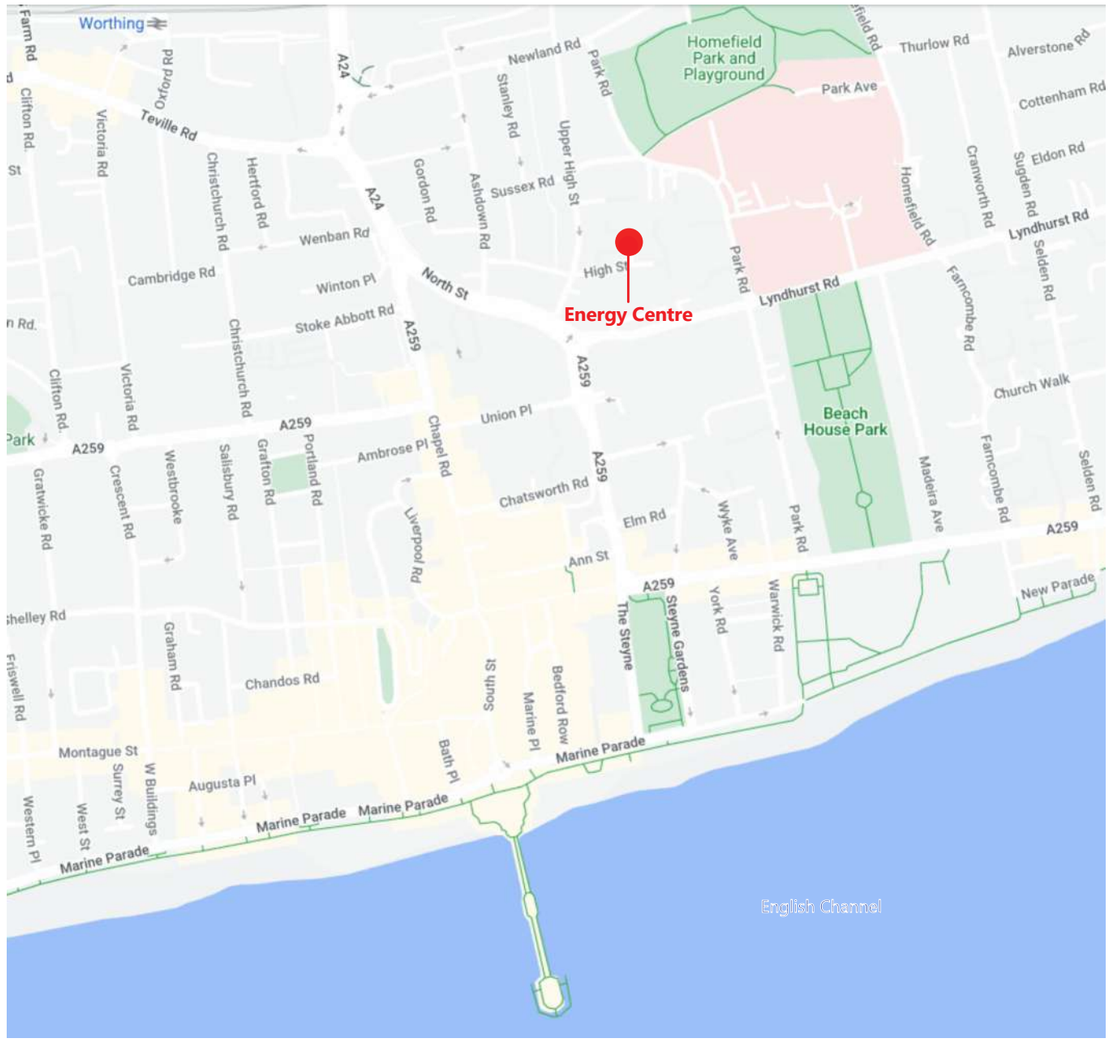
The surrounding area consists of various types of buildings: to the north / north-east, there are office buildings; to the east and the south, there's a mixed-use commercial / residential building, and to the west, The Guildbourne Shopping Centre.

Additionally, the site is adjacent to the Steyn Gardens Conservation Area to the east, the South Street Conservation Area to the south, and the Chapel Road Conservation Area to the west.

To generate heat, Air Source Heat Pump (ASHP) heat absorber fan banks and packaged gas standby boilers will be installed on the car park's top deck. This deck will be permanently closed to the public through security gates on the access ramps.



Site Location Map



Site Location Map in relation to Worthing

3.0 SITE ANALYSIS

3.2 **Site Context** - Aerial View and Adjacent Buildings



3.0 SITE ANALYSIS

3.2 **Site Context** - Aerial View Looking South (with the Worthing Pier and the local coastline visible)



3.0 SITE ANALYSIS

3.2 Site Context - Aerial View Looking North



3.0 SITE ANALYSIS

3.3 Views into the Site - from North on the High Street (A259)



3.0 SITE ANALYSIS

3.3 Views into the Site - from South on the High Street (A259)



3.0 SITE ANALYSIS

3.3 View of Car Park Roof



3.4 Views Around the Site



Commercial Buildings, Chatsworth Road - North / North West of Site



Commercial / Mixed Use Buildings, Chatsworth Road - North of Site



Commercial Building, facing High Street - North East of Site



High Street, facing South - North of Site

3.0 SITE ANALYSIS

3.4 Views Around the Site



Mixed Use Buildings, High Street - East of Site



Mixed Use Buildings, High Street - East of Site



Commercial / Mixed Use Buildings, Anne Street - South of Site



Commercial / Mixed Use Buildings, Anne Street - South of Site

3.0 SITE ANALYSIS

3.5 Local Architecture

Worthing is a seaside town located in West Sussex, England. Its architectural heritage is an eclectic blend of different styles and periods, reflecting its history as a popular Victorian and Edwardian seaside resort. The town also has some notable examples of vernacular architecture and architectural features as summarised:

Vernacular Architecture

While Worthing has seen significant urban development, some vernacular elements can still be found in older buildings and cottages. These include:

- Flint Cottages: Some traditional cottages in Worthing are constructed using flint, a locally available building material. These cottages often feature a distinctive flint and brick checkerboard pattern on their facades.
- Thatched Roof Buildings: Thatched roofs, though less common, can still be found in some rural areas around Worthing. These roofs are made from straw or reeds and are a charming and historic architectural feature.

