

WILLIAN ROAD, LETCHWORTH

2561 - Energy Strategy Report

A report prepared for and on behalf of:

Caring Homes Group Ltd





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EXECUTIVE SUMMARY

This document details the intended energy strategy for the proposed care home located at Willian Road, Letchworth. The development briefly comprises of the construction of a new 70 bed care home (Use Class C2) on the site and the associated works including car parking, access, landscaping, and associated engineering. This report has been prepared by Harniss Consulting on behalf of Caring Homes Group Ltd.

The ethos for the design of the proposed development follows the recognised energy hierarchy to “Be Lean, Be Clean, Be Green”, i.e. to minimise the building’s energy usage before applying low carbon technologies/renewables to the design.

Following the energy hierarchy, the building was found to be non-compliant with Building Regulations Approved Document Part L2:2021 without the use of additional renewable or low carbon technology. However, with the inclusion of full electric ASHP systems to serve the heating and hot water demands of the development, efficient technologies, and 150m² PV array, the development is compliant against Part L2:2021.

This Energy Statement supports the planning application for the proposed development of Willian Road, Letchworth in the North Hertfordshire District council area.

The Energy Strategy follows the Energy Hierarchy: Be Lean, Be Clean and Be Green. The overriding objective in the formulation of the strategy is to maximise the reductions in total CO₂ emissions through the application of the hierarchy with a technically appropriate and cost-effective approach, and to minimise the emission of other pollutants.

The development site will be constructed to comply with Part L2:2021 of the Building Regulations and in line with National and local planning policies to utilise low carbon and sustainability solutions.

The development will reduce regulated CO₂ emissions by incorporating a range of passive design and energy efficiency measures for the development, including improved building fabric standards beyond the requirements of Part L of the Building Regulations and energy efficient mechanical and electrical plants. These measures will enable the proposed development to exceed Target Emission Rates (TER) through energy efficiency measures alone.

After reduction of the energy demand, the strategy proposes implementation of an Air Source Heat Pump (ASHP) system connected to heating systems which will supply hot water and space heating to the entire development. Alongside this ASHP there will be the installation of a 150m² photovoltaic (PV) array to reduce CO₂ emissions.

Development Energy & Emissions

	(kgCO ₂ /m ² /year)	CO ₂ emissions (tonnes/year)
Development Baseline	11.81	40.10
After energy demand reduction (Be Lean)	10.27	34.88
After Heat network (Be Clean)	9.11	30.94
After use of renewables (Be Green)	8.01	27.20

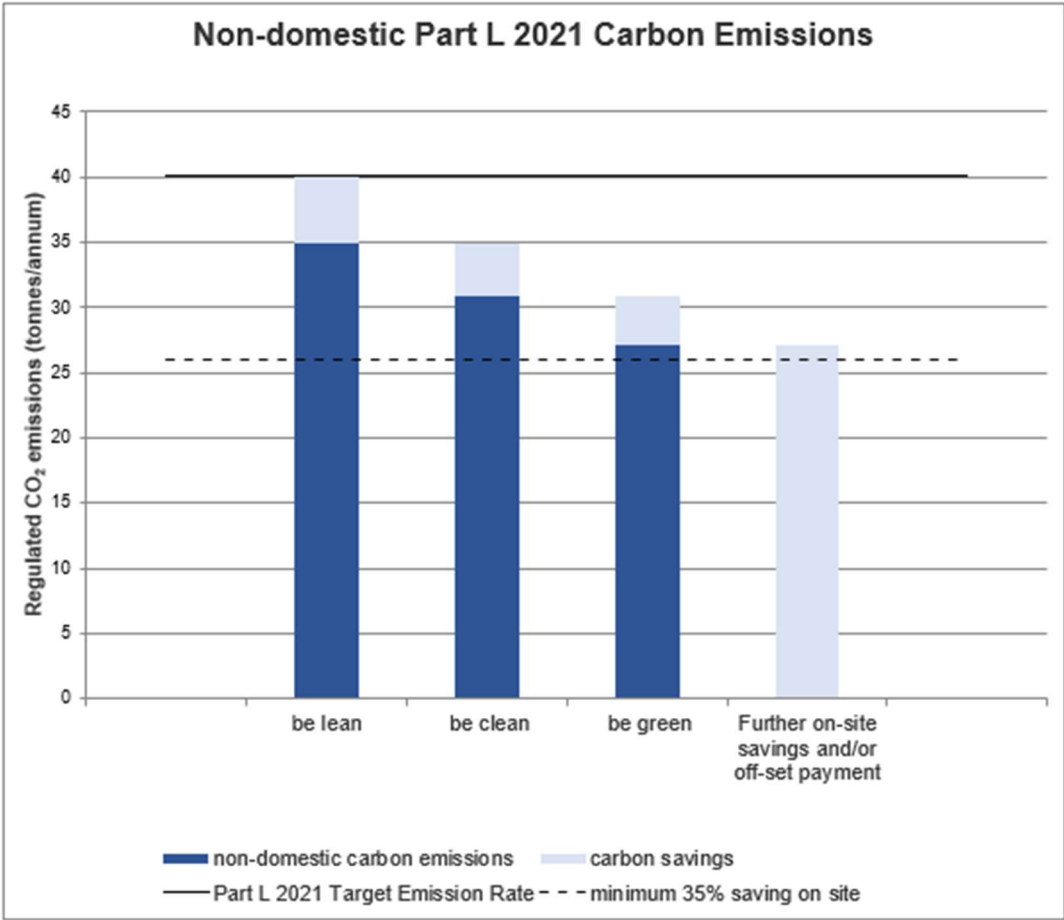
The regulated CO₂ savings for the entire development expressed in terms of actual and percentage reduction after each stage of the energy hierarchy are presented in the table below.

The energy strategy shows that the overall CO₂ emissions from both regulated and unregulated energy can be reduced by circa 12.9 tCO₂ per annum which is equivalent to circa 32% reduction.

	Energy CO ₂ Savings	
	Tonnes per annum	%
Development Baseline	11.81	N/A
Savings from energy demand reduction	1.54	13
Saving from Heat Network	1.16	11
Savings from renewable energy	1.1	12
Total cumulative savings	3.8	36%

The table above shows that the proposed strategy can achieve regulated CO₂ savings of circa tCO₂ which is equivalent to circa 36% reduction when compared to the baseline.

The overall reduction in regulated carbon emissions associated with the proposed design is graphically illustrated in the figure below.



Summary

In summary, the proposed energy strategy for the development:

- 1 Informs the built form and orientation of the buildings to respond to daylight and indoor comfort levels;
- 2 Includes optimal building fabric standards, energy efficient design of building services and energy efficient appliances;
- 3 Complies with Part L 2021 Building Regulations;
- 4 Includes a site-wide heating network with ASHPs to supply hot water and space heating throughout.

1.0 INTRODUCTION

Background

- 1.1** Harniss Consulting has been appointed by Caring Homes Group Ltd (the applicants) to produce an Energy Strategy Statement to support a planning application to build new 70 bed care home located at Willian Road, Letchworth.
- 1.2** To support the planning application this document identifies and describes the energy efficiency design and low carbon/renewable technology options that have been explored and the preferred options for achieving the required reduction in carbon emissions. This document has been produced to demonstrate how the proposed development can fulfil the relevant requirements of the Chiltern and South Bucks Local Plan policies.

Description of the Development

- 1.3** The proposed development consists of a new 70 bed care home (Use Class C2) with a GIA of 3396m² located in Willian Road, Letchworth, briefly comprising of:
- 70 bed care home with dedicated en-suites
 - Community spaces including
 - Main reception area
 - Café / Bistro
 - Lounges
 - Dining Rooms
 - Activity Areas
 - Plantroom housing air source heat pumps and associated ancillaries.
- 1.4** Our assessment has been based on the following architectural AutoCAD drawings, produced by Oliver + Robb Architects:
- 4870-ORA-01-ZZ-DR-A-32100-L-Lower Ground and Ground Floor Plan
 - 4870-ORA-01-ZZ-DR-A-32101-K-First and Second Floor Plan
 - 4870-ORA-01-ZZ-DR-A-33201-B-Proposed Massing Elevations (Indicat
 - 4870-ORA-01-ZZ-DR-A-33202-B-Proposed Massing Elevations (Indicat
 - 4870-ORA-01-ZZ-DR-A-33210-C-Proposed Elevation Sheet 1 of 2
 - 4870-ORA-01-ZZ-DR-A-33211-C-Proposed Elevation Sheet 2 of 2
 - 4870-ORA-01-ZZ-DR-A-37010-B-Comparative 'Typical' Bedroom (Exist
 - 4870-ORA-ZZ-XX-DR-A-37010-C-Rendered External Perspectives



Figure 1— Oliver + Robb Architects floor plan



Figure 2— Oliver + Robb Architects Site Plan

2.0 PLANNING POLICIES

Summary of Policy Requirements

- 2.1** This section summarises the relevant energy policy context for the development. The national & regional (if applicable) and local policies and regulations related to energy and sustainability are summarised below.
- 2.2** This scheme falls under the North Hertfordshire District Local Plan 2011-2031, which makes multiple references regarding the encouragement of renewable/ low carbon energy production.
- 2.3** The North Hertfordshire District local plan, policy SP11: Natural Resources and sustainability states ‘ This Plan seeks to meet the challenges of climate change and flooding, we will support proposals for renewable and low carbon energy development in appropriate locations.’ Further encouragement of developments utilising low carbon and renewable technologies can be found in policies SP1, D1 and the National Planning framework December 2023.
- 2.4** The development will need to comply with the current version of Part L as a minimum. The new Part L2:2021 document has recently been updated in-line with the current national stance on energy efficiency within buildings. Due to this it has become a more onerous document to comply with. This scheme has complied with the new and improved building regulations and has utilised large amounts of efficient technologies to do so. Meeting the new Part L2:2021 regulations the scheme has demonstrated energy efficiency throughout
- 2.5** The proposed development is designed to comply with the current Local Plan policy requirements.

