REVISED ENERGY STRATEGY SUPPORTING STATEMENT

Accel Consulting Ltd
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Montague Quarter: Energy Strategy Supporting Statement

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Montague Quarter: Energy Strategy Supporting Statement

1 Introduction

1.1 This document has been prepared by Accel Consulting Ltd for Cayuga 013 LLP

1.2 Accel Consulting Ltd were appointed by Cayuga 013 LLP to provide documentation in support of the revised Energy Strategy and to address condition 14 and 15 as required by planning consent AWDM/1624/22

1.3 Condition 14 states:

Sustainable Construction and Energy
A) The development hereby approved shall (unless alternatives are agreed in writing by the Local Planning Authority), incorporate the following sustainable energy and heat management measures, in accordance with the details in the Energy and Sustainability Report 11025 Rev 1 by Phlorum Consultants , dated 17th April 2023 submitted with the current application:
i) Energy efficient building fabric and mechanical ventilation;
ii) Air-source heat pump boiler system (or other such system incorporating renewable energy to achieve a similar outcome as shall first be approved in writing by the Local Planning Authority);
iii) LED internal & external lighting;
iv) Efficient water goods and fixtures to achieve <110L/Person usage/day;
v) Operational waste management.
B) Written confirmation, including independent professional verification, shall be submitted to and approved in writing by the Local Planning Authority, within 3 months of the first occupation of the development, (or such other time as shall first be agreed in writing by the Local Planning Authority), to confirm that these measures have achieved the target CO2 reduction contained in the Phlorum Report below the baseline model including renewable energy, and confirming the installation of water goods and fixtures to achieve a target of <110L/Person usage/day.
The verification document shall include any proposed and timetabled remedial measures if these targets have not been met, in which event the remedial measures thereby approved shall then be implemented in accordance with that timetable.

Condition 15 states:

District Heating
With the exception of any dismantling works, no development shall take place until a strategy to facilitate connection of the development to a future district heating network, have been submitted to and approved in writing by the Local Planning Authority. This shall:
i) identify potential routes for connecting pipework
ii) Identify an internal distribution system

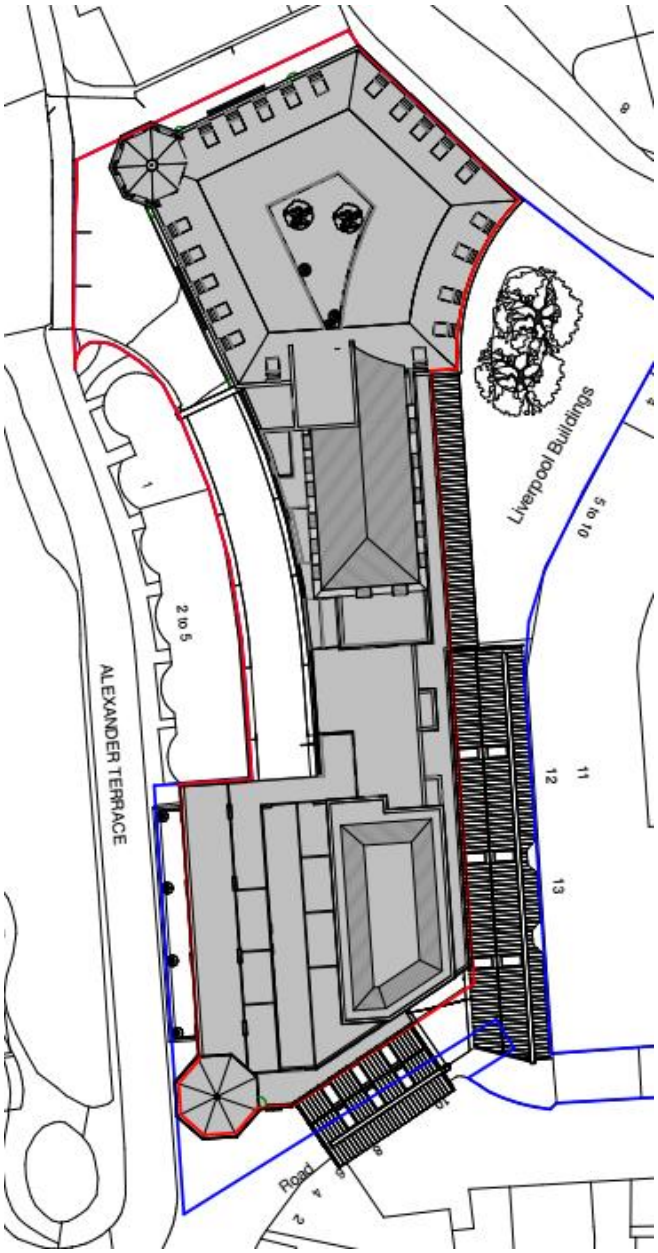
iii) identify plant room space for the future installation of heat interface) Include a strategy to facilitate the connection of the network to the development and adaptation / transition to the supply of heat from the network
The development shall be carried out in accordance with the details approved under this condition.

Site Context

1.4 The development consists of adding an additional 3 storeys above the Montague Quarter shopping centre in Worthing to provide 42 new residential units.

1.5 The site is located in Worthing town centre adjacent to Alexander Terrace as shown in figure 1.1 and is within a Conservation Area and in the setting of the listed Liverpool Terrace. The Desert Quartet sculpture on the west elevation is also a Grade ii listed structure.