These vernacular buildings are now scarce within the town centre, which predominantly features Victorian and Edwardian architecture, but are prevalent within Worthing's rural and suburban areas.

Victorian and Edwardian Architecture

The late 19th and early 20th centuries saw a significant expansion of Worthing as a seaside resort, leading to the construction of numerous Victorian and Edwardian buildings. Notable architectural features from this period include:

- Promenade and Seaside Architecture: Worthing's seafront features a picturesque promenade with Victorian and Edwardian seafront architecture, including decorative cast iron railings, ornate lampposts, and bandstands.
- Pier: The Grade II listed Worthing Pier, built in 1862 and reconstructed in the 1930s after a fire, is a key architectural feature of the town. It has an Art Deco design, and the pavilion at the end of the pier is a noteworthy structure.
- Edwardian Townhouses: In areas such as Warwick Street and Marine Parade, there are Edwardian townhouses with bay windows, decorative brickwork, and unique architectural details.
- Beach Huts: One of Worthing's notable architectural features is its rows of beach huts that line the seafront promenade. These are archetypal structures associated with the beaches of Sussex and they were first introduced in Worthing in the late 19th and early 20th centuries. These beach huts not only provide a functional space for beach-goers but also contribute to the town's nostalgic seaside atmosphere.

Modern and Contemporary Architecture

While Worthing is known for its historic architecture, there have been modern developments as well. Newer buildings tend to be a mix of residential and commercial structures, with contemporary designs that complement the town's existing architectural character. Examples include Splash Point designed by WilkinsonEyre, and Bayside Housing Development designed by Allies and Morrison.



Example of Flint Cottage in Worthing



The Promenade



Example of Thatched Roof Building in Worthing



Splash Point



Edwardian Townhouses on Marine Parade



Bayside Housing Development

4.0 DESIGN PHILOSOPHY

4.1 Pre-application

Hemiko previously developed a set of preliminary drawings for a pre-application submission to the council. The Energy Centre was proposed to be approximately 20 meters long, 15 meters wide, and 8.5 meters high over two stories.

The size of the Energy Centre building was determined by the specific requirements of the equipment it was designed to accommodate. The building's exterior finish was planned to use treated timber.

Pre-Application Feedback

The Local Authority's Pre-Application Feedback can be summarised as follows:

Visual Impact: The Local Authority is concerned about how the Air Source Heat Pumps (ASHP) will visually affect the area, particularly its character and visual appeal. See also 'Plant Screening Design' comments below.

Material Selection: Due to the prominent location of the building on High Street and its proximity to the Steyne Gardens Conservation Area, careful consideration of building materials is required. They suggest a contemporary design.

Planting: The Authority encourages the incorporation of planting around the building to enhance its surroundings.

Cladding Concerns: There are concerns about using natural timber cladding because of weathering and potential graffiti vandalism.

Design Context: They recommend that the design or cladding draws inspiration from the local context, such as beach huts.

Cycle path Integration: The provision of the proposed cycle path along the A24 should be allowed for along the site frontage.

View Assessments: Key views to the south and east need to be considered in relation to a plant mounted on the car park, especially with regard to the surrounding conservation areas.

Plant Screening Design: When developing the design for car park plant screening, lighter colours like white or grey should be considered to minimise its visual impact

Mixed-Use Development and Noise: The proximity of a potential mixed-use development and existing flats raises concerns about the visual impact and noise disturbance of the ASHPs. A Noise Impact Assessment report has been requested as part of the planning application.

Biodiversity Considerations: The removal of a semi-mature tree on the site will likely impact Biodiversity Net Gain requirements. The planning officer suggests options like a green roof and additional tree planting on or off the site to meet the Local Plan requirement for a 10% net gain in biodiversity.