In summary, the site should meet the following key energy and sustainability policy requirements:

- 1 Comply with Part L 2021 Building Regulations.
- 2 Integrate best practice sustainable design standards (as set out in the Environmental Design SPD), during design, construction and operation of the development
- 3 Select energy systems in accordance with the Local Plan energy hierarchy.
- 4 Provide a reduction in expected carbon dioxide emissions through the use of on-site low carbon/ renewable energy generation, where feasible.

3.0 ENERGY STRATEGY APPROACH

3.1 The proposed energy strategy for the development will follow the Energy Hierarchy approach of Be Lean, Be Clean and Be Green to enable the maximum viable reductions in regulated and total CO2 emissions over the baseline.

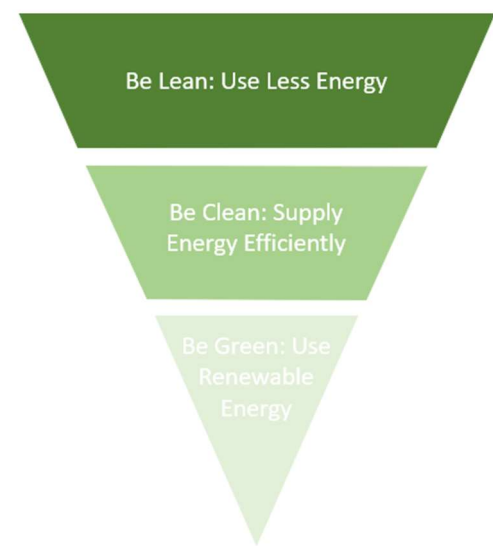


Figure 3 – Energy Hierarchy

- 3.2 The proposed energy supply solutions aim to:
- Comply with the relevant regulatory requirements;
 - Improve viability of the scheme by developing a technically robust and viable energy strategy;
 - Improve feasibility, operation and management of the energy systems by promoting holistic design methods and solutions.

Energy and Carbon Assessment Methodology

3.3 Analysis for the building has been undertaken utilising EDSL Tas software version 9.5.6. EDSL Tas is industry leading NCM accredited thermal modelling software which carries out dynamic hourly simulations of the anticipated energy usage and compares it against the notional benchmarks set under AD Part L2 of the building regulations. The software was initially used to determine a baseline carbon emission using fabric performance values as discussed with the development team (as detailed in the body of the report) without contribution from additional renewable technologies.

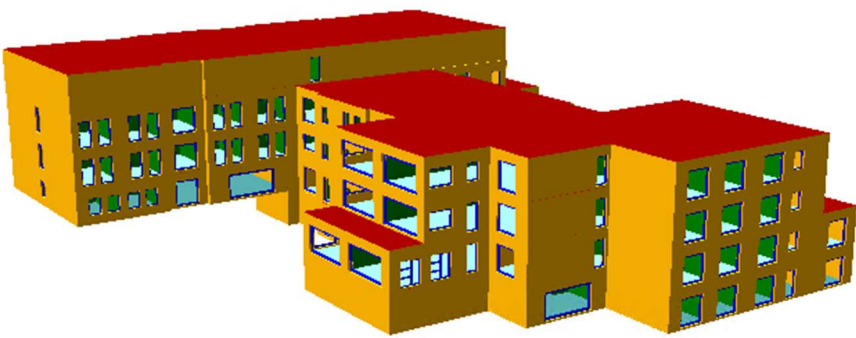


Figure 4— EDSL TAS Model Screenshot

- 3.4 An assessment of the energy performance of the development considers regulated energy usage for different building services such as cooling, heating, lighting and ventilation.
- 3.5 Although the produced data by the EDSL Tas software provides estimations of possible energy and carbon performance of the non-residential development for assessment purposes, again it is not intended to be used as a detailed design tool.
- 3.6 Further work will be required at later stages in the detailed design process to ensure that the requirement to comply with the above targets and that all statutory guidelines or local planning enforcement requirements are met.

4.0 BASELINE CO2 EMISSIONS

- 4.1 In order to assess CO2 performance of the proposed energy strategy, a CO2 emissions baseline needs to be established. This section sets out the approach taken to calculating the baseline CO2 emissions for the residential and the non-residential parts of the development.
- 4.2 The total baseline CO2 emissions for the proposed development is defined as regulated CO2 emissions covered by Building Regulations Part L.
- 4.3 For the development, the CO2 emissions baseline is determined based on the TER for building services calculated using EDSL Tas software.
- 4.4 The baseline CO2 emissions calculated using EDSL Tas software are based on the calculation of the energy consumption of a ‘notional’ building under the standard National Calculation Methodology (NCM). The regulated baseline CO2 emissions for the development is summarised below in table 4.1.

	(kgCO2/m2/year)	CO ₂ emissions (tonnes/year)
Development Baseline	11.81	40.10

Table 4.1 – Baseline Emissions

5.0 ENERGY EFFICIENCY (BE LEAN)

Passive Design

- 5.1 The proposed design incorporates optimal thermal characteristics of buildings to achieve and maintain good environmental conditions with minimum resources of material and fuel. The passive design aims to maximise use of natural heating, cooling and ventilation to create comfortable considering inside the buildings.
- 5.2 An optimal site layout and building with efficient room layouts are proposed.
- 5.3 It is proposed to incorporate passive solar design measures across the development. The building incorporates balconies which help to provide shading. The proposed glazed areas have been designed to maximise daylight and optimise solar gains. The glazing specification will be selected to provide a balance of solar control and access to passive solar gain.
- 5.4 Natural ventilation has been incorporated across most areas, however some zones have required an element of mechanical ventilation. These areas have been determined to be require the implementation of a mechanical ventilation strategy with heat recovery to supply fresh air and expel unwanted pollutants using a controlled and balanced ventilation strategy.
- 5.5 Openable windows and balcony doors are available to provide fresh air.
- 5.6 The ventilation strategy will be reviewed and developed as the design progresses to ensure compliance with all the relevant regulations and standards.

Building Fabric

- 5.7 Part L of the 2021 Building Regulations for non-residential buildings highlights the need for an energy efficient design. The minimum building fabric requirements for Part L 2021 and the proposed specification for individual building elements for the non-residential floor space are presented in Table 5.1.

Building Fabric Parameter	Value
Air permeability (m3/(m2.h) @ 50Pa)	5.0
External Wall U-value (W/m2.K)	0.19
Roof U-value (W/m2.K)	0.13
Ground Floor U-value (W/m2.K)	0.15
Glazing U-value (W/m2.K)	1.4
Glazing G-value	0.4 (As Amended)

Table 5.1 – Proposed fabric energy efficiency targets

In order to adhere to solar gain requirements, changes were made to the G-Value on some of the windows. These amendments can be found in appendix C.

- 5.8 Implementing these (or similar) building fabric standards will help to deliver substantial reductions in CO2 emissions compared with the current building performance and regulations. The proposed specification should be viewed as guidance.
- 5.9 A significant improvement over limiting U-values within Building Regulations. The thermal performance of the building envelope has been maximised to its fullest within the constraints of a traditional build with 100mm cavity.
- 5.10 Air permeability improved over the limiting value. The target will be to improve yet further on the air permeability during the construction phase but given the relatively small percentage of total energy that the heating system contributes to, any further gain will result in minimal actual reduction against the Target Emission Rate calculated under Approved Document Part L.

Energy Efficiency Systems

- 5.11 Energy demand can be significantly reduced by using energy efficient M&E systems. The below energy efficiency measures for the proposed development have been used to carry out the energy and carbon modelling for this report. The overarching principle for final selection of the building fabric standards and energy efficient systems is to achieve compliance with Part L 2021 requirements.

Lighting

- 5.12 A major energy demand within modern non-residential developments is typically the lighting loads. Specified lighting in these areas should be low wattage and designed to CIBSE Illuminance levels. Appropriate lighting controls are recommended where appropriate, such as PIRs and daylight dimmers, allowing light output to be automatically adjusted to suit prevailing conditions. Zoning of lighting circuits also allows greater benefit to be made of natural daylight in the areas where it is available, without compromising light levels further away from windows. Additionally, high frequency ballasts and control gear should be utilised where appropriate to further reduce energy demand.
- 5.13 Display lighting may be required which generate a significant energy demand. Therefore, if applicable, it is proposed that all display lighting should use energy efficient luminaires.
- 5.14 This development has improved efficacy lighting specified which reduces primary energy usage.
- 5.15 Automatic lighting controls used throughout, where appropriate for care i.e. proximity infrared used throughout in ensembles, bathrooms, stores, etc. Absence detection controls have also been included in the energy strategy and have been provided to all day spaces and offices.

Ventilation

- 5.16 Air tightness standards will exceed Approved Document Part L requirements. Mechanical ventilation with heat recovery has been modelled for the purposes of this report.
- 5.17 Improved SFP's for ventilation systems including high efficiency heat recovery.

Heating and Cooling

- 5.18 The estimated hot water demand will be significant due the nature of the development use. However, it is expected to present a consistent load throughout the year, although there will be peaks and troughs in daily use. This hot water demand will be effectively be supplied by a centralised air source heat pump.

- 5.19** The space heating load does not present a consistent demand and is seasonal in nature. It will also be minimised through the application of the proposed energy efficiency measures modelled for this report. During the summer months, space heating may not be needed or its requirement will be relatively low.
- 5.20** At this stage, it is assumed that space heating can effectively be provided by a standalone energy efficient heating system such as Air Source Heat Pump (ASHP). It is recommended to select a ASHP system with a high Seasonal Coefficient of Performance (SCOP). For the purpose of energy modelling at the Be Lean stage, a ASHP with seasonal efficiency of 300% was assumed for the development energy modelling guidance.

Cooling

- 5.21** At this stage, it is assumed that cooling will need to be provided to the development in certain specific spaces. The cooling requirement has been minimised by the proposed solar gain control measures. Cooling can be effectively provided by a Variable Refrigerant Flow (VRF) system. It is recommended to select a VRF system with a high SCOP/SEER. A SCOP/SEER of 3.42 has been assumed for modelling purposes.

