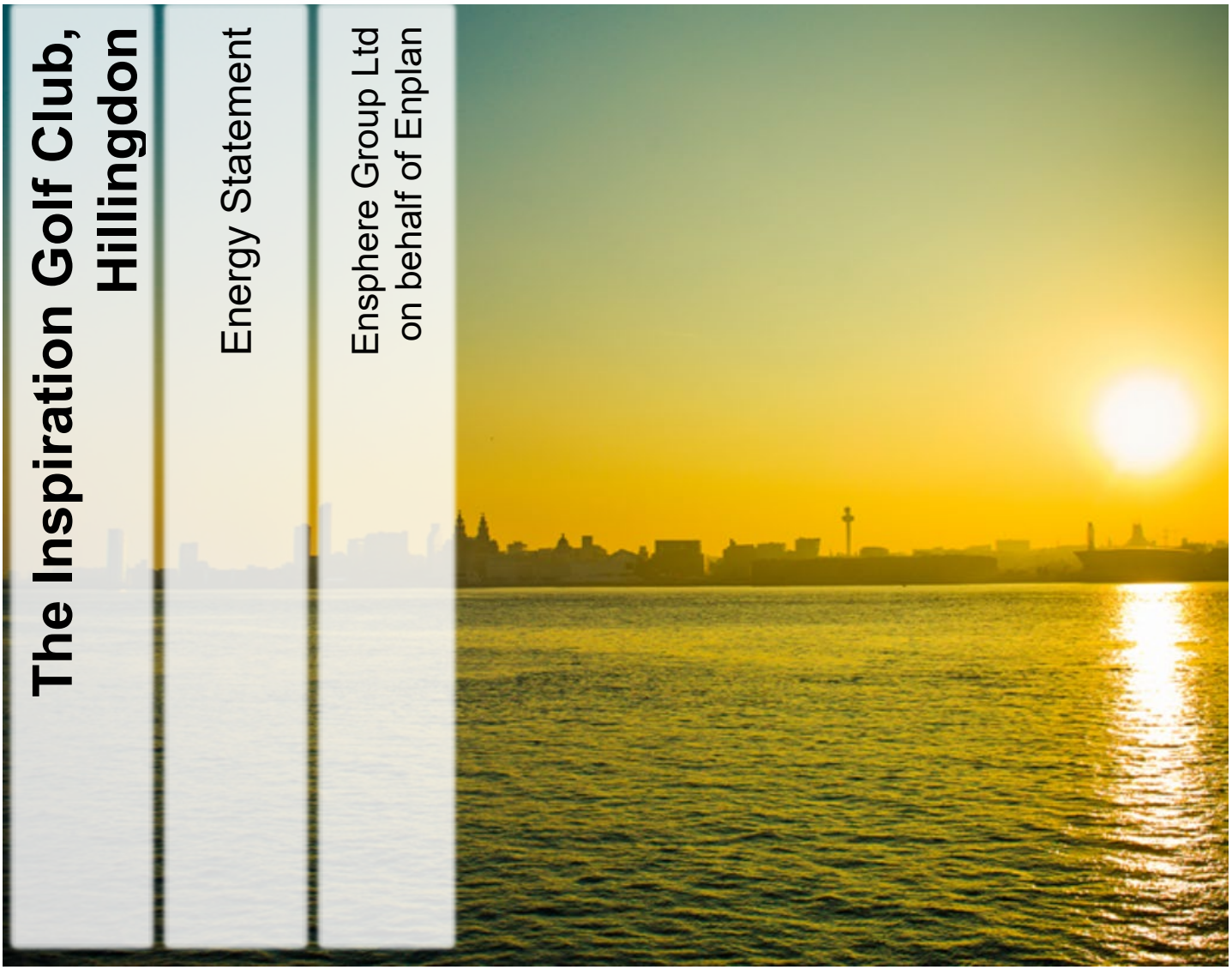
The Inspiration Golf Club, Hillingdon

Energy Statement

Ensphere Group Ltd
on behalf of Enplan



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The Inspiration Golf Club, Hillingdon

Energy Statement

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This document has been prepared and checked in accordance with Ensphere Group Ltd's Quality Management System.

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Final	V3	Antonio Papageorgiou	Pete Jeavons	December 2023

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Contents

1. Introduction

1.1 Ensphere Group Ltd was commissioned by Enplan to produce an Energy Statement for the proposed development of a temporary clubhouse building and associated landscaping, along with a car park and a service yard at The Inspiration Golf Club, Downes Barn Farm, West End Road, Hillingdon.

Site & Surroundings

Site

1.2 The current Site extends to approximately 0.88ha and comprises of an area of land within the southeastern corner of The Inspiration Golf Club Course at Downes Barn Farm, West End Road, Hillingdon. The golf course is not yet operational but has largely been completed.

1.3 The Site is accessible via the West End Road to the east.

Surroundings

1.4 The surrounding area has a variety of uses, with the C & L Country Club adjacent to the boundary of the golf course to the north of the Site. Further north of that is Western Avenue (A40), with the RAF Station Northolt, and residential development further beyond. To the east of the main area of the application Site is an existing residential property, Downs Barn Farn, and the access road to the clubhouse which curves around the property boundary. West End Road bounds the Site to the east, and on the opposite side of it behind a grassland area is some residential development. Just behind that is West London Family Golf Centre which is owned and operated by the applicant. The south of the Site is bounded by Sharvel Lane, which comprises of a trading estate, and open fields in other leisure use including West London Shooting School. Woodland and fields bound the Site to the west, and these include public open space and a Local Nature Reserve.

1.5 The Site is also connected to public transport with two bus stops in close proximity, which are both fewer than 100 meters from the Site, situated on West End Lane. Both bus stops serve the E7 bus towards Ruislip and Ealing Broadway. The Site is also a 24-minute walk from South Ruislip Train Station and Underground Station serving the Central line and Chiltern Railways. The Central line runs between Ealing Broadway and Epping, and Chiltern Railways serves providing access to High Wycombe and the Midlands.