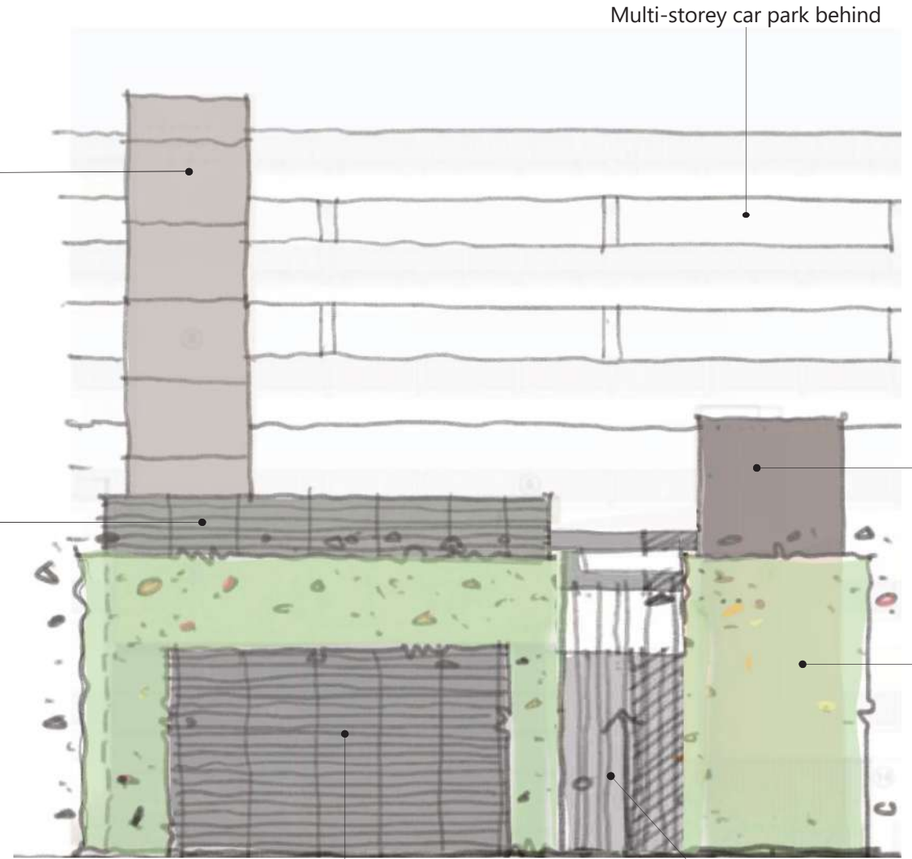
Pre-application Scheme - Aerial View



Pre-application Scheme - East Elevation

4.2 Design Rational

The design was developed taking on board the pre-application feedback and further comments during the planning consultation period. A summary of the design rational below outlines how we have positively responded to the feedback whilst refining the design and meeting all of the Energy Centre's services requirements.



External flue structure linking the Energy Centre to the car park rooftop plant. Clad in architectural perforated aluminium panels and painted in anthracite grey, this creates uniformity to the overall scheme and establishes a simple and effective material palette.

The top of the Energy Centre can be seen at high level. Clad composite metal profiled panels, the Energy Centre reveals itself as a cube above the green wall providing greater depth and visible 'layering' to the overall design.

The horizontal profiled cladding reflects the horizontal elements of the multi-storey car park behind providing continuity and context. The polyester powder coating finish will be in anthracite grey with a matt finish.

Thermal store painted in anthracite grey and wrapped by the green wall brings a greater cohesion to the external structure and overall scheme.

The feature green 'living wall' to the East and South Elevations provides a natural element, visually softening the overall massing of the Energy Centre whilst providing a unique and contemporary building that supports and enhances biodiversity.

Signage shown indicatively.

Removable panels to the East elevation provide the required future maintenance and plant equipment access

The vertical metal screen helps break up the overall massing on the scheme whilst providing glimpses through to the external pipework and functional elements behind.

5.0 DESIGN PROPOSALS

51 Site Layout

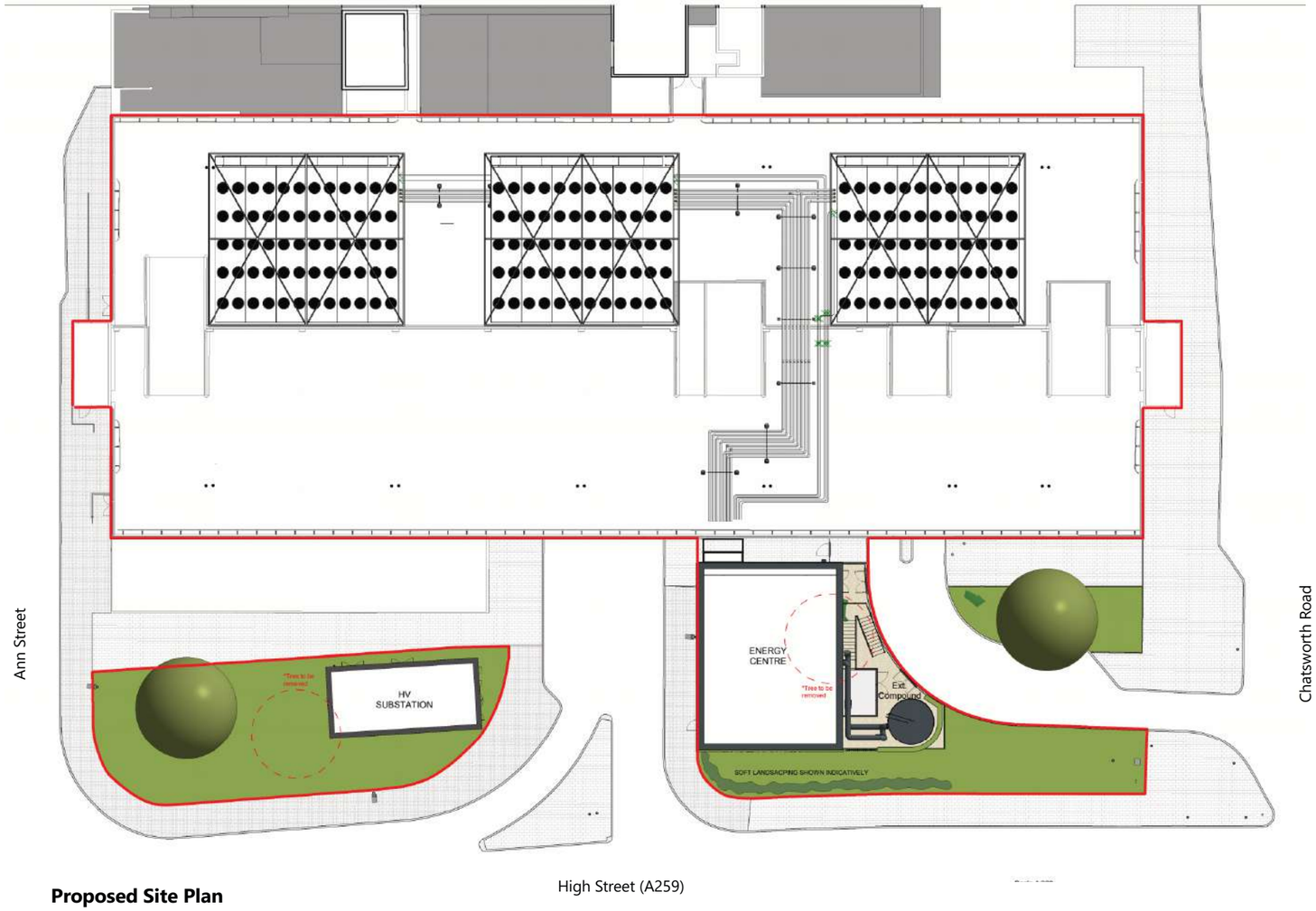
The proposed Energy Centre is positioned on the existing grass verge to the North-East of the car park. The building will be a two-storey building with a rectangular footprint.