Energy Metering and Monitoring

- 5.22** It is assumed that metering and submetering within the development of major energy consuming systems together with an accessible energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol will be provided.

Overall strategy

5.23 The overall energy efficiency strategy is summarised below in table 5.1.

Weather File	London TRY
Electric Heating System	
Heat Source	Heat Pump (electric): air source
Fuel Type	Grid Supplied Electricity
Seasonal Efficiency	320%
Circulation Pump	Variable speed, pressure control across pump
System Controls	Central time control, Weather Compensation control
VRF Heat Pump System	
Heat Source	Heat Pump (electric): air source
Fuel Type	Grid Supplied Electricity
SEER	3.42
SCOP	5.66
DHWS System	
Heat Source	Heat Pump (electric): air source
Fuel Type	Grid Supplied Electricity
Seasonal Efficiency	300%
Ventilation Systems	
Overall supply and extract SFP	1.2W/l/s
Min. heat recovery efficiency	80%
Overall extract SFP	0.2
Kitchen extract SFP	1.0W/l/s
Lighting	
Lumens / circuit Watt	110

Table 5.1 – Anticipated CO2 emissions after energy demand reduction

CO2 Savings after Energy Demand Reduction (Be Lean)

- 5.24** Based on the development build and proposed energy efficiency measures for modelling purposes, the Building Emission Rate (BER) for the development has been calculated using EDSL Tas software which provides an indication of the anticipated CO2 emissions of an ‘actual’ building under the standard National Calculation Methodology (NCM).
- 5.25** The BER results from the BRUKL reports for the Be Lean stage are summarised below in table 5.2 alongside the Baseline.

	(kgCO2/m2/year)	CO ₂ emissions (tonnes/year)
Development Baseline	11.81	40.10
After energy demand reduction (Be Lean)	10.27	34.88

Table 5.2 – Anticipated CO2 emissions after energy demand reduction

- 5.26** The CO2 assessment shows that by implementing the energy efficient design, the regulated CO2 emissions can be reduced by circa 5.22 tCO2 per annum for the entire development, which equates to circa 13% reduction in regulated CO2 emissions over the baseline.

6.0 EFFICIENT ENERGY SUPPLY (BE CLEAN)

6.1 The energy demand of the development has been assessed using the proposed building fabric and energy efficiency measures to inform the most appropriate energy supply strategies for the development.

Energy Supply Options Assessment

6.2 The feasibility of a building wide heating network as a Be Clean measure has been evaluated. Following reduction of the energy demand, this strategy must demonstrate how systems will supply energy efficiently and reduce CO2 emissions by following the hierarchy detailed below.

- Connection to existing area wide heat networks;
- Use of site-wide heat network or building level heating system;
- Individual heating system.

6.3 The inclusion of a decentralised heating network has been investigated in terms of appropriateness to the proposed development as it can help to provide the greatest reductions in CO2 emissions.

Connection to Existing District Heating Networks

6.4 The site falls outside of the London Heat Map, however an investigation using the Heat Networks Planning Database has been carried out to identify existing and planned district heating networks in the vicinity of the site. The search provided in Figure 6.1 indicates that there are no existing or proposed heat networks within close proximity of the site. The site is also found within an area of low heat demand.

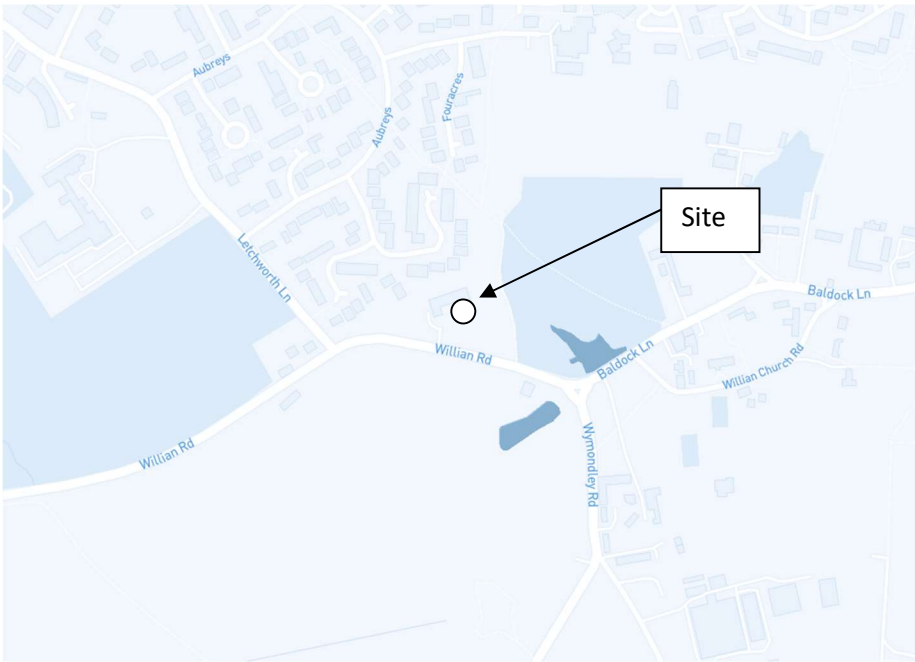


Figure 6.1 – Local Heat Network search

6.5 Given the lack of nearby district heating or community heating infrastructure to connect to at present or in the near future, an on-site energy supply option will be implemented.

7.0 RENEWABLE ENERGY (BE GREEN)

- 7.1 The ‘Be Green’ element of the energy hierarchy uses renewable energy technologies to provide a further reduction in anticipated carbon dioxide emissions, through on-site generation where feasible.
- 7.2 The following low and zero carbon technologies have been considered and compared for this particular development:
- Air Source Heat Pump (ASHP)
 - Ground Source Heat Pump (GSHP)
 - Photovoltaic Panels (PV)
 - Wind Turbines
 - Biomass Boiler
- 7.3 The assessment of these technologies shows that ASHPs and PV are considered to be the most suitable renewable energy options for the development. All other renewable energy technology options are considered to be less suitable or unviable. A summary of the assessment is provided in Appendix A.

Communal Air Source Heat Pumps

- 7.4 Heat pumps take a low-grade source of heat e.g. a lake or external air, and through a process similar to that of a domestic refrigerator, “upgrade” the heat for use in a heating system, or for domestic hot water generation.
- 7.5 Reverse-cycle heat pumps can also use the same process in reverse to provide cooling if required. For the purposes of this report, given the nature of the development and typical service strategy is assumed that any heat pumps installed will only operate in heating mode. Although there are several day spaces that require cooling, the typical servicing arrangement would suggest these are best fed from local plant rather than the introduction of multiple heat pump units, chilled pipework and equipment etc.
- 7.6 Air source heat pumps operate on the same principle as ground source heat pumps, but instead of using the Earth as a heat source, they extract heat from external air. Heat pumps that generate significant amounts of heat will require external plant areas.

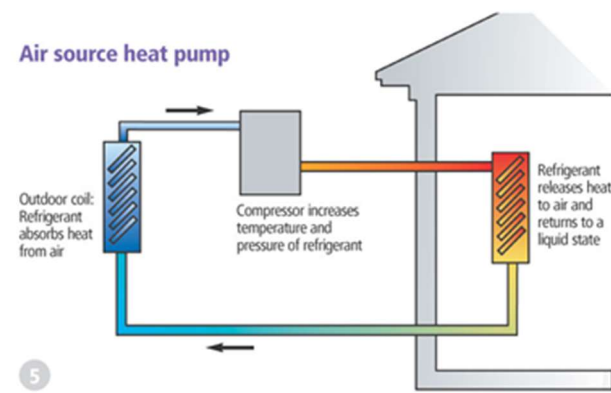


Figure 7.1—Air Source Heat Pump

Photovoltaics

- 7.1 A PV system uses layers of semi-conductor material to produce electricity generated directly from sunlight. Several types of PV are available with varying costs and performance.
- 7.2 The efficiency ranges around 20% for high performance panels, based on peak output under ideal conditions. For panels to function effectively, they must be installed in an unshaded location, and correctly orientated based on the site latitude.
- 7.3 The PV panel system proposed of 150m² requires a roof area of 275m². PV panels are mounted on a metal racking system which are typically angled at between 5 and 30 degrees to improve the energy capture, for maintenance the system requires access paths, provided with man safe system where required. Visual impact has to be taken into consideration, PV solar system installation will be prevented on sloping roof and therefore will be visible. The intermittency and unpredictability of solar energy due to weather is an element which can dictate that the system is not used at full potential. A further consideration is the additional structural provisions support the photovoltaic panels and metal racking system which for a system of this size is considerable.



Figure 7.2 —Roof mounted PV panels



Figure 7.3—Frame mounted PV on flat roof

- 7.4 By generating the energy on site through photovoltaics the associated emissions will be 0.0kg/CO₂.m² compared to 0.0275kg/CO₂.m² for grid supplied electricity. Over the 25-year lifespan of the photovoltaic installation the cumulative CO₂ that would have otherwise been emitted is 110.43 Tonnes.