Development Proposals

1.6 The proposal is for the development of a temporary clubhouse with associated landscaping and a car park and service yard at The Inspiration Golf Club. The temporary clubhouse is required to enable the operation of the golf course while construction of a permanent clubhouse is ongoing. The temporary clubhouse is the minimum size necessary to serve the golf course and

it will provide a reception area, office, kitchen and dining area, and male and female changing facilities. It will be situated to the north of the permanent clubhouse and will be directly accessible from the access road. With regards to landscaping, the temporary clubhouse will be surrounded by landscaped garden areas with hard-surfaced paths and an external patio. It will also have a temporary courtyard area for external deliveries along with storage and refuse/recycling areas.

1.7 Upon completion of the permanent clubhouse, the temporary clubhouse will be removed from the site.

Report Objective

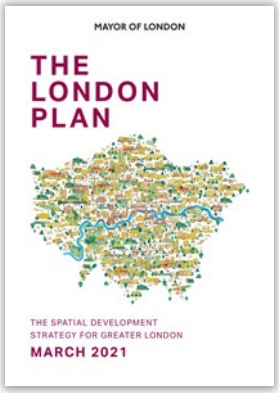
1.8 The objective of the Energy Statement is to outline how energy efficiency, low carbon and renewable technologies have been considered as part of the energy strategy.

2. Planning Policy Context

2.1 Local planning policy relevant to the energy strategy is considered below:

London Context

London Plan (2021)



2.2 The London Plan is the overall strategic plan for London, it sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The London Plan is part of the Development Plan and covers a range of planning issues. The presented policies provide a vision for how London should sustainably grow and develop in the future. Policies considered pertinent to this report are presented below:

- Policy D2 (*Infrastructure requirements for sustainable densities*) – development proposals should be considerate of future planned levels of infrastructure and proportionate to the site's connectivity.
- Policy D3 (*Optimising site capacity through the design-led approach*) – lists a series of requirements including a requirement for development to aim for high sustainability standards.
- Policy S1 (*Developing London's social infrastructure*) – Develop proposals that seek to make the best use of land, including the public-sector estate, should be encouraged and supported.
- Policy G1 (*Green Infrastructure*) – Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network.
- Policy G4 (*Open Space*) – Development proposals should not result in the loss of protected open space; and where possible create areas of publicly accessible open space.
- Policy G5 (*Urban Greening*) – Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design.
- Policy G6 (*Biodiversity and access to nature*) – Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain.
- Policy SI 1 (*Improving air quality*) – Development proposals should not lead to further deterioration of existing poor air quality.

- Policy SI 2 (*Minimising greenhouse gas emissions*) – Major development should be net zero-carbon and minimise emissions in accordance with the following energy hierarchy: be lean, be clean, be green, be seen. A minimum on site reduction of 35% beyond Building Regulations will be required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Any short fall with the zero carbon target should be addressed through a carbon offset payment. Development referable to the GLA should also calculate whole life-cycle carbon emissions.

- Policy SI 3 (*Energy infrastructure*) – Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system.

- Policy SI 4 (*Managing heat risk*) – Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems.

- Policy SI 5 (*Water infrastructure*) – Development proposals should be achieving mains water consumption of 105 litres or less per head per day; and achieve at least the BREEAM excellent standard for the 'Wat 01' water category. Smart metering, water saving and recycling measures should also be incorporated.

- Policy SI 7 (*Reducing waste and supporting the circular economy*) – Referable applications should promote circular economy outcomes and aim to be net zero-waste.

- Policy SI 12 (*Flood risk management*) – Development proposals should ensure that flood risk is minimised and mitigated.

- Policy SI 13 (Sustainable drainage) - Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible

Energy Assessment Guidance (June 2022)

2.3 This guidance document explains how to prepare an energy assessment to accompany strategic planning applications referred to the Mayor. It states that the purpose of an energy assessment is to demonstrate that the proposed climate change mitigation measures comply with London Plan energy policies, including the energy hierarchy. Although primarily aimed at strategic planning applications, London boroughs are encouraged to apply the same structure for energy assessments related to non-referable applications and adapt it for relevant scales of development.

'Be Seen' Energy Monitoring Guidance (September 2021)

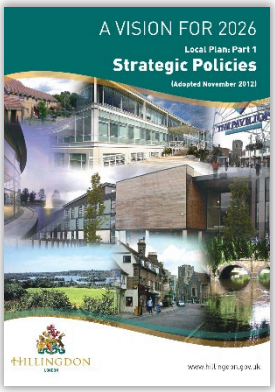
2.4 This guidance explains the process that needs to be followed to comply with the 'be seen' post-construction monitoring requirement of Policy SI 2 of the London Plan. It sets out what each

responsible party needs to do to comply with the policy from the inception stage of a development to full occupancy. Planning applicants will need to ensure that each responsible party is aware of their design and reporting responsibilities at each reporting stage.

2.5 It also provides information on the 'be seen' monitoring portal, which will house all data submissions, and breaks up the process into three reporting stages during which information needs to be submitted (that is – planning stage, as-built stage and in-use stage).

Local Context

London Borough of Hillingdon Local Plan Part 1 – Strategic Policies (2012)



2.6 The Local Plan Part 1 is sets out the overall level and broad locations of growth for up to 2026. It comprises a spatial vision and strategy, strategic objectives, core policies and a monitoring and implementation framework with clear objectives for achieving delivery. More detailed policies and allocations set out in the Local Plan Part 2 support these policies in the Local Plan Part 1. The Following policies are considered pertinent to this report:

- Policy NPPF1 (*National Planning Policy Framework – Presumption in Favour of Sustainable Development*) – When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework.

- Policy BE1 (*Built Environment*) – The Council will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods. New development should maximise the opportunities for all new homes to contribute to tackling and adapting to climate change and reducing emissions of local air quality pollutants. The Council will seek to merge a suite of sustainable design goals, such as the use of SUDS, water efficiency, lifetime homes, and energy efficiency into a requirement measured against BREEAM minimum.

- Policy EM1 (*Climate Change Adaptation and Mitigation*) – The Council will ensure that climate change mitigation is addressed at every stage of the development process.

- Policy EM4 (*Open Space and Informal Recreation*) – Major developments will be expected to make appropriate contributions to the delivery of new opportunities, or to the improvement and enhancements of existing facilities.

- Policy EM6 (*Flood Risk Management*) – The Council will require all development across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable.