A 2.4m high security fence with access gates enclosures the area to the north of the Energy Centre. This secured area will include a small gas kiosk building, the thermal store and external staircase providing maintenance access to the first floor of the Energy Centre. The fencing will be specified to allow climbing plants to grow up the side of it.

The proposed HV sub-station will be located on the existing grass verge to the South-East of the car park.

Additional proposed plant equipment will be located on the roof top of the car park.

Refer to the latest Site Layout drawing for further details.



Proposed Site Plan

(Not to Scale)

The Energy Centre site will be secured by a 2.4m high, steel, security trellis fence (hot-dipped galvanised finish). Examples of the proposed trellis security fencing and planting are illustrated below.





Example of Roma-3 Fence



Example of Planting to Fence

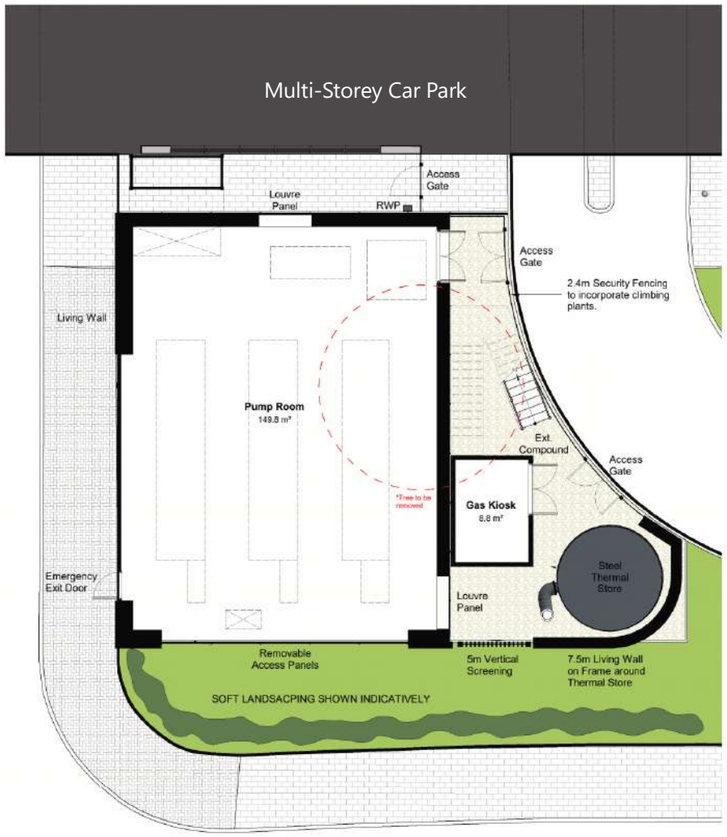
5.2 Energy Centre - Floor Plans

The Energy Centre is a two storey building with a rectangular footprint, approximately 11.4m wide, 14.8m long and 9m high.

The ground floor consists of an open plan pump room with various plant equipment. Double access doors are located in the North-West corner and a emergency escape door positioned opposite in the South-East corner.

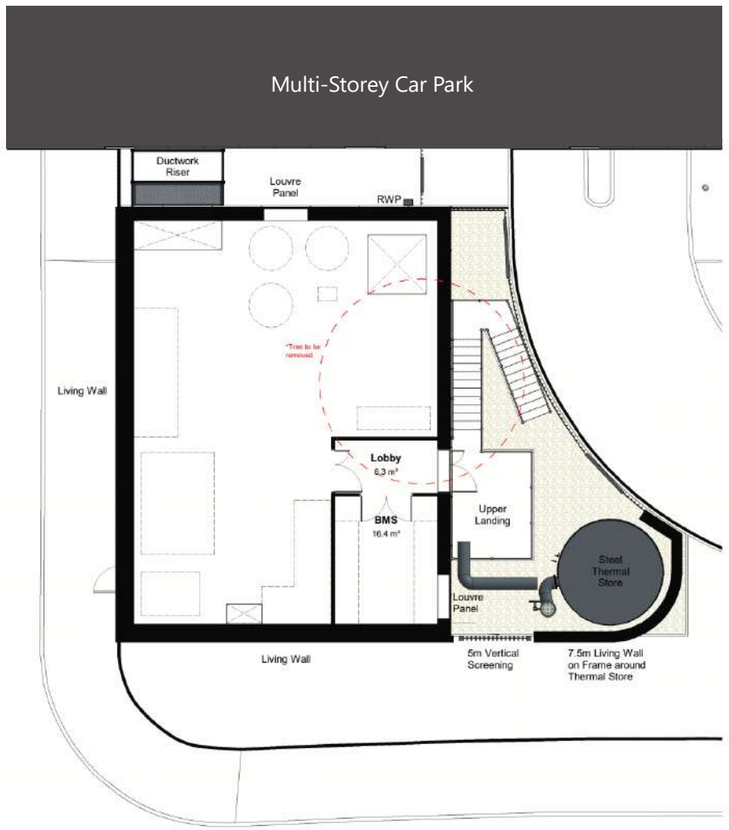
The first floor is access via the external maintenance staircase. Internally, a protected lobby provides access into a secondary plant room and the building management systems (BMS) room containing the BMS panels.