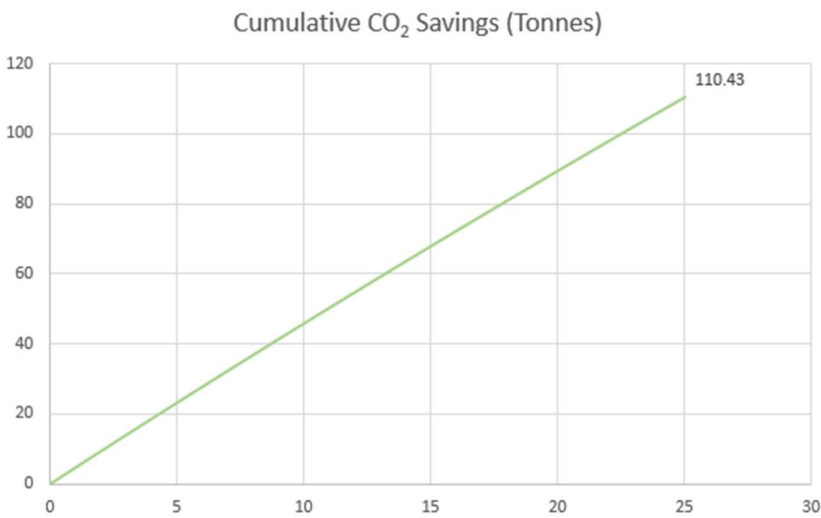


Figure 7.4—Cumulative PV CO₂ savings

CO2 Savings from Renewable systems

7.1 The energy model assessment shows that by using the proposed renewable energy technologies for the development, it is possible to achieve a reduction in CO2 emissions of approximately 12.9 tCO2 per annum for the entire development. This is equivalent to a reduction in the regulated CO2 emissions of circa 32%. These total emissions savings are summarised in Table 7.1 below.

	(kgCO2/m2/year)	CO ₂ emissions (tonnes/year)
Development Baseline	11.81	40.10
After energy demand reduction (Be Lean)	10.27	34.88
After Heat network (Be Clean)	9.11	30.94
After use of renewables (Be Green)	8.01	27.20

Table 7.1 – Total CO₂ emissions after use of renewable technologies

8.0 PAYBACK

- 8.1 In order to establish the life cycle cost for the renewable systems the report will need to establish costing for Energy Consumption, Energy Generation, Maintenance and Estimated Fuel Tariffs. Based on the current Tariffs known of the operator of 12p/kWh and 56p/kWh for gas and electricity, respectively, the following can be calculated.
- 8.2 To achieve compliance with Approved Document L2: 2021 150m² photovoltaic panel array is required to be placed on the building. This is estimated at an installation cost of £45,300. Following the estimated electrical generation of the array based on the building location a payback period of 3.4 years has been calculated with a saving of £288,729 as over the 25-year life span of the installation. This can be seen as a reasonable worst case for the array with the above calculation accounting for a reduction in output of 0.5% per year and assuming no inflation in energy prices. Should the average inflation in energy prices of energy prices over the last 20-years (4%) be included in the calculation the saving over the installation lifespan increases to £511,949. See figure 8.1 below.

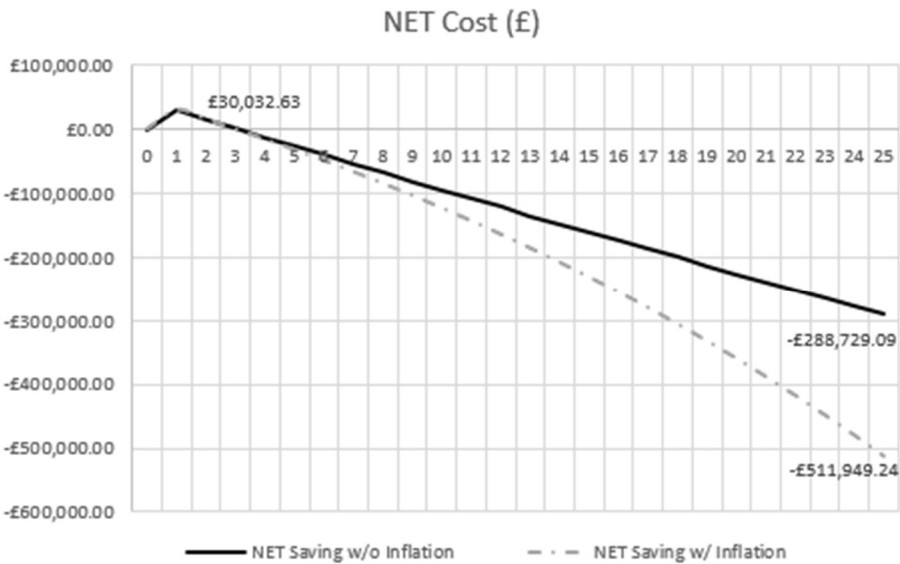


Figure 8.1 – Payback forecast PV

- 8.3 However, it should be noted that whilst the installation of a photovoltaic array will have a reduction in the operational running costs of the development the installation of an ASHP will be negative with an additional running cost compared to gas boilers of an estimated £581,173 (rising to an estimated £766,481.83 accounting for inflation). See figure 8.2 below.

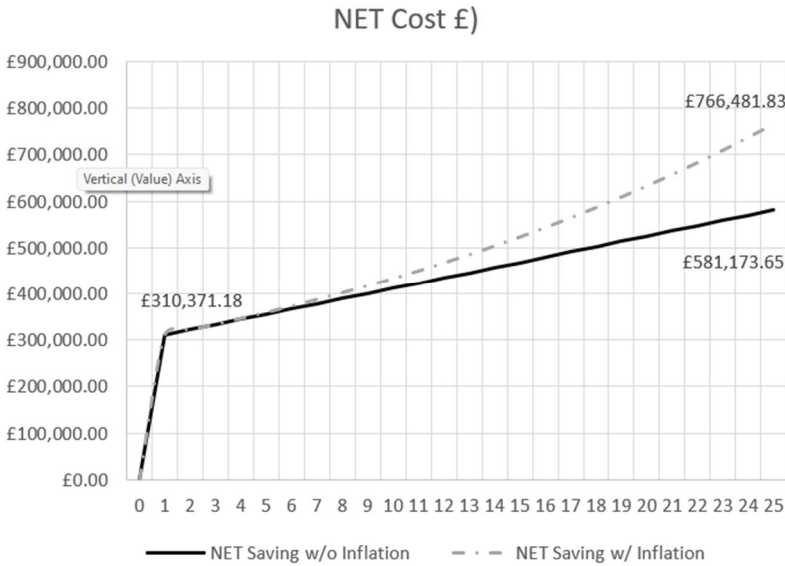


Figure 8.2 – Payback forecast with ASHP

- 8.4 Whilst the ASHP provides a negative running cost compared to a traditional gas boiler system once the low carbon and renewable systems are paired together, they provide an overall loss of only £254,532.59. However, once this figure is adjusted for inflation the systems provide a saving in energy costs of £292,444.55 over a 3-year period and would break even circa 161.6 years of the systems being operational. See figure 8.3 below.

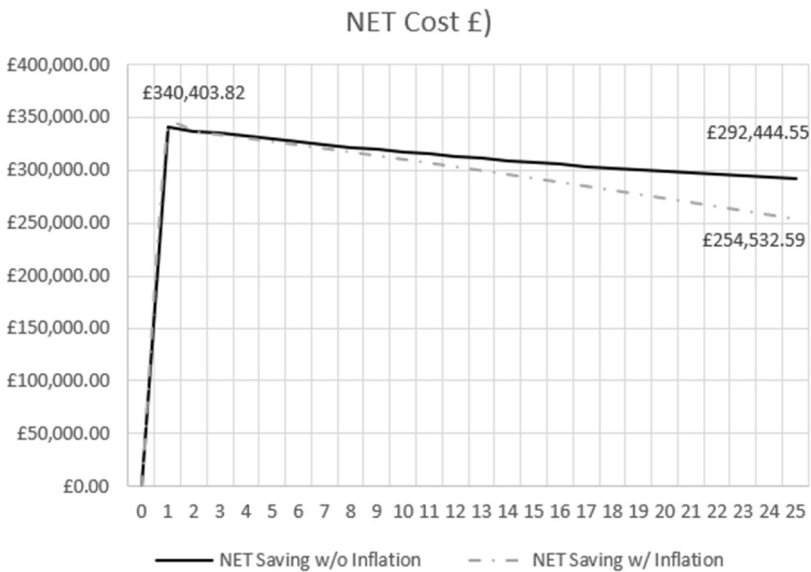


Figure 8.3 – Combined technology payback forecast

9.0 SUMMARY AND CONCLUSION

9.1 The Energy Strategy for the development has been formulated following the Energy Hierarchy: Be Lean, Be Clean and Be Green. The overarching objective in the formulation of the strategy is to maximise the reductions in total CO2 emissions through the application of this hierarchy with a cost-effective and technically appropriate approach and to minimise the emission of other pollutants. The energy strategy measures are summarised and presented in Table 9.1 below.

Energy Hierarchy	Energy Strategy Measures
Be Lean	Passive design Compact building form, efficient layout Optimised design to enable controlled solar gain and improved direct and indirect natural lighting. Incorporation of balconies into the design to provide shading. Building Fabric Use of high efficiency building fabric standards. Designed with low air permeability rates Energy Efficiency Energy efficient lighting and appropriate controls Variable speed heating system with high delta T and low return temperatures High efficiency motors and variable speed pumps for heating and ventilation systems High efficiency heating plant and auxiliary equipment Appropriate controls for heating system Appropriate temperature and time zoning Appropriate insulation of heating distribution system
	Be Clean Energy efficient energy supply Site-wide heating network to supply hot water and space heating to entire development.

Be Green	Renewable energy
	ASHP system to supply heating and hot water to the site-wide heating network
	PV array.

Table 9.1 – Summary of Energy strategy measures applied.

9.2 The summary of the overall reduction in the developments CO2 emissions after each stage of the energy hierarchy is presented in Table 9.2.

	(kgCO2/m2/year)	CO2 emissions (tonnes/year)
Development Baseline	11.81	40.10
After energy demand reduction (Be Lean)	10.27	34.88
After Heat network (Be Clean)	9.11	30.94
After use of renewables (Be Green)	8.01	27.20

Table 9.2 – Overall CO2 emissions for the development

- 9.3 The regulated CO2 savings for the entire development expressed in terms of actual and percentage reduction after each stage of the energy hierarchy are presented in Table 9.3.
- 9.4 The energy strategy shows that the overall CO2 emissions from both regulated and unregulated energy can be reduced by circa 12.9 tCO2 per annum which is equivalent to circa 32% reduction.