- Policy EM7 (*Biodiversity and Geological Conservation*) – Hillingdon's biodiversity and geological conservation will be preserved and enhanced with particular attention given to the provision of biodiversity improvements from all development, where feasible; The provision of green roofs and living walls which contribute to biodiversity and help tackle climate change; and the use of sustainable drainage systems.

- Policy EM8 (*Land, Water, Air and Noise*) – Includes reference to a need for all new development must incorporate water recycling and collection facilities unless it can be demonstrated it is not appropriate.

- Policy EM11 (*Sustainable Waste Management*) – The Council will require for all new development to address waste management at all stages of the development's life from design and construction through to the end use and activity on sire, ensuring that all waste is managed towards the upper end of the waste hierarchy.

London Borough of Hillingdon Local Plan Part 2 - Development Management Policies (2020)

2.7 The Local Plan Part 2 comprises development Management Policies, Site Allocations and Designations and the Policies Map. Once adopted, it will deliver the detail of the strategic policies set out in the Local Plan Part 1. The Following policies are considered pertinent to this report:

- Policy DMHB11 (*Design of New Development*) – All development will be required to be designed to the highest standards and incorporate principles of good design including ensuring that the internal design and layout of development maximises sustainability and is adaptable to different activities.

- Policy DMEI1 (*Living Walls and Roofs and On-site Vegetation*) – All major development should incorporate living roofs and/or walls into the development.

- Policy DMEI2 (*Reducing Carbon Emissions*) – All developments are required to make the fullest contribution to minimising carbon dioxide emissions in accordance with London Plan targets.

- Policy DMEI3 (*Decentralised Energy*) – All major developments are required to be designed to be able to connect to a Decentralised Energy Network (DEN).

- Policy DMEI7 (*Biodiversity Protection and Enhancement*) – The design and layout of new development should retain and enhance any existing features of biodiversity or geological value within the site.

- Policy DMEI9 (*Management of Flood Risk*) – Proposals that fail to make appropriate provision for flood risk mitigation.

- Policy DMEI10 (*Water Management Efficiency, and Quality*) – Applications for all new build developments (not conversions, change of use, or refurbishment) are required to include a drainage assessment demonstrating that appropriate sustainable drainage systems (SuDS) have been incorporated. All new development proposals (including refurbishments and conversions) will be required to include water efficiency measures.

- Policy DMIN4 (*Re-use and Recycling of Aggregates*) – The Council will promote the recycling of construction, demolition and excavation waste.

- Policy DMT1 (*Managing Transport Impact*) – Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner.

3. Energy Strategy

3.1 This section presents the details of the proposed design including indicative performance levels, where available.

Energy Strategy Principles

3.2 The approach follows the Energy Hierarchy. The first principle of the Hierarchy is to reduce demand and the need for energy in the first place (Be Lean). Where opportunities to improve the efficiency of the design have been maximised, consideration is then given to the second principle whereby priority is given to the efficient use of energy (Be Clean). This is on the basis that low carbon technologies can be cost-effective and provide significant carbon savings when compared to conventional technologies. The third principle of the hierarchy promotes the use of renewable technologies (Be Green). Whilst these technologies can be relatively expensive to install, they do offer the potential to significantly reduce carbon emissions. Following the application of renewable technologies, the final tier of the Hierarchy requires monitoring, verification and reporting on energy performance (Be Seen).

Energy Efficiency Measures

Fabric Efficiency

3.3 Fabric efficiency concerns the thermal properties associated with the building fabric and construction.

3.4 Heat Transfer Coefficients, otherwise referred to as U-Values, are a measure of the rate of heat transfer through a building element over a given area, under standardised conditions (i.e. the rate at which heat is lost or gained through a fabric).

3.5 It is intended that the performance of the building fabric will incorporate relatively low U-Values to reduce the rate at which the buildings lose heat, preserving the heat within the space and reducing the requirement for mechanical heating.

Table 3.1 Proposed Building Fabric U-Values (Non-Domestic)

Fabric Element	Part L2 (W/m²K)	Proposed (W/m²K)
External Wall	0.26	0.15
Roof	0.18	0.11
Ground Floor	0.18	0.11
Windows	1.60	1.40

Air Tightness

3.6 A high level of air tightness is proposed and a level below $3m^3/h/m^2$ is targeted, meaning that air infiltration between the internal and the external environment will be largely controlled and space heating demand further reduced.

Thermal Bridging

3.7 Thermal bridging is the penetration of the insulation layer by a highly conductive non-insulating material allowing rapid heat transfer from an interior to exterior environment (and vice versa). In well insulated buildings, as much as 30% of heat loss can occur through thermal bridges. The building fabric shall be constructed so that there are no reasonably avoidable thermal bridges in the insulation layers caused by gaps within the various elements.

Ventilation

3.8 It is anticipated that the building will have the potential to be ventilated naturally via openable windows and / or trickle vents. This has the advantage of lower energy consumption; decreased costs associated with capital expenditure, operation and maintenance.

Lighting

3.9 Lighting design is intended to be highly efficient and in excess of Building Standards requirements and considerate of appropriate CIBSE guidance. General lighting should have an average luminaire efficacy of 120 luminaire lumens per circuit-watt. Light fittings should be predominately LED.

Low Carbon & Renewable Technologies

3.10 It is proposed that all new systems will be electric, which means the building will effectively become net-zero overtime in line with the decarbonisation of the National Grid. Air Source Heat Pumps are proposed on space and hot water.

3.11 Time and temperature controls by suitable arrangement will be installed, in order to maximise the efficiency of the heating system.

3.12 As the building is intended as a temporary structure, renewable technologies such as roof-mounted photovoltaics (PV) are not considered appropriate. However, the building will be replaced by a permanent structure that does utilise PV in due course.

Carbon Savings

3.13 Energy modelling has been undertaken using IES SBEM software and the carbon savings delivered by each of the three steps of the Energy Hierarchy have been estimated (indicative outputs are included in the appendices).