The roof is a flat roof with minimal falls to the down pipes positioned on the West elevation. The roof will have a perimeter parapet upstand and the finish with be a proprietary waterproof membrane roof system.



Proposed Ground Floor Plan

(Not to Scale)



Proposed First Floor Plan

(Not to Scale)

5.0 DESIGN PROPOSALS

5.3 Energy Centre - Elevations

Energy Centre

As detailed in 'Section 4.2: Design Rationale', whilst the design must adhere to the critical dimensions and functionality of the equipment housed within it, the external appearance has been developed taking on board the pre-application and planning consultation comments.

The two main elevations to the East and South are to have a green 'living wall' from ground level extending up towards the top of the Energy Centre. This provides a natural element, visually softening the overall massing of the Energy Centre whilst providing a unique and contemporary building that supports and enhances biodiversity. The elevations offer a sculptural and varied enclosure whilst still meeting the client's renewable aspirations and overall green ethos.

A combination of the green 'living wall', aluminium composite profiled panels and the anthracite grey colour finish used throughout the proposal, provides a robust, simple and contextual palette of materials. The green 'living wall' is the main focal element of the building which is complimented by the horizontal band of composite cladding in 'anthracite grey. The doors, louvres and removable panels are on the same anthracite grey colour, as are the external structures which are described opposite.

Vertical Duct Work Structure

Vertical duct work rises from the Energy Centre West elevation connecting to the rooftop plant at the top of the car park. To provide a sense of cohesion within the overall proposal, the duct work is framed with architectural aluminium perforated panels. These perforated panels will be painted in anthracite grey. This provides design and material continuity with the rest of the Energy Centre. The perforated panels will wrap around the duct work creating a transparent and lightweight structure.

This design adds a distinctive and unique structure to the overall Energy Centre whilst being an integral and fundamental part of the scheme and it's requirements.

Thermal Store & Gas Kiosk

Located to the North of the Energy Centre is the thermal store (storing water) and the gas kiosk. These are both fundamental to the operation of the Energy Centre.

The cylindrical thermal store will be approximately 11m high and 3.7m in diameter. The steel cylinder will be painted in anthracite grey and wrapped partially by the green wall.

The gas kiosk is a proprietary structure clad in glass reinforced plaster (GRP), approximately 2.8m wide, 3.8m long and 3.9m high. The colour of the gas kiosk cladding will be anthracite grey to match the Energy Centre's cladding. It is positioned underneath the Energy Centre's external staircase upper landing.

Proposed Energy Centre Elevations

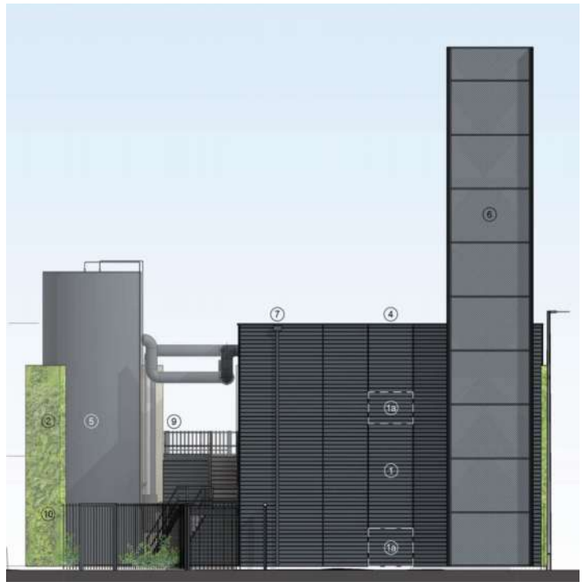
(Not to Scale)



East Elevation



South Elevation



West Elevation



North Elevation

5.0 DESIGN PROPOSALS

5.4 Energy Centre - Green 'Living' Wall

Summary

The proposals include a fully planted panel/ modular green wall proprietary system to achieve a dense coverage, as desired. The plants are pre-grown into panels and cultivated prior to the installation date to allow them to be robust and thrive.

The size, type and variation of the plants will be specified by a specialist green wall supplier. The specification is developed to consider the location, amount of exposure and orientation to ensure the most appropriate plants are grown and installed for the scheme.

There are 4 main components to the green wall: (1) timber stud frame fixed back to the building façade; (2) marine grade or PVC backing board; (3) drainage matt; and (4) planted panels - these use Rockwool that evenly distributes water, oxygen and nutrients. It does not decay or break down over time, and provides an ideal rooting and growing environment.

We anticipate the green wall will be watered using a hydroponic system that are irrigated by a drip irrigation method. The system links to an Irrigation Control Box (ICB) directly into the building's plumbing system. Using horizontal irrigation tubing, drip irrigation systems are self-watering, and can be set to release based on a timed schedule. These are much more efficient and successful than using a water tank.

The green wall that wraps around the thermal store will be similar to the above but as a free-standing proprietary system.