	Energy CO2 Savings	
	Tonnes per annum	%
Development Baseline	11.81	N/A
Savings from energy demand reduction	1.54	13
Saving from Heat Network	1.16	11
Savings from renewable energy	1.1	12
Total cumulative savings	3.8	36

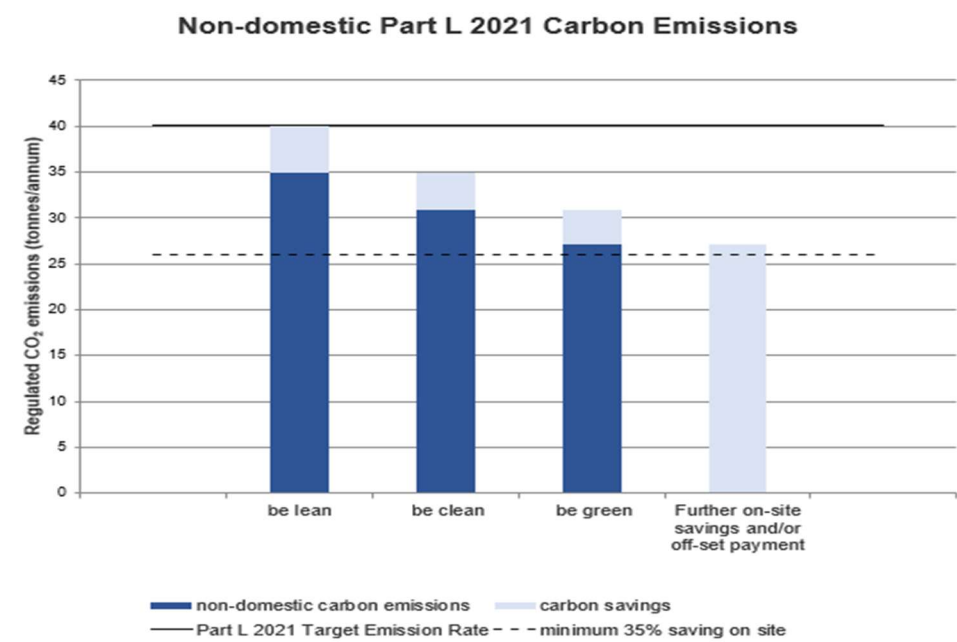
Table 9.3 – Overall CO2 emissions savings

9.5 Table 9.3 shows that the proposed strategy can achieve regulated CO2 savings of circa 12.9 tCO2 which is equivalent to circa 32% reduction when compared to the baseline.

9.6 The overall reduction in regulated carbon emissions associated with the proposed design is graphically illustrated in Figure 9.1 below.

Summary

In summary, the proposed energy strategy for the development:



- 5 Informs the built form and orientation of the buildings to respond to daylight and indoor comfort levels;
- 6 Includes optimal building fabric standards, energy efficient design of building services and energy efficient appliances;
- 7 Complies with Part L 2021 Building Regulations;
- 8 Includes a site-wide heating network with ASHPs to supply hot water and space heating throughout; and
- 9 Achieves and exceed the 20% regulated energy CO₂ emissions reduction requirement on-site.

APPENDIX A – ALTERNATIVE RENEWABLE TECHNOLOGIES

This appendix presents an assessment of the renewable technology options relative to the site which are considered to be less suitable or unsuitable for this development.

Technology	Brief Description	Benefits	Issues/Limitations	Feasible for site
Solar Photovoltaic	Photovoltaic panels convert solar radiation into electrical energy	Low maintenance. No moving parts. Easily integrated into building design.	Any overshadowing affects panel performance. Large area required for installation. Panels ideally inclined and facing southerly direction.	Yes
Solar Thermal	Solar thermal energy can contribute towards space heating and hot water requirements.	Low maintenance.	Must be sized for the building base load hot water requirements. Panels ideally inclined at around 30 degrees and facing southerly direction	Yes
Wind Turbine	Wind generation equipment operates on the basis of wind turning a propeller, which is used to drive an alternator to generate electricity. Small scale (1kW – 15kW) wind turbines can be pole or roof mounted.	Low maintenance/ On-going cost. Excess electricity can be exported to the grid.	Planning issues. Aesthetic impact. Background noise Space limitations on site. Minimum wind speed requirements. Wind survey to be undertaken to verify 'local' viability.	No
Biomass	Modern wood-fuel boilers are highly efficient, clean and almost carbon	Stable long-term running costs. Potential good CO ₂ saving.	Large area needed for fuel delivery and storage. Reliable fuel supply chain required. Regular maintenance required Significant plant space required. Air pollution / Clean Air Act limits use.	No
Ground Source Heat Pump (GSHP)	GSHP systems tap into the earth's considerable energy store to provide both heating and cooling to buildings.	Minimal maintenance. Unobtrusive technology. Flexible installation options to meet available site footprint.	Large area required for horizontal pipes Full ground survey required to determine geology. More beneficial to the development if cooling is required. Integration with piled foundations must be done at an early stage.	No

Technology	Brief Description	Benefits	Issues/Limitations	Feasible for site
Air Source Heat Pump	Electric air source heat pumps extract thermal energy from the surrounding air and transfer it to the working fluid (air or water).	Efficient use of fuel. Relatively low capital costs.	Specialist maintenance. Some additional plant space required. External proximity to boundary and noise generation with units cycling. Impact of the required external plant and associated noise within the domestic setting can be a nuisance to residents.	Yes
Combined Heat and Power	A Combined Heat and Power (CHP) installation is effectively a mini on-site power plant providing both electrical power and thermal heat. CHP is strictly an energy efficiency measure rather than a renewable energy technology.	Potential high CO ₂ saving available. Efficient use of fuel. Excess electricity can be exported to the grid	Maintenance intensive. Sufficient base thermal and electrical demand required. Additional plant space required. Noise and air quality constraints.	No
Earth Ducts	Passive pre-treatment of fresh air	Low cost Free energy	Requires significant air loads and riser space	No
Onsite Battery Storage	PV Battery Storage able to charge the battery during periods of low electrical load & discharging battery power at times of low/no solar radiation	Battery discharges power during periods of low solar radiation. Reduce electrical energy supply costs.	Specialist Maintenance Additional Plant space required Low Electrical Baseload, battery storage not economically viable	No

APPENDIX B – BRUKL REPORTS

The following pages detail the predicted BRUKL output and Part L compliance information for the proposed care home building based on the solution as described elsewhere in this report.

This analysis demonstrates feasibility only. The contractor shall be responsible for developing a holistic solution in conjunction with the detailing architect to achieve compliance.

Project name

Guysfield Care Home

As designed

Date: Thu Jun 20 10:18:22 2024

Administrative information

Building Details

Address: Willian Road, Willian, Letchworth, Hertfordshire, SG62AB

Certifier details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.5.6"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.5.6

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 836.91The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	8.57
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	7.91
Target primary energy rate (TPER), kWh _{PE} /m ² annum	93.48
Building primary energy rate (BPER), kWh _{PE} /m ² annum	85.47
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.19	0.19	External Wall
Floors	0.18	0.15	0.15	Ground Floor
Pitched roofs	0.16	0.13	0.13	Roof
Flat roofs	0.18	-	-	No flat roofs in project
Windows** and roof windows	1.6	1.45	1.46	ED.03-975X1125 OPEN
Rooflights***	2.2	-	-	No rooflights in project
Personnel doors^	1.6	-	-	No personnel doors in project
Vehicle access & similar large doors	1.3	-	-	No vehicle access or similar large doors in project
High usage entrance doors	3	-	-	No high usage entrance doors in project

U_{a-Limit} = Limiting area-weighted average U-values [W/(m²K)]U_{i-Calc} = Calculated maximum individual element U-values [W/(m²K)]U_{a-Calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- Rad Heat/Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

2- Rad Heat/Extract (103 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

3- Rad Heat/Mech Vent (14 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	-	-	0.8
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

4- VRF/No Vent (0-Comms 1)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	4	-	-	-
Standard value	N/A	3	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

5- VRF/Mech Vent (9 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	5.66	-	-	0.8
Standard value	N/A	3	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

6- VRF Extract (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	5.66	-	-	-
Standard value	N/A	3	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

7- Kitchen (0-Kitchen 1)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0	-	-	-	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

1- ASHP DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	3	0
Standard value	2*	N/A
* Standard shown is for all types except absorption and gas engine heat pumps.		