Table 3.2 CO_2 Emissions after Each Stage of the Energy Hierarchy (SAP10.2)

	Carbon Dioxide Emissions (Tonnes CO_2 per annum)	
Step	**Regulated**	**Unregulated**
Baseline: Part L 2021	5.5	1.7
After energy demand reduction	4.7	1.7
After heat network connection	4.7	1.7
After renewable energy	**3.5**	**1.7**

Table 3.3 Regulated CO_2 Savings from Each Stage of the Energy Hierarchy

	Regulated Carbon Dioxide Savings (Tonnes CO_2 per annum)	
Step	**TCO_2/yr**	**%**
Savings from energy demand reduction	0.8	15%
Savings from CHP	0.0	0%
Savings from renewable energy	1.2	22%
Total Cumulative Savings	**2.0**	**37%**

Monitor, Verify & Report

3.14 In line with policy, the Applicant aims to protect the new building users from high prices and is therefore committed to post construction monitoring. This information will be used to encourage building users to minimise energy demand during peak hours. The Applicant will also undertake a programme of aftercare support as part of its handover process.

3.15 Where appliances such as fridges are provided, it is proposed that a high energy efficiency rating will be targeted for the appliances installed to reduce energy requirements.

3.16 It is anticipated that extensive installation of smart meters will facilitate the collation of data.

Pollution

3.17 Heating systems at the site shall also be electrical, avoiding local emissions associated with combustion. As heat pumps are proposed for space and hot water heating, these are assumed to have zero heat-related NOx and particulate matter emissions.

3.18 The developer will also endeavour to avoid the use of materials with a high VOC (volatile organic compound) content, therefore ensuring an improved air quality for the completed development.

3.19 Measures relating to building design, fabric design and landscaping shall be implemented as appropriate so that internal ambient noise levels are acceptable for the intended use and do not compromise the health and well-being of occupants.

3.20 The external lighting strategy shall be designed to minimise light spillage and night time light pollution in line with the ILP's Guidance notes for the reduction of obtrusive light; low illuminance levels, fittings and controls shall be employed accordingly.

3.21 Good internal air quality will be achieved through the creation of a building envelope with a low air permeability; meaning that the building fabric will reduce the infiltration of pollution from the external environment.

4. Summary

4.1 This Energy Statement provides an overview of the energy strategy in consideration of the site context, anticipated energy requirements and local priorities and initiatives.

4.2 A review of Hillingdon Council's planning policies has identified a number of requirements relating to sustainable development including Local Plan Policy EM1 (*Climate Change Adaptation and Mitigation*). Consideration has also been given to the National and London planning policy framework.

4.3 The approach follows the Energy Hierarchy, and a series of measures help to demand reduction, improve efficiency, implement renewable energy and also monitor/report usage. Energy efficient lighting and appropriate controls shall be employed throughout the development. An all-electric heating system for space and hot water heating is proposed to align with the decarbonisation of the National Grid.

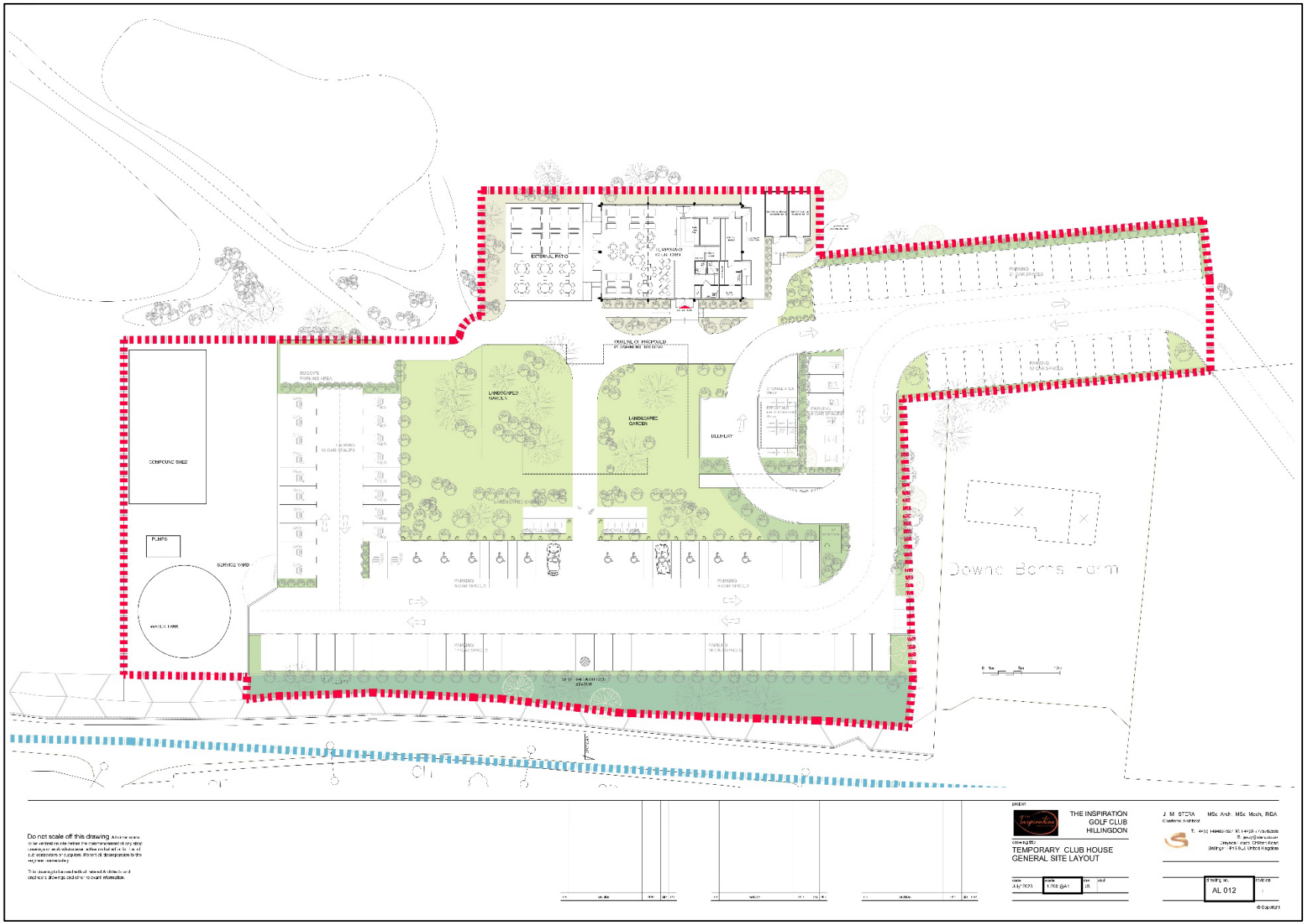
4.4 The building is expected to achieve an on-site carbon saving of 22% relative to Part L 2021. As it is intended as a temporary structure, renewable technologies beyond the proposed ASHP are not considered appropriate. The building will be replaced by a permanent structure in due course that achieves an on-site carbon saving of >35% relative to Part L 2021.