Example of a modular green wall positioned adjacent to a road and facing south



Example of a free-standing green wall positioned in front of a multi-storey building



Example of a modular green wall with added interest with its variety of plants



Example of a free-standing green wall system

5.0 DESIGN PROPOSALS

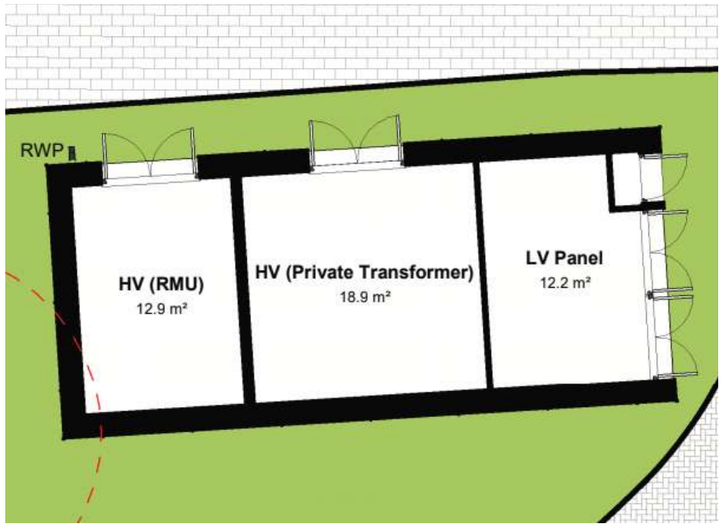
5.5 HV Sub-Station

The proposed HV substation will also be installed on the adjacent plot of land across the car park entrance road from the Energy Centre building.

The HV sub-station is a single storey building with a rectangular footprint, approximately 11.7m long x 5.3m wide 3.7m high.

The building will be clad with horizontal profiled cladding panels in anthracite grey to match the Energy Centre. Each of the doors will be in anthracite grey. The roof will have a minimal pitch and be finished in a proprietary waterproofing roof system.

Internally, there are four rooms all accessed externally and independently: HV (RMU) room, HV (Private Transformer), LV panel room and a meter room.

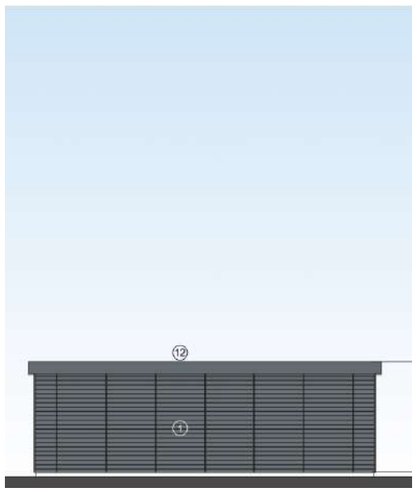


Proposed HV Sub-Station - Ground Floor Plan

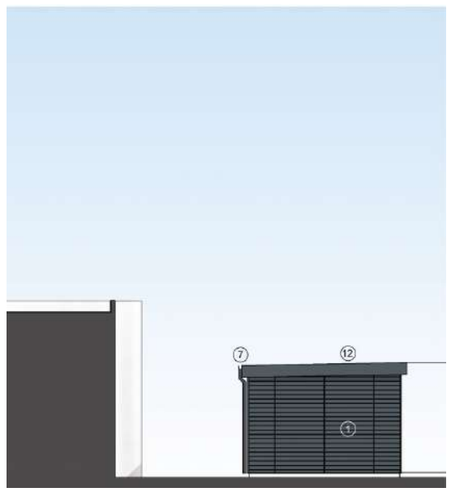
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Proposed HV Sub-Station - Elevations

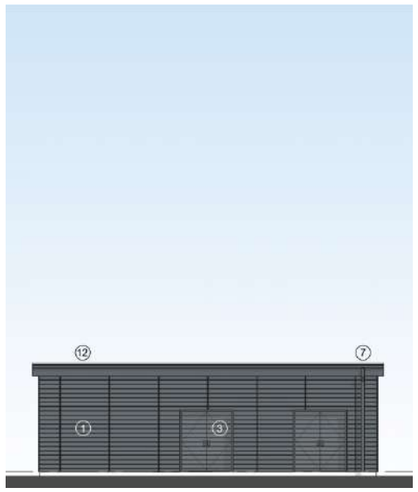
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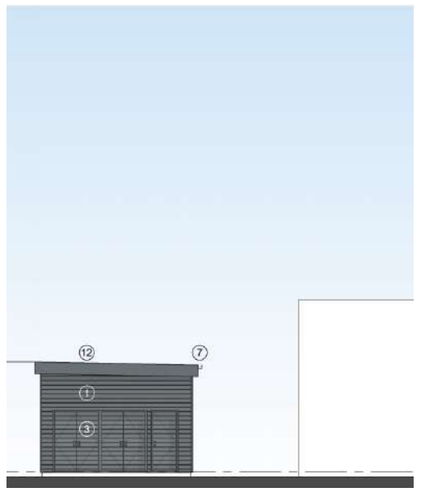
East Elevation