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1		Zone	Standard
0-Ensuite 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 13	0.2	-	-	-	-	-	-	-	-	-	-	N/A
2-Ensuite 32	0.2	-	-	-	-	-	-	-	-	-	-	N/A
3-Ensuite 52	0.2	-	-	-	-	-	-	-	-	-	-	N/A
0-Circulation 1	-	-	-	1.2	-	-	-	-	-	-	-	N/A
1-Circulation 1	-	-	-	1.2	-	-	-	-	-	-	-	N/A
2-Circulation 1	-	-	-	1.2	-	-	-	-	-	-	-	N/A
3-Circulation 1	-	-	-	1.2	-	-	-	-	-	-	-	N/A
0-Hoist Store 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
1-Hoist Store 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
2-Hoist Store 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
3-Hoist Store 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
0-WC 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
1-WC 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
2-WC 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
3-WC 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A
0-Circulation 2	-	-	-	1.2	-	-	-	-	-	-	-	N/A
0-Circulation 3	-	-	-	1.2	-	-	-	-	-	-	-	N/A
0-Laundry 1	-	-	-	1.2	-	-	-	-	-	-	-	N/A
0-Kitchen Change 1	0.2	-	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
0-Kitchen 1	-	-	-	-	-	-	-	-	1	-	N/A
0-Dry Store 1	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Assisted Bathroom 1	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Assisted Bathroom 1	0.2	-	-	-	-	-	-	-	-	-	N/A
2-Assisted Bathroom 1	0.2	-	-	-	-	-	-	-	-	-	N/A
3-Assisted Bathroom 1	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Clinical Room 1	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Clinical Room 1	0.2	-	-	-	-	-	-	-	-	-	N/A
2-Clinical Room 1	0.2	-	-	-	-	-	-	-	-	-	N/A
3-Clinical Room 1	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Drugs 1	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Drugs 1	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Dayspace/Dining 1	-	-	-	1.2	-	-	-	-	-	-	N/A
0-Ensuite 2	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 3	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 4	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 5	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 6	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 7	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 8	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 9	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 10	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 11	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Ensuite 12	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Staff Wc 1	0.2	-	-	-	-	-	-	-	-	-	N/A
0-Quiet Room 1	-	-	-	1.2	-	-	-	-	-	-	N/A
0-Servery 1	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 14	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 15	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 16	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 17	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 18	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 19	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 20	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 21	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 22	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 23	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 24	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 25	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 26	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 27	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 28	0.2	-	-	-	-	-	-	-	-	-	N/A
1-Ensuite 29	0.2	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
1-Ensuite 30	0.2	-	-	-	-	-	-	-	-	-	N/A	
1-Ensuite 31	0.2	-	-	-	-	-	-	-	-	-	N/A	
1-Circulation 2	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-WC 2	0.2	-	-	-	-	-	-	-	-	-	N/A	
1-Cinema/Activity 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-Reception/Bistro 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-Hair/Nail Salon 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-Dayspace/Dining 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-Servery 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
1-Activity Room 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
1-Sluice 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 33	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 34	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 35	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 36	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 37	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 38	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 39	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 40	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 41	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 42	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 43	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 44	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 45	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 46	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 47	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 48	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 49	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 50	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Ensuite 51	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Dayspace/Dining 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
2-Res WC 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Sluice 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Servery 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Drugs 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Quiet Room 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
2-Circulation 2	-	-	-	1.2	-	-	-	-	-	-	N/A	
2-Servery 2	0.2	-	-	-	-	-	-	-	-	-	N/A	
2-Dayspace/Dining 2	-	-	-	1.2	-	-	-	-	-	-	N/A	
3-Ensuite 53	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 54	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 55	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 56	0.2	-	-	-	-	-	-	-	-	-	N/A	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I			
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
3-Ensuite 57	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 58	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 59	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 60	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 61	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 62	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 63	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 64	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 65	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 66	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 67	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 68	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 69	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Ensuite 70	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Circulation 2	-	-	-	1.2	-	-	-	-	-	-	N/A	
3-Dayspace/ Dining 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
3-Servery 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Res.WC 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Sluice 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Quiet Room 1	-	-	-	1.2	-	-	-	-	-	-	N/A	
3-Drugs 1	0.2	-	-	-	-	-	-	-	-	-	N/A	
3-Dayspace/ Dining 2	-	-	-	1.2	-	-	-	-	-	-	N/A	
3-Servery 2	0.2	-	-	-	-	-	-	-	-	-	N/A	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
0-Bedroom 1		110	-	-
1-Bedroom 13		110	-	-
2-Bedroom 32		110	-	-
3-Bedroom 52		110	-	-
0-Ensuite 1		110	-	-
1-Ensuite 13		110	-	-
2-Ensuite 32		110	-	-
3-Ensuite 52		110	-	-
0-Circulation 1		110	-	-
1-Circulation 1		110	-	-
2-Circulation 1		110	-	-
3-Circulation 1		110	-	-
0-Hoist Store 1		110	-	-
1-Hoist Store 1		110	-	-
2-Hoist Store 1		110	-	-
3-Hoist Store 1		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]	
	Standard value	95	80	0.3	
1-Store 1		110	-	-	
0-WC 1		110	-	-	
1-WC 1		110	-	-	
2-WC 1		110	-	-	
3-WC 1		110	-	-	
0-Stairs 1		110	-	-	
1-Stairs 1		110	-	-	
2-Stairs 1		110	-	-	
3-Stairs 1		110	-	-	
0-Bedroom 2		110	-	-	
0-Bedroom 3		110	-	-	
0-Bedroom 4		110	-	-	
0-Bedroom 5		110	-	-	
0-Bedroom 6		110	-	-	
0-Bedroom 7		110	-	-	
0-Bedroom 8		110	-	-	
0-Bedroom 9		110	-	-	
0-Bedroom 10		110	-	-	
0-Bedroom 11		110	-	-	
0-Bedroom 12		110	-	-	
0-Circulation 2		110	-	-	
0-Circulation 3		110	-	-	
0-Laundry 1		110	-	-	
0-Plant 1		110	-	-	
0-Kitchen Change 1		110	-	-	
0-Chef Office 1		110	-	-	
0-Kitchen 1		110	-	-	
0-Dry Store 1		110	-	-	
0-Chiller 1		110	-	-	
0-COSSH 1		110	-	-	
0-SMO 1		110	-	-	
0-Assisted Bathroom 1		110	-	-	
1-Assisted Bathroom 1		110	-	-	
2-Assisted Bathroom 1		110	-	-	
3-Assisted Bathroom 1		110	-	-	
0-Clinical Room 1		110	-	-	
1-Clinical Room 1		110	-	-	
2-Clinical Room 1		110	-	-	
3-Clinical Room 1		110	-	-	
0-Drugs 1		110	-	-	
1-Drugs 1		110	-	-	
0-Nurse Station 1		110	-	-	
1-Nurse Station 1		110	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
2-Nurse Station 1		110	-	-
3-Nurse Station 1		110	-	-
0-Dayspace/Dining 1		110	-	-
0-Ensuite 2		110	-	-
0-Ensuite 3		110	-	-
0-Ensuite 4		110	-	-
0-Ensuite 5		110	-	-
0-Ensuite 6		110	-	-
0-Ensuite 7		110	-	-
0-Ensuite 8		110	-	-
0-Ensuite 9		110	-	-
0-Ensuite 10		110	-	-
0-Ensuite 11		110	-	-
0-Ensuite 12		110	-	-
0-Stairs 2		110	-	-
0-Staff Wc 1		110	-	-
0-Hospitality Office 1		110	-	-
0-Comms 1		110	-	-
0-Quiet Room 1		110	-	-
0-Servery 1		110	-	-
1-Bedroom 14		110	-	-
1-Bedroom 15		110	-	-
1-Bedroom 16		110	-	-
1-Bedroom 17		110	-	-
1-Bedroom 18		110	-	-
1-Bedroom 19		110	-	-
1-Bedroom 20		110	-	-
1-Bedroom 21		110	-	-
1-Bedroom 22		110	-	-
1-Bedroom 23		110	-	-
1-Bedroom 24		110	-	-
1-Bedroom 25		110	-	-
1-Bedroom 26		110	-	-
1-Bedroom 27		110	-	-
1-Bedroom 28		110	-	-
1-Bedroom 29		110	-	-
1-Bedroom 30		110	-	-
1-Bedroom 31		110	-	-
1-Ensuite 14		110	-	-
1-Ensuite 15		110	-	-
1-Ensuite 16		110	-	-
1-Ensuite 17		110	-	-
1-Ensuite 18		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80		0.3
1-Ensuite 19		110	-		-
1-Ensuite 20		110	-		-
1-Ensuite 21		110	-		-
1-Ensuite 22		110	-		-
1-Ensuite 23		110	-		-
1-Ensuite 24		110	-		-
1-Ensuite 25		110	-		-
1-Ensuite 26		110	-		-
1-Ensuite 27		110	-		-
1-Ensuite 28		110	-		-
1-Ensuite 29		110	-		-
1-Ensuite 30		110	-		-
1-Ensuite 31		110	-		-
1-Circulation 2		110	-		-
1-Stairs 2		110	-		-
1-WC 2		110	-		-
1-Admin Office 1		110	-		-
1-Cinema/Activity 1		110	-		-
1-Reception/Bistro 1		110	-		-
1-Lobby 1		110	-		-
1-Hair/Nail Salon 1		110	-		-
1-DSR 1		110	-		-
1-Dayspace/Dining 1		110	-		-
1-Servery 1		110	-		-
1-Activity Room 1		110	-		-
1-Sluice 1		110	-		-
1-Linen Store 1		110	-		-
2-Bedroom 33		110	-		-
2-Bedroom 34		110	-		-
2-Bedroom 35		110	-		-
2-Bedroom 36		110	-		-
2-Bedroom 37		110	-		-
2-Bedroom 38		110	-		-
2-Bedroom 39		110	-		-
2-Bedroom 40		110	-		-
2-Bedroom 41		110	-		-
2-Bedroom 42		110	-		-
2-Bedroom 43		110	-		-
2-Bedroom 44		110	-		-
2-Bedroom 45		110	-		-
2-Bedroom 46		110	-		-
2-Bedroom 47		110	-		-
2-Bedroom 48		110	-		-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
2-Bedroom 49		110	-	-
2-Bedroom 50		110	-	-
2-Bedroom 51		110	-	-
2-Ensuite 33		110	-	-
2-Ensuite 34		110	-	-
2-Ensuite 35		110	-	-
2-Ensuite 36		110	-	-
2-Ensuite 37		110	-	-
2-Ensuite 38		110	-	-
2-Ensuite 39		110	-	-
2-Ensuite 40		110	-	-
2-Ensuite 41		110	-	-
2-Ensuite 42		110	-	-
2-Ensuite 43		110	-	-
2-Ensuite 44		110	-	-
2-Ensuite 45		110	-	-
2-Ensuite 46		110	-	-
2-Ensuite 47		110	-	-
2-Ensuite 48		110	-	-
2-Ensuite 49		110	-	-
2-Ensuite 50		110	-	-
2-Ensuite 51		110	-	-
2-Dayspace/Dining 1		110	-	-
2-Res WC 1		110	-	-
2-DSR 1		110	-	-
2-Sluice 1		110	-	-
2-Servery 1		110	-	-
2-Drugs 1		110	-	-
2-Quiet Room 1		110	-	-
2-Circulation 2		110	-	-
2-Servery 2		110	-	-
2-Dayspace/Dining 2		110	-	-
2-Stairs 2		110	-	-
3-Bedroom 53		110	-	-
3-Bedroom 54		110	-	-
3-Bedroom 55		110	-	-
3-Bedroom 56		110	-	-
3-Bedroom 57		110	-	-
3-Bedroom 58		110	-	-
3-Bedroom 59		110	-	-
3-Bedroom 60		110	-	-
3-Bedroom 61		110	-	-
3-Bedroom 62		110	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m ²]
	Standard value	95	80	0.3
3-Bedroom 63		110	-	-
3-Bedroom 64		110	-	-
3-Bedroom 65		110	-	-
3-Bedroom 66		110	-	-
3-Bedroom 67		110	-	-
3-Bedroom 68		110	-	-
3-Bedroom 69		110	-	-
3-Bedroom 70		110	-	-
3-Ensuite 53		110	-	-
3-Ensuite 54		110	-	-
3-Ensuite 55		110	-	-
3-Ensuite 56		110	-	-
3-Ensuite 57		110	-	-
3-Ensuite 58		110	-	-
3-Ensuite 59		110	-	-
3-Ensuite 60		110	-	-
3-Ensuite 61		110	-	-
3-Ensuite 62		110	-	-
3-Ensuite 63		110	-	-
3-Ensuite 64		110	-	-
3-Ensuite 65		110	-	-
3-Ensuite 66		110	-	-
3-Ensuite 67		110	-	-
3-Ensuite 68		110	-	-
3-Ensuite 69		110	-	-
3-Ensuite 70		110	-	-
3-Circulation 2		110	-	-
3-Dayspace/ Dining 1		110	-	-
3-Servery 1		110	-	-
3-Res.WC 1		110	-	-
3-DSR 1		110	-	-
3-Sluice 1		110	-	-
3-Quiet Room 1		110	-	-
3-Drugs 1		110	-	-
3-Stairs 2		110	-	-
3-Dayspace/ Dining 2		110	-	-
3-Servery 2		110	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
0-Bedroom 1	NO (-22%)	NO
1-Bedroom 13	NO (-27%)	NO
2-Bedroom 32	NO (-83%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
3-Bedroom 52	NO (-65%)	NO
0-Bedroom 2	NO (-16%)	NO
0-Bedroom 3	NO (-24%)	NO
0-Bedroom 4	NO (-66%)	NO
0-Bedroom 5	NO (-58%)	NO
0-Bedroom 6	NO (-3%)	NO
0-Bedroom 7	NO (0%)	NO
0-Bedroom 8	NO (-10%)	NO
0-Bedroom 9	NO (-12%)	NO
0-Bedroom 10	NO (-13%)	NO
0-Bedroom 11	NO (-3%)	NO
0-Bedroom 12	NO (-9%)	NO
0-Laundry 1	N/A	N/A
0-Chef Office 1	N/A	N/A
0-SMO 1	N/A	N/A
0-Nurse Station 1	NO (-94%)	NO
1-Nurse Station 1	N/A	N/A
2-Nurse Station 1	NO (-83%)	NO
3-Nurse Station 1	NO (-81%)	NO
0-Dayspace/Dining 1	NO (-28%)	NO
0-Hospitality Office 1	N/A	N/A
0-Comms 1	N/A	N/A
0-Quiet Room 1	NO (-13%)	NO
1-Bedroom 14	NO (-42%)	NO
1-Bedroom 15	NO (-32%)	NO
1-Bedroom 16	NO (-88%)	NO
1-Bedroom 17	NO (-83%)	NO
1-Bedroom 18	NO (-14%)	NO
1-Bedroom 19	NO (-17%)	NO
1-Bedroom 20	NO (-16%)	NO
1-Bedroom 21	NO (-19%)	NO
1-Bedroom 22	NO (-10%)	NO
1-Bedroom 23	NO (-88%)	NO
1-Bedroom 24	NO (-59%)	NO
1-Bedroom 25	NO (-19%)	NO
1-Bedroom 26	NO (-17%)	NO
1-Bedroom 27	NO (-51%)	NO
1-Bedroom 28	NO (-60%)	NO
1-Bedroom 29	NO (-54%)	NO
1-Bedroom 30	NO (-59%)	NO
1-Bedroom 31	NO (-65%)	NO
1-Admin Office 1	NO (-56%)	NO
1-Cinema/Activity 1	NO (-50%)	NO
1-Reception/Bistro 1	NO (-38%)	NO
1-Hair/Nail Salon 1	NO (-63%)	NO
1-Dayspace/Dining 1	NO (-33%)	NO
1-Activity Room 1	NO (-32%)	NO
2-Bedroom 33	NO (-68%)	NO
2-Bedroom 34	NO (-68%)	NO