4.5 A copy of the GLA Carbon Emission Reporting Spreadsheet is appended to this report outlining the savings at each stage of the Energy Hierarchy.

4.6 Overall, the proposed energy strategy is considered consistent with the National Planning Policy Framework, London Plan and policies of the Council. When implemented, the scheme will provide an efficient and low carbon development.

Appendices

A. Site Plan


EXTERNAL PATIO
COMPOUND SHED
PUMPS
SERVICE YARD
WATER TANK
BUGGYS PARKING AREA
LANDSCAPED GARDEN
LANDSCAPED GARDEN
BILLIARD
Downe Barns Farm
Do not scale off this drawing.
THE INSPIRATION GOLF CLUB HILLINGDON
TEMPORARY CLUB HOUSE GENERAL SITE LAYOUT
AL 012

Appendices

B. Key Local Planning Policy Requirements

London Planning Policy Framework

London Plan (2021)

Policy D2 Infrastructure requirements for sustainable densities

A) The density of development proposals should:

1) consider, and be linked to, the provision of future planned levels of infrastructure rather than existing levels

2) be proportionate to the site's connectivity and accessibility by walking, cycling, and public transport to jobs and services (including both PTAL and access to local services).

B) Where there is currently insufficient capacity of existing infrastructure to support proposed densities (including the impact of cumulative development), boroughs should work with applicants and infrastructure providers to ensure that sufficient capacity will exist at the appropriate time. This may mean that if the development is contingent on the provision of new infrastructure, including public transport services, it will be appropriate that the development is phased accordingly.

C) When a proposed development is acceptable in terms of use, scale, and massing, given the surrounding built form, uses and character, but it exceeds the capacity identified in a site allocation or the site is not allocated, and the borough considers the planned infrastructure capacity will be exceeded, additional infrastructure proportionate to the development should be delivered through the development. This will be identified through an infrastructure assessment during the planning application process, which will have regard to the local infrastructure delivery plan or programme, and the CIL contribution that the development will make. Where additional required infrastructure cannot be delivered, the scale of the development should be reconsidered to reflect the capacity of current or future planned supporting infrastructure.

Policy D3 Optimising site capacity through the design-led approach

The design-led approach

A) All development must make the best use of land by following a design-led approach that optimises the capacity of sites, including site allocations. Optimising site capacity means ensuring that development is of the most appropriate form and land use for the site. The design-led approach requires consideration of design options to determine the most appropriate form of development that responds to a site's context and capacity for growth, and existing and planned supporting infrastructure capacity (as set out in Policy D2 Infrastructure requirements for sustainable densities), and that best delivers the requirements set out in Part D.

B) Higher density developments should generally be promoted in locations that are well connected to jobs, services, infrastructure, and amenities by public transport, walking and cycling, in accordance with Policy D2 Infrastructure requirements for sustainable densities. Where these locations have existing areas of high-density buildings, expansion of the areas should be positively considered by Boroughs where appropriate. This could also include expanding Opportunity Area boundaries where appropriate.

C) In other areas, incremental densification should be actively encouraged by Boroughs to achieve a change in densities in the most appropriate way. This should be interpreted in the context of Policy H2.

D) Development proposals should:

Form and layout

1) enhance local context by delivering buildings and spaces that positively respond to local distinctiveness through their layout, orientation, scale, appearance, and shape, with due regard to existing and emerging street hierarchy, building types, forms and proportions

2) encourage and facilitate active travel with convenient and inclusive pedestrian and cycling routes, crossing points, cycle parking, and legible entrances to buildings, that are aligned with peoples' movement patterns and desire lines in the area

3) be street-based with clearly defined public and private environments

4) facilitate efficient servicing and maintenance of buildings and the public realm, as well as deliveries, that minimise negative impacts on the environment, public realm, and vulnerable road users

Experience

5) achieve safe, secure, and inclusive environments

6) provide active frontages and positive reciprocal relationships between what happens inside the buildings and outside in the public realm to generate liveliness and interest

7) deliver appropriate outlook, privacy, and amenity

8) provide conveniently located green and open spaces for social interaction, play, relaxation, and physical activity

9) help prevent or mitigate the impacts of noise and poor air quality

10) achieve indoor and outdoor environments that are comfortable and inviting for people to use

Quality and Character

11) respond to the existing character of a place by identifying the special and valued features and characteristics that are unique to the locality and respect, enhance and utilise the heritage assets and architectural features that contribute towards the local character

12) be of high quality, with architecture that pays attention to detail, and gives thorough consideration to the practicality of use, flexibility, safety and building lifespan through appropriate construction methods and the use of attractive, robust materials which weather and mature well

13) aim for high sustainability standards (with reference to the policies within London Plan Chapters 8 and 9) and take into account the principles of the circular economy

14) provide spaces and buildings that maximise opportunities for urban greening to create attractive resilient places that can also help the management of surface water.

E) Where development parameters for allocated sites have been set out in a Development Plan, development proposals that do not accord with the site capacity in a site allocation can be refused for this reason.

Policy S1 Developing London's social infrastructure

A) When preparing Development Plans, boroughs should ensure the social infrastructure needs of London's diverse communities are met, informed by a needs assessment of social infrastructure. Assessments should consider the need for cross-borough collaboration where appropriate and involve relevant stakeholders, including the local community.

B) In areas of major new development and regeneration, social infrastructure needs should be addressed via area-based planning such as Opportunity Area Planning Frameworks, Area Action Plans, Development Infrastructure Funding Studies, Neighbourhood Plans or master plans.

C) Development proposals that provide high quality, inclusive social infrastructure that addresses a local or strategic need and supports service delivery strategies should be supported.

D) Development proposals that seek to make best use of land, including the public-sector estate, should be encouraged and supported. This includes the co-location of different forms of social infrastructure and the rationalisation or sharing of facilities.