South Elevation



West Elevation



North Elevation

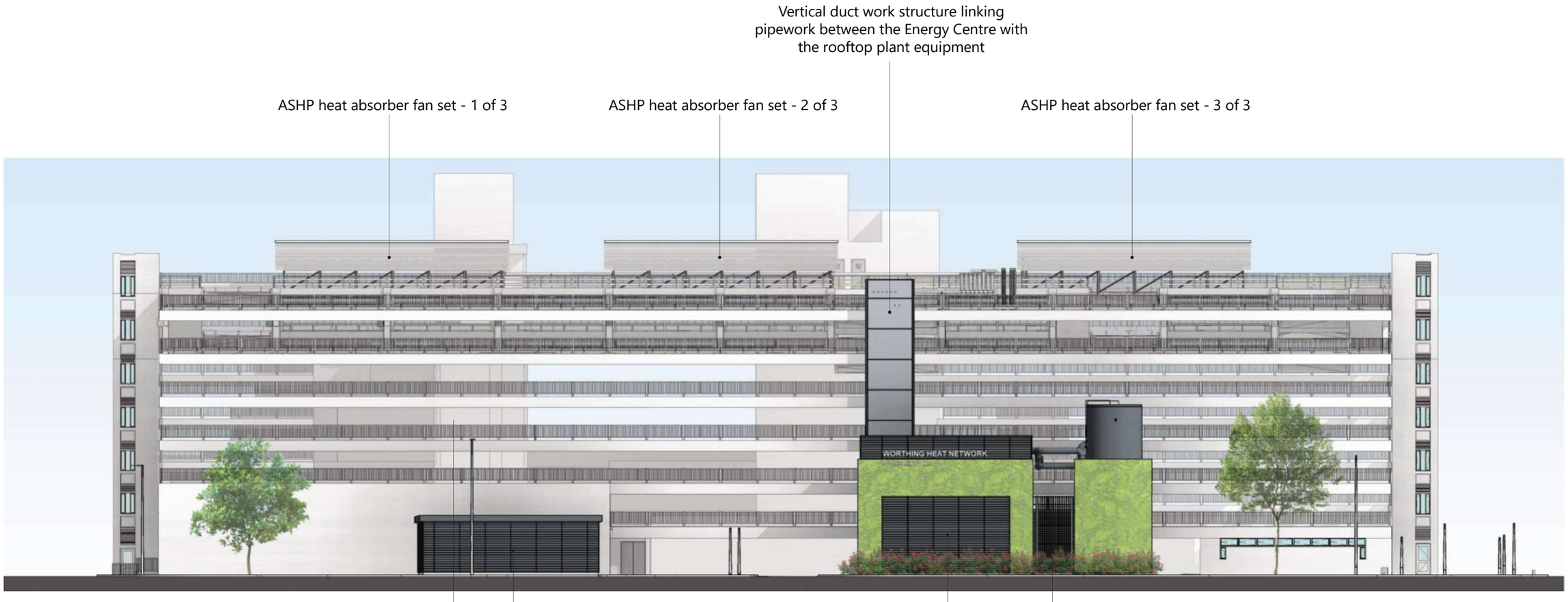
5.0 DESIGN PROPOSALS

5.6 Car Park Roof Top Plant

3No. ASHP heat absorber fan sets will be installed on the top of the existing multi storey car park. The ASHP units will be mounted on a suspended deck to allow the required air flow to circulate under the units. Each of the decks will be enclosed around the perimeter with solid acoustic metal panels, light grey in colour. The deck will be supported by steel posts below.

The ASHP fan sets will be installed in phases. In the initial construction period the first fan set will be deployed, as initially this will satisfy the heat demand of the network. As the number of buildings connected to the network increases, the additional 2 sets will be installed.

The images below illustrates the 3No. ASHP heat absorber fan sets, the perimeter panelling and the support posts supporting the suspended deck.