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
2-Bedroom 35	NO (-67%)	NO
2-Bedroom 36	NO (-72%)	NO
2-Bedroom 37	NO (-68%)	NO
2-Bedroom 38	NO (-67%)	NO
2-Bedroom 39	NO (-51%)	NO
2-Bedroom 40	NO (-66%)	NO
2-Bedroom 41	NO (-57%)	NO
2-Bedroom 42	NO (-63%)	NO
2-Bedroom 43	NO (-63%)	NO
2-Bedroom 44	NO (-84%)	NO
2-Bedroom 45	NO (-79%)	NO
2-Bedroom 46	NO (-56%)	NO
2-Bedroom 47	NO (-75%)	NO
2-Bedroom 48	NO (0%)	NO
2-Bedroom 49	NO (-8%)	NO
2-Bedroom 50	NO (-12%)	NO
2-Bedroom 51	NO (-1%)	NO
2-Dayspace/Dining 1	NO (-71%)	NO
2-Drugs 1	N/A	N/A
2-Quiet Room 1	NO (-78%)	NO
2-Dayspace/Dining 2	NO (-12%)	NO
3-Bedroom 53	NO (-27%)	NO
3-Bedroom 54	NO (-27%)	NO
3-Bedroom 55	NO (-27%)	NO
3-Bedroom 56	NO (-36%)	NO
3-Bedroom 57	NO (-28%)	NO
3-Bedroom 58	NO (-62%)	NO
3-Bedroom 59	NO (-15%)	NO
3-Bedroom 60	NO (-17%)	NO
3-Bedroom 61	NO (-16%)	NO
3-Bedroom 62	NO (-18%)	NO
3-Bedroom 63	NO (-3%)	NO
3-Bedroom 64	NO (-64%)	NO
3-Bedroom 65	NO (-53%)	NO
3-Bedroom 66	NO (-20%)	NO
3-Bedroom 67	NO (-46%)	NO
3-Bedroom 68	NO (-4%)	NO
3-Bedroom 69	NO (-1%)	NO
3-Bedroom 70	NO (-6%)	NO
3-Dayspace/ Dining 1	NO (-46%)	NO
3-Quiet Room 1	NO (-83%)	NO
3-Drugs 1	N/A	N/A
3-Dayspace/ Dining 2	NO (-13%)	NO

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	3396	3396
External area [m ²]	4125	4125
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	5	3
Average conductance [W/K]	1333	1469
Average U-value [W/m ² K]	0.32	0.36
Alpha value* [%]	32.91	17.91

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels

100 Residential Institutions: Hospitals and Care Homes

Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries
 Non-residential Institutions: Education
 Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 General Assembly and Leisure, Night Clubs, and Theatres
 Others: Passenger Terminals
 Others: Emergency Services
 Others: Miscellaneous 24hr Activities
 Others: Car Parks 24 hrs
 Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	2.71	2.8
Cooling	4.03	6.45
Auxiliary	11.05	10.38
Lighting	17.38	12.03
Hot water	29.8	31.74
Equipment*	101.33	101.33
TOTAL **	64.97	63.4

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	8.76	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>8.76</i>	<i>0</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	111.46	135.54
Primary energy [kWh _{PE} /m ²]	85.47	93.48
Total emissions [kg/m ²]	7.91	8.57

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	46.1	0	4.2	0	3	3.04	0	3.2	0	
Notional	32.8	0	3.5	0	1.8	2.64	0	----	----	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	57	0	5.2	0	9	3.04	0	3.2	0	
Notional	79.7	0	8.4	0	11.2	2.64	0	----	----	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0.4	0	0	0	18.4	3.04	0	3.2	0	
Notional	2.4	0	0.3	0	22.2	2.64	0	----	----	
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0	462	0	32.1	0	0	4	0	4	
Notional	0	440.2	0	27.8	0	0	4.4	----	----	
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0	523.1	0	25.7	24.6	0	5.66	0	5.66	
Notional	0	693.5	0	43.8	14	0	4.4	----	----	
[ST] Split or multi-split system, [HS] LTHW boiler, [HFT] Electricity, [CFT] Electricity										
Actual	0	698.6	0	34.3	1.3	0	5.66	0	5.66	
Notional	0	394	0	24.9	10	0	4.4	----	----	
[ST] Central heating using water: radiators, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0	0	0	0	31.4	0	0	0	0	
Notional	0	0	0	0	52.3	0	0	----	----	

Key to terms

Heat dem [MJ/m2]	= Heating energy demand
Cool dem [MJ/m2]	= Cooling energy demand
Heat con [kWh/m2]	= Heating energy consumption
Cool con [kWh/m2]	= Cooling energy consumption
Aux con [kWh/m2]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type

APPENDIX C – G-VALUE MARKUPS



HEALTH AND SAFETY RISK ASSESSMENT CONSEQUENCE TABLE		Consequences				
		Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain	5	5	10	15	20	25
Likely	4	4	8	12	16	20
Possible	3	3	6	9	12	15
Unlikely	2	2	4	6	8	10
Rare	1	1	2	3	4	5

Schedule of Accommodation

Bedroom Silver Plus - 44No. Total
(16.5m² + ensuite)

Bedroom Gold - (18.0m ² + ensuite)	3No. Total
--	------------

Bedroom Gold Plus - 23No. Total
(3no.18.5m & 20no.19.0m² + ensuite

Public Accommodation

Shared Resident Space

Nursing / Admin Space

Catering / Plant Accommodation

Proposed Area Analysis:

Lower Ground Floor	= 891m ²	(12 bedrooms)
Ground Floor Area	= 1012.5m ²	(19 Bedrooms)
First Floor Area	= 931m ²	(20 Bedrooms)
Second Floor Area	= 903.5m ²	(19 Bedrooms)