E) New facilities should be easily accessible by public transport, cycling and walking and should be encouraged in high streets and town centres.

F) Development proposals that would result in a loss of social infrastructure in an area of defined need as identified in the borough's social infrastructure needs assessment required under Part A should only be permitted where:

1) there are realistic proposals for re-provision that continue to serve the needs of the neighbourhood and wider community, or;

2) the loss is part of a wider public service transformation plan which requires investment in modern, fit for purpose infrastructure and facilities to meet future population needs or to sustain and improve services.

G) Redundant social infrastructure should be considered for full or partial use as other forms of social infrastructure before alternative developments are considered, unless this loss is part of a wider public service transformation plan (see Part F2).

Policy G1 Green Infrastructure [extract]

[...]

D) Development proposals should incorporate appropriate elements of green infrastructure that are integrated into London's wider green infrastructure network.

Policy G4 Open Space […]

[…]

B) Development proposals should:

1) not result in the loss of protected open space

2) where possible create areas of publicly accessible open space, particularly in areas of deficiency.

Policy G5 Urban Greening

A) Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.

B) Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development (excluding B2 and B8 uses).

C) Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in Table 8.2.

Policy G6 Biodiversity and access to nature [extract]

[…]

D) Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process.

E) Proposals which reduce deficiencies in access to nature should be considered positively.

Policy SI1 Improving air quality [extract]

[…]

B) To tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

1) Development proposals should not:

a) lead to further deterioration of existing poor air quality […]

Policy SI 2 Minimising greenhouse gas emissions

A) Major development should be net zero-carbon. This means reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

1) be lean: use less energy and manage demand during operation

2) be clean: exploit local energy resources (such as secondary heat) and supply energy efficiently and cleanly

3) be green: maximise opportunities for renewable energy by producing, storing and using renewable energy on-site

4) be seen: monitor, verify and report on energy performance.

B) Major development proposals should include a detailed energy strategy to demonstrate how the zero-carbon target will be met within the framework of the energy hierarchy.

C) A minimum on-site reduction of at least 35 per cent beyond Building Regulations is required for major development. Residential development should achieve 10 per cent, and non-residential development should achieve 15 per cent through energy efficiency measures. Where it is clearly demonstrated that the zero-carbon target cannot be fully achieved on-site, any shortfall should be provided, in agreement with the borough, either:

1) through a cash in lieu contribution to the borough's carbon offset fund, or

2) off-site provided that an alternative proposal is identified and delivery is certain.

D) Boroughs must establish and administer a carbon offset fund. Offset fund payments must be ring-fenced to implement projects that deliver carbon reductions. The operation of offset funds should be monitored and reported on annually.

E) Major development proposals should calculate and minimise carbon emissions from any other part of the development, including plant or equipment, that are not covered by Building Regulations, i.e. unregulated emissions.

F) Development proposals referable to the Mayor should calculate whole life-cycle carbon emissions through a nationally recognised Whole Life-Cycle Carbon Assessment and demonstrate actions taken to reduce life-cycle carbon emissions.

Policy SI3 Energy infrastructure

A) Boroughs and developers should engage at an early stage with relevant energy companies and bodies to establish the future energy and infrastructure requirements arising from large-scale development proposals such as Opportunity Areas, Town Centres, other growth areas or clusters of significant new development.

B) Energy masterplans should be developed for large-scale development locations (such as those outlined in Part A and other opportunities) which establish the most effective energy supply options. Energy masterplans should identify:

1) major heat loads (including anchor heat loads, with particular reference to sites such as universities, hospitals and social housing)

2) heat loads from existing buildings that can be connected to future phases of a heat network

3) major heat supply plant including opportunities to utilise heat from energy from waste plants

4) secondary heat sources, including both environmental and waste heat

5) opportunities for low and ambient temperature heat networks

6) possible land for energy centres and/or energy storage

7) possible heating and cooling network routes

8) opportunities for futureproofing utility infrastructure networks to minimise the impact from road works

9) infrastructure and land requirements for electricity and gas supplies

10) implementation options for delivering feasible projects, considering issues of procurement, funding and risk, and the role of the public sector

11) opportunities to maximise renewable electricity generation and incorporate demand-side response measures.

C) Development Plans should:

1) identify the need for, and suitable sites for, any necessary energy infrastructure requirements including energy centres, energy storage and upgrades to existing infrastructure

2) identify existing heating and cooling networks, identify proposed locations for future heating and cooling networks and identify opportunities for expanding and inter-connecting existing networks as well as establishing new networks.

D) Major development proposals within Heat Network Priority Areas should have a communal low-temperature heating system:

1) the heat source for the communal heating system should be selected in accordance with the following heating hierarchy:

a) connect to local existing or planned heat networks

b) use zero-emission or local secondary heat sources (in conjunction with heat pump, if required)

c) use low-emission combined heat and power (CHP) (only where there is a case for CHP to enable the delivery of an area-wide heat network, meet the development's electricity demand and provide demand response to the local electricity network)

d) use ultra-low NOx gas boilers

2) CHP and ultra-low NOx gas boiler communal or district heating systems should be designed to ensure that they meet the requirements in Part B of Policy SI 1 Improving air quality

3) where a heat network is planned but not yet in existence the development should be designed to allow for the cost-effective connection at a later date.

E) Heat networks should achieve good practice design and specification standards for primary, secondary and tertiary systems comparable to those set out in the CIBSE/ADE Code of Practice CP1 or equivalent.

Policy SI 4 Managing heat risk

A) Development proposals should minimise adverse impacts on the urban heat island through design, layout, orientation, materials and the incorporation of green infrastructure.

B) Major development proposals should demonstrate through an energy strategy how they will reduce the potential for internal overheating and reliance on air conditioning systems in accordance with the following cooling hierarchy:

1) reduce the amount of heat entering a building through orientation, shading, high albedo materials, fenestration, insulation and the provision of green infrastructure

2) minimise internal heat generation through energy efficient design

3) manage the heat within the building through exposed internal thermal mass and high ceilings

4) provide passive ventilation

5) provide mechanical ventilation

6) provide active cooling systems.