Figure 1.1 Existing Site Location



2 Project Design Overview:

Existing Structure

2.1 After planning permission was received Accel, on behalf of the client, engaged the services of Stephen Wilson Partnerships – structural engineers to undertake an extension feasibility review of the existing buildings structural elements.

2.2 The first revision of the report had a number of caveats concerning the existing buildings capabilities to support the new flats above.

2.3 Extensive structural investigations including exposing pile caps, scanning and exposing columns and reporting on the design parameters during the period of construction to ascertain design tolerances were undertaken.

2.4 With the above structural investigations complete it has been determined the existing structure can accommodate the 42no flats above, but only with loading limitations which include lightweight metal frame and brickslips.

Fire Strategy & Sprinkler System

2.5 One of the key documents submitted at planning stage was Solas Fire Strategy, Sweco's Building Safety Unit was appointed to review the Fire Strategy and produce a fire Safety Feasibility Report. Extract below:

BS12845 system required to commercial and ancillary areas – this is correct for compartments greater than 100m^2 that will require this standard of system.

- This will require suitably sized sprinkler tanks (Solas Fire Strategy notes 100m^3 +)
- This will need to be carefully planned/located.

2.6 Finding space for 100m3 tank would be challenging in a new build project, trying to locate this in an existing commercially trading building is quite another task.

3 Project Constraints

Structural Constraints

3.4 The communal ASHP units required for the District Heating strategy each weigh 359kg. The new development may need up to 12 units which is a total of 4.3 tonnes.

3.5 As discussed above in section 2 the development is on the limits of the existing buildings structural capacity. Adding 4Ts of additional ASHP is just not feasible, the structural design does not have that sort of tolerances.

3.6 If we were to upgrade the proposed lightweight metal frame structure to cope with the extra loads imposed by the ASHPs the existing piled foundations could not be support it.

3.7 There is also the relocation of existing commercial plant to consider – at present we have not come to a conclusion / location for this but certainly can not add 4T on top of the current design.

Spatial Constraints

3.8 The Future District Heating system would require a plant room 9m x 7m, the only space we had available for this is potentially now required for the 100m3+ water tank for the commercial sprinkler system as stated above in section 2.5 & 2.6.

3.9 We have considered external locations for the ASHPs but given the number of units required, size of enclosure and the fact that we are within a conservation area there is no suitable location

District Heating Network (DHN) Limitations

3.10 Figure 2 below shows the DHN route, the Montague development in orange with the only potential route into the building indicated with a blue arrow.

3.11 The DHN route does not come within half a mile of the Montague Development and there is no current plans within the next 5 years to extend the DHN beyond the current route.

3.12 It is considered very unlikely a DHN 'branch' would be constructed to serve a development of 42 flats, there does not appear to be any other large scale connection opportunities enroute.

Figure 2 DHN Route



4 Revised Energy Strategy

4.1 Given the project constraints the Future District Heating connection is not a viable energy strategy for this development.

4.2 Condition 14 states:

ii) Air-source heat pump boiler system (or other such system incorporating renewable energy to achieve a similar outcome as shall first be approved in writing by the Local Planning Authority);

Phlorum were asked to review their Energy & Sustainability Strategy Report to investigate an alternative renewable and sustainable energy strategy for the development that would meet policy requirements.

Proposed Heating Strategy

4.3 Individual exhaust heat pumps provide greater CO2 reduction than the communal ASHP system as detailed within Phorlum's report dated Feb 2024.

4.4 The developments revised heating strategy meets Worthing Borough Council's emerging Local Plan, policies DM16 and DM17 without the need for a communal ASHP system and the future connection to a district heating network.

4.5 Phlorum's Energy & Sustainability Strategy Rev2 dated 22nd February 2024 has been submitted as part of this discharge of condition application and states:

5.6 As the proposed services strategy relies solely on electricity, the 54.6% reduction in CO2 from the 'be lean' scenario directly translates to the same reduction in regulated energy use. The proposed LZC strategy therefore exceeds the 10% energy reduction target from LZC technologies required under policy DM17. The overall strategy also significantly exceeds the 31% reduction below the Part L 2013 baseline required under policy DM16 and the 20% required from energy efficiency measures, achieving 68.7% and 31.0% respectively

4.4 The ESHP's provide a development heating solution that is economical for the individual flat owners, works within the existing buildings spatial and structural constraints while delivering on C02 reductions and sustainability requirements.

5 Conclusion

5.1 There has been extensive architectural, structural and mechanical design investigation in relation to the future connection of Montague Quarter to the district heating network. These studies have unfortunately shown due to the existing buildings structural limitations and plant room restrictions that an ASHP system is not achievable.

5.2 There is no imminent or future plans to bring the district heating network within reasonable connection distance of the development.

5.3 The revised heating strategy using individual ESHPs meets Worthing Borough Council's emerging Local Plan, policies DM16 and DM17, and delivers better C02 reduction than the previous proposal. It works within the constraints of the existing building structure and space

restriction as well as providing the eventual owners with a reliable and economic heating system.

5.4 Planning conditions and the s106 legal agreement will need to be addressed so they align with the revised heating strategy. This will be undertaken via the following actions

i) Condition 14 item ii) states:

Air-source heat pump boiler system or other such system incorporating renewable energy to achieve a similar outcome as shall first be approved in writing by the Local Planning Authority

The revised heating system and supporting documents will be submitted against the above to confirm the change of strategy.

ii) This document and Phlorum's revised Energy and Sustainability Report will be issued to Planning for the discharge of condition 15.

ii) A deed of variation will be instructed to address the district heating obligations within the legal agreement.