Total No. of Bedrooms = **70no.**
(Average Size: 17.36m²)

Total GIFA = 3,738m²
(53.4m² per bedroom)

Resident Dayspace
(Lounge & Dining Space) = 362m²
(5.17m² per bedroom)

Total Resident Dayspace & Other Resident Space
= 495m²
(7.07m² per bedroom)

All stated areas exclude the additional accommodation contained within the proposed Refurbishment of 'Guys House'

For 'Guys House' Refer to Drawing:
4870-ORA-02-ZZ-DR-A-32100

	Updated to 'Planning' Status	AN	05/06/24
	General update for 'Pre-Application Advice' submission.	GDC	27/09/23
	Minor amendments following Client Review Meeting 12/06/23	GDC	15/06/23
	General Update for Pre-Application Submission	GDC	01/06/23
	Schedule of Accommodation updated to indicate 13no. Bedrooms on Ground Floor as proposed. Total 70no. Bedrooms. Extent of Existing Building (To be Demolished) noted for information.	GDC	12/2/22
	Updated Proposals for Project Team Review (Average Bedroom Size increased to 17.36m ² . Guys House' proposals indicated and overall GSA reviewed).	GDC	13/10/22
iv	Description	Auth	Date

TAMP PLANNING

PROJECT STATUS

Developed Design

RAWING TITLE

Lower Ground and Ground Floor Plan

PROJECT
Guysfield Care Home
at Willian Road, Willian, Letchworth
for Caring Homes Group Ltd

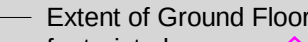
DATE CREATED	DESIGNER	SCALE @ A1
07/08/21	GDC	1 : 200

ORIGINATOR PROJECT NUMBER
4870

ISO DOCUMENT REF.
4870-ORA-01-ZZ-DR-A-32100

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Gary D Caudrey Graeme S Gallagher



Red Line/Hatch Denotes Extent of Existing Building (To be Demolished)

**Existing
Atlantic Cedar
retained as
centrepiece within
Landscaped Garden**

Landscaped Gardens

Extent of Root Protection Area (RPA), Refer to Specialist Review/Comment

1 Lower Ground Floor Plan
1 : 200



Red Line/Hatch Denotes Extent of
Existing Building (To be Demolished)

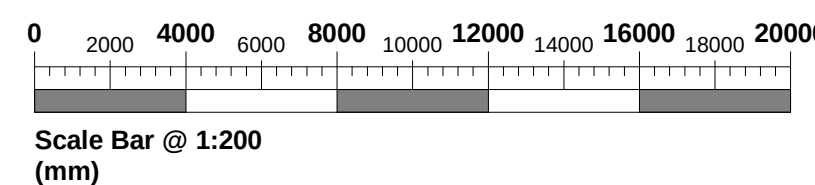
Refurbished 'Guys House'

**Existing
Atlantic Cedar
retained as
centrepiece within
Landscaped Garden**

Landscaped Gardens

Extent of Root Protection Area (RPA)
Refer to Specialist Review/Comment

2 Ground Floor Plan
1 : 200

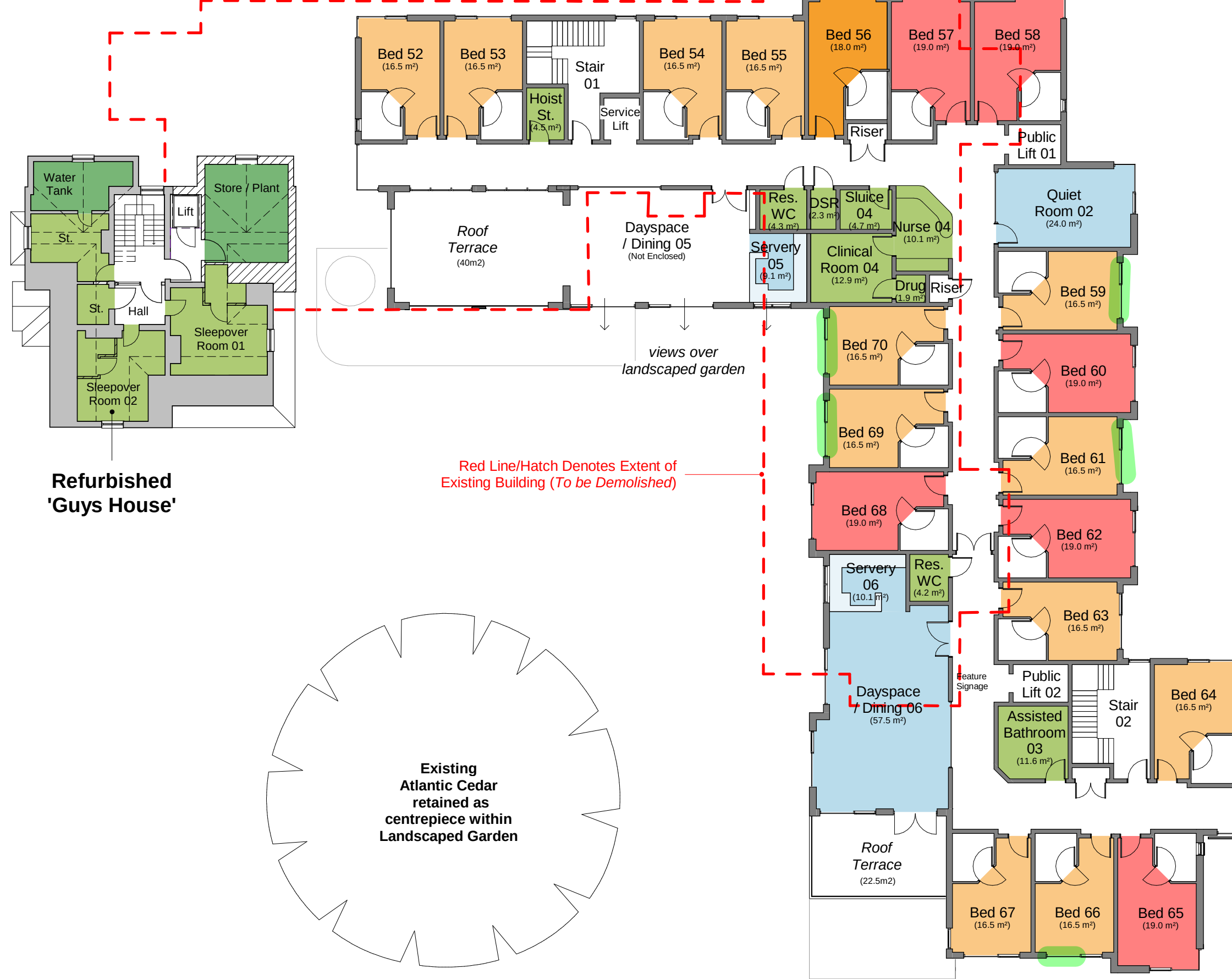


Scale Bar @ 1:200
(mm)

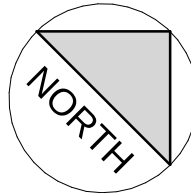
G-Value:0.36



1 First Floor Plan
1 : 200



2 Second Floor Plan
1 : 200



HEALTH AND SAFETY RISK ASSESSMENT CONSEQUENCE TABLE	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain 5	5	4	3	2	1
Likely 4	4	3	2	1	0
Possible 3	3	2	1	0	0
Unlikely 2	2	1	0	0	0
Rare 1	1	0	0	0	0

Schedule of Accommodation

Bedroom Silver Plus - 44No. Total (16.5m ² + ensuite)	
Bedroom Gold - 3No. Total (18.0m ² + ensuite)	
Bedroom Gold Plus - 23No. Total (3no.18.5m & 20no.19.0m ² + ensuite)	
Public Accommodation	
Shared Resident Space	
Nursing / Admin Space	
Catering / Plant Accommodation	

Proposed Area Analysis:

Lower Ground Floor	= 891m ²	(12 bedrooms)
Ground Floor Area	= 1012.5m ²	(19 Bedrooms)
First Floor Area	= 931m ²	(20 Bedrooms)
Second Floor Area	= 903.5m ²	(19 Bedrooms)

Total No. of Bedrooms = 70no.
(Average Size: 17.36m²)

Total GIFA = 3,738m²
(53.4m² per bedroom)

Resident Dayspace (Lounge & Dining Space) = 362m²
(5.17m² per bedroom)

Total Resident Dayspace & Other Resident Space = 495m²
(7.07m² per bedroom)

All stated areas exclude the additional accommodation contained within the proposed Refurbishment of 'Guys House'

For 'Guys House' Refer to Drawing:
GHCH-ORA-02-XX-DR-A-32100

K	Updated to 'Planning' Status	AN	05/06/24
J	General update for 'Pre-Application Advice' submission.	GDC	27/09/23
H	Minor amendments following Client Review Meeting 13/06/23	GDC	15/06/23
G	General Update for Pre-Application Submission	GDC	01/06/23
F	Schedule of Accommodation updated to indicate 19no. Bedrooms to Ground Floor as proposed. Total 70no. Bedrooms.	GDC	25/01/23
E	Extent of Existing Building (To be Demolished) noted for information.	GDC	12/12/22
D	Updated Proposals for Project Team Review (Average Bedroom Size increased to 17.36m ² . 'Guys House' proposals indicated and overall GIFA reviewed.	GDC	13/10/22
Rev	Description	Auth	Date
REVISION			

STAMP	PLANNING
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PROJECT STATUS	Developed Design
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DRAWING TITLE	First and Second Floor Plan
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PROJECT	Guysfield Care Home at Willian Road, Willian, Letchworth for Caring Homes Group Ltd
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DATE CREATED	DESIGNER	SCALE @ A1
07/08/2021	GDC	1 : 200

ORIGINATOR	PROJECT NUMBER
	4870

ISO DOCUMENT REF.	REV.
4870-ORA-01-ZZ-DR-A-32101	K

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