Policy SI 5 Water infrastructure [extract]

[…]

C) Development proposals should:

1) through the use of Planning Conditions minimise the use of mains water in line with the Optional Requirement of the Building Regulations (residential development), achieving mains water consumption of 105 litres or less per head per day (excluding allowance of up to five litres for external water consumption)

2) achieve at least the BREEAM excellent standard for the 'Wat 01' water category or equivalent (commercial development)

3) incorporate measures such as smart metering, water saving and recycling measures, including retrofitting, to help to achieve lower water consumption rates and to maximise future-proofing.

Policy SI 7 Reducing waste and supporting the circular economy

A) Resource conservation, waste reduction, increases in material reuse and recycling, and reductions in waste going for disposal will be achieved by the Mayor, waste planning authorities and industry working in collaboration to:

1) promote a more circular economy that improves resource efficiency and innovation to keep products and materials at their highest use for as long as possible

2) encourage waste minimisation and waste prevention through the reuse of materials and using fewer resources in the production and distribution of products

3) ensure that there is zero biodegradable or recyclable waste to landfill by 2026

4) meet or exceed the municipal waste recycling target of 65 per cent by 2030

5) meet or exceed the targets for each of the following waste and material streams:

   a) construction and demolition – 95 per cent reuse/recycling/recovery

   b) excavation – 95 per cent beneficial use

6) design developments with adequate, flexible, and easily accessible storage space and collection systems that support, as a minimum, the separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

B) Referable applications should promote circular economy outcomes and aim to be net zero-waste. A Circular Economy Statement should be submitted, to demonstrate:

1) how all materials arising from demolition and remediation works will be re-used and/or recycled

2) how the proposal's design and construction will reduce material demands and enable building materials, components and products to be disassembled and re-used at the end of their useful life

3) opportunities for managing as much waste as possible on site

4) adequate and easily accessible storage space and collection systems to support recycling and re-use

5) how much waste the proposal is expected to generate, and how and where the waste will be managed in accordance with the waste hierarchy

6) how performance will be monitored and reported.

C) Development Plans that apply circular economy principles and set local lower thresholds for the application of Circular Economy Statements for development proposals are supported.

Policy SI 12 Flood risk management [extract]

[…]

C) Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses. […]

Policy SI 13 Sustainable drainage [extract]

[…]

B) Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

1) rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)

2) rainwater infiltration to ground at or close to source

3) rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)

4) rainwater discharge direct to a watercourse (unless not appropriate)

5) controlled rainwater discharge to a surface water sewer or drain

6) controlled rainwater discharge to a combined sewer.

Local Planning Policy Framework

Local Plan Part 1 - Strategic Policies (2012)

Policy NPPF1: National Planning Policy Framework - Presumption in Favour of Sustainable Development

When considering development proposals the Council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area.

Planning applications that accord with the policies in this Local Plan (and, where relevant, with polices in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise.

Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then the Council will grant permission unless material considerations indicate otherwise – taking into account whether:

- Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or
- Specific policies in that Framework indicate that development should be restricted.

Policy BE1: Built Environment

The Council will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and working and that serve the long-term needs of all residents. All new developments should:

1. Achieve a high quality of design in all new buildings, alterations, extensions and the public realm which enhances the local distinctiveness of the area, contributes to community cohesion and a sense of place;
2. Be designed to be appropriate to the identity and context of Hillingdon's buildings, townscapes, landscapes and views, and make a positive contribution to the local area in terms of layout, form, scale and materials and seek to protect the amenity of surrounding land and buildings, particularly residential properties;
3. Be designed to include “Lifetime Homes” principles so that they can be readily adapted to meet the needs of those with disabilities and the elderly, 10% of these should be wheelchair accessible or easily adaptable to wheelchair accessibility encouraging places of work and leisure, streets, neighbourhoods, parks and open spaces to be designed to meet the needs of the community at all stages of people’s lives;
4. In the case of 10 dwellings or over, achieve a satisfactory assessment rating in terms of the latest Building for Life standards (as amended or replaced from time to time);
5. Improve areas of poorer environmental quality, including within the areas of relative disadvantage of Hayes, Yiewsley and West Drayton. All regeneration schemes should ensure that they are appropriate to their historic context, make use of heritage assets and reinforce their significance;
6. Incorporate a clear network of routes that are easy to understand, inclusive, safe, secure and connect positively with interchanges, public transport, community facilities and services;
7. Improve the quality of the public realm and provide for public and private spaces that are attractive, safe, functional, diverse, sustainable, accessible to all, respect the local character and landscape, integrate with the development, enhance and protect biodiversity through the inclusion of living walls, roofs and areas for wildlife, encourage physical activity and where appropriate introduce public art;
8. Create safe and secure environments that reduce crime and fear of crime, anti-social behaviour and risks from fire and arson having regard to Secure by Design standards and address resilience to terrorism in major development proposals;
9. Not result in the inappropriate development of gardens and green spaces that erode the character and biodiversity of suburban areas and increase the risk of flooding through the loss of permeable areas;
10. Maximise the opportunities for all new homes to contribute to tackling and adapting to climate change and reducing emissions of local air quality pollutants. The Council will require all new development to achieve reductions in carbon dioxide emission in line with the London Plan targets through energy efficient design and effective use of low and zero carbon technologies. Where the required reduction from on-site renewable energy is not feasible within major developments, contributions off-site will be sought. The Council will seek to merge a suite of sustainable design goals, such as the use of SUDS, water efficiency, lifetime homes, and energy efficiency into a requirement measured against

the Code for Sustainable Homes and BREEAM. These will be set out within the Hillingdon Local Plan: Part 2- Development Management Policies Local Development Document (LDD). All developments should be designed to make the most efficient use of natural resources whilst safeguarding historic assets, their settings and local amenity and include sustainable design and construction techniques to increase the re-use and recycling of construction, demolition and excavation waste and reduce the amount disposed to landfill;

11. In the case of tall buildings, not adversely affect their surroundings including the local character, cause harm to the significance of heritage assets or impact on important views. Appropriate locations for tall buildings will be defined on a Character Study and may include parts of Uxbridge and Hayes subject to considering the Obstacle Limitation Surfaces for Heathrow Airport. Outside of Uxbridge and Hayes town centres, tall buildings will not be supported. The height of all buildings should be based upon an understanding of the local character and be appropriate to the positive qualities of the surrounding townscape.