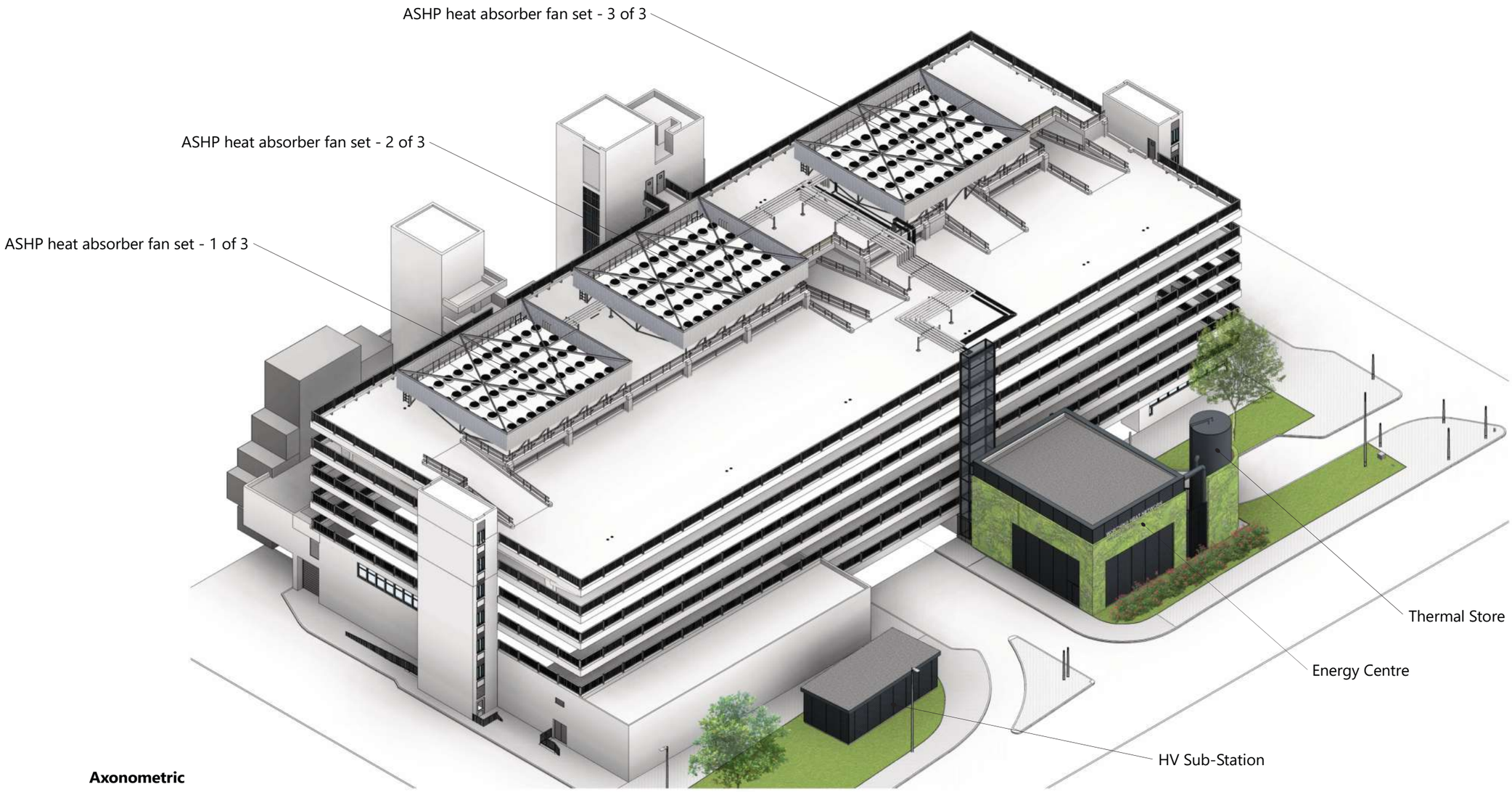
Site Context - East Elevation

(Not to Scale)

5.0 DESIGN PROPOSALS

5.6 Car Park Roof Top Plant continued...

The axonometric image below illustrates the 3No. ASHP heat absorber fan sets, the perimeter panelling and the posts below supporting the suspended deck. The pipework linking the Energy Centre with the rooftop plant equipment can also be seen distributing across the rooftop.



Axonometric

(Not to Scale)

5.0 DESIGN PROPOSALS

5.7 **3D Perspectives** - view from North East



5.0 DESIGN PROPOSALS

5.7 3D Perspectives - view from South East



6.0 ACCESS STATEMENT

Purpose of the Access Statement

Access Statements offer a framework for improving the quality of the buildings and spaces, by considering the way a building is going to be used and managed from the earliest design stages to completion and in-use/ occupation.

In addition to promoting an environment of social inclusion and diversity, the Statement can assist in highlighting any potential issues of access.

This statement should be read in conjunction with NORR's drawings and any other supporting documents (by others) submitted as part of this planning application.

Worthing Energy Centre

Accessibility and Future Enabling

We understand that Disabled Discrimination Act (DDA) and Building Regulations AD Part M compliancy is not a requirement for the Energy Centre due to the nature of the building, as with other similar buildings throughout the UK. It is worth noting that this is a deviation from UK standards typically applied to most other building typologies. However, where possible we have adopted various principles.

Vehicular Access & Parking

Proposed vehicular access will be along the High Street, on the East side of the site.

There is no requirement for dedicated parking spaces, due to the site restrictions and the car park located adjacent to the site.

Routes to Entrances

The site is reasonably flat resulting in the external personnel circulation routes being relatively flat with only moderate inclines/ declines well within the parameters prescribed in Approved Document Part M.

There is a dedicated maintenance access compound into the site to the North of the Energy Centre accessed via the secured gates.

Personnel Access and Means of Escape

The main Energy Centre personnel entrance is via double doors on the North Elevation. An alternative emergency exit door is positioned in the South East of the Energy Centre to comply with AD Part B's travel distances and means of escape.

On the East elevation there are three removable access panels to assist with maintenance and plant access in the future.

All entrances and exits will be level, have a slip resistant floor finish and be free from trip hazards.

Horizontal and Vertical Circulation

The Energy Centre is a two storey building and will have level thresholds throughout.

Corridors and door widths, manoeuvring spaces, surface finishes, colour and luminance contrast, lighting, control panels and switches will all be designed in accordance with best practice guidance.

There is one external staircase located to the North of the Energy Centre that provides direct access to the first floor. The staircases will be designed as a maintenance staircase. There is no requirement for a lift in the building.

Toilets and Changing Rooms

There is no requirement for a toilet or changing facility within the building.

Signage and Way-finding

A way-finding strategy will be established for the site. All external routes will be signposted and signs will be designed to meet the best practice guides.

Accessible Switches and Socket Outlets

All switches and socket outlets for lighting and other equipment will comply with Approved Document Part M and will be easily reachable and located at appropriate heights between 450mm and 1200mm from finishes floor level. All switches and socket outlets will be designed in accordance with best practice guidance.

7.0 CONCLUSION

The proposed Energy Centre will be a high quality, energy efficient, modern building.

As outlined in this document, the Worthing Heat Network of which the Energy Centre forms a critical element will bring significant benefits to the Town.

Key principles of the Energy Centre are:

- Delivering low carbon heat and significantly improving air quality in the town centre by offsetting gas combustion;
- Providing a simple and more economical option for the decarbonisation of heat in individual buildings within close proximity to the heat network;
- Providing a means to aggregate heat from sources not able to be accessed by single buildings such as recovering heat from waste water treatment plants;
- Create a greater incentive for developers to build in Worthing as meeting carbon emission regulations and local planning conditions will be cheaper in Worthing due to the heat network, thus influencing investment into Worthing;
- Speed up the decarbonisation of both Council and Privately Owned building stock, bringing substantial carbon savings earlier; and
- Providing new skills and jobs for local residents, as well as delivering additional local social value.

Therefore, Hemiko respectfully requests that planning permission be granted.

Making Life Better Through Intelligent Architecture