Support will be given for proposals that are consistent with local strategies, guidelines, supplementary planning documents and Hillingdon Local Plan: Part 2- Development Management Policies.

Policy EM1: Climate Change Adaptation and Mitigation

The Council will ensure that climate change mitigation is addressed at every stage of the development process by:

1. Prioritising higher density development in urban and town centres that are well served by sustainable forms of transport.
2. Promoting a modal shift away from private car use and requiring new development to include innovative initiatives to reduce car dependency.
3. Ensuring development meets the highest possible design standards whilst still retaining competitiveness within the market.
4. Working with developers of major schemes to identify the opportunities to help provide efficiency initiatives that can benefit the existing building stock.
5. Promoting the use of decentralised energy within large scale development whilst improving local air quality levels.
6. Targeting areas with high carbon emissions for additional reductions through low carbon strategies. These strategies will also have an objective to minimise other pollutants that impact on local air quality. Targeting areas of poor air quality for additional emissions reductions.
7. Encouraging sustainable techniques to land remediation to reduce the need to transport waste to landfill. In particular developers should consider bioremediation as part of their proposals.
8. Encouraging the installation of renewable energy for all new development in meeting the carbon reduction targets savings set out in the London Plan. Identify opportunities for new sources of electricity generation including anaerobic digestion, hydroelectricity and a greater use of waste as a resource.
9. Promoting new development to contribute to the upgrading of existing housing stock where appropriate.

The Borough will ensure that climate change adaptation is addressed at every stage of the development process by:

10. Locating and designing development to minimise the probability and impacts of flooding.
11. Requiring major development proposals to consider the whole water cycle impact which includes flood risk management, foul and surface water drainage and water consumption.
12. Giving preference to development of previously developed land to avoid the loss of further green areas.
13. Promoting the use of living walls and roofs, alongside sustainable forms of drainage to manage surface water run-off and increase the amount of carbon sinks.
14. Promoting the inclusion of passive design measures to reduce the impacts of urban heat effects.

Policy EM4: Open Space and Informal Recreation

The Council will safeguard, enhance and extend the network of open spaces, informal recreational and environmental opportunities that operate as carbon sinks and that meet local community needs and facilitate active lifestyles by providing spaces within walking distance of homes. Provision should be made as close as possible to the community it will serve. There will be a presumption against any net loss of open space in the Borough.

The Council will identify new opportunities for open space through an Open Space Strategy. Major developments will be expected to make appropriate contributions to the delivery of new opportunities, or to the improvement and enhancements of existing facilities.
The Council will seek to protect existing tree and landscape features and enhance open spaces with new areas of vegetation cover (including the linking of existing fragmented areas) including front and back gardens for the benefit of wildlife and a healthier lifestyle, mitigating climate change.
The Council will work with DEFRA to identify and protect open spaces that provide quiet areas and will also consider whether other areas merit protection of relative tranquillity.
The Council will work with other local authorities and agencies to pursue the key aims of the Colne Valley Park.

Policy EM6 Flood Risk Management

The Council will require new development to be directed away from Flood Zones 2 and 3 in accordance with the principles of the National Planning Policy Framework (NPPF).

The subsequent Hillingdon Local Plan: Part 2 -Site Specific Allocations LDD will be subjected to the Sequential Test in accordance with the NPPF. Sites will only be allocated within Flood Zones 2 or 3 where there are overriding issues that outweigh flood risk. In these instances, policy criteria will be set requiring future applicants of these sites to demonstrate that flood risk can be suitably mitigated.

The Council will require all development across the borough to use sustainable urban drainage systems (SUDS) unless demonstrated that it is not viable. The Council will encourage SUDS to be linked to water efficiency methods. The Council may require developer contributions to guarantee the long term maintenance and performance of SUDS is to an appropriate standard.

Policy EM7: Biodiversity and Geological Conservation

The Council will review all the Borough grade Sites of Importance for Nature Conservation (SINCs). Deletions, amendments and new designations will be made where appropriate within the Hillingdon Local Plan: Part 2- Site Specific Allocations Local Development Document. These designations will be based on previous recommendations made in discussions with the Greater London Authority.

Hillingdon's biodiversity and geological conservation will be preserved and enhanced with particular attention given to:

1. The conservation and enhancement of the natural state of:
    - Harefield Gravel Pits
    - Colne Valley Regional Park
    - Fray's Farm Meadows
    - Harefield Pit
2. The protection and enhancement of all Sites of Importance for Nature Conservation. Sites with Metropolitan and Borough Grade 1 importance will be protected from any adverse impacts and loss. Borough Grade 2 and Sites of Local Importance will be protected from loss with harmful impacts mitigated through appropriate compensation.
3. The protection and enhancement of populations of protected species as well as priority species and habitats identified within the UK, London and the Hillingdon Biodiversity Action Plans.
4. Appropriate contributions from developers to help enhance Sites of Importance for Nature Conservation in close proximity to development and to deliver/ assist in the delivery of actions within the Biodiversity Action Plan.
5. The provision of biodiversity improvements from all development, where feasible.
6. The provision of green roofs and living walls which contribute to biodiversity and help tackle climate change.
7. The use of sustainable drainage systems that promote ecological connectivity and natural habitats.

Policy EM11: Sustainable Waste Management

The Council will aim to reduce the amount of waste produced in the Borough and work in conjunction with its partners in West London, to identify and allocate suitable new sites for waste management facilities within the West London Waste Plan to

provide sufficient capacity to meet the apportionment requirements of the London Plan which is 382 thousand tonnes per annum for Hillingdon by 2026.

The Council will require all new development to address waste management at all stages of a development's life from design and construction through to the end use and activity on site, ensuring that all waste is managed towards the upper end of the waste hierarchy.

The Council will follow the waste hierarchy by promoting the reduction of waste generation through measures such as bioremediation of soils and best practice in building construction. The Council will promote using waste as a resource and encouraging the re-use of materials and recycling. The Council will also support opportunities for energy recovery from waste and composting where appropriate. The Council will safeguard existing waste sites unless compensatory provision can be made.

The Council will seek to maximise the use of existing waste management sites through intensification or co-location of facilities.

Local Plan Part 2 Development Management Policies – (2020)

Policy DMHB 11: Design of New Development

A. All development, including extensions, alterations and new buildings will be required to be designed to the highest standards and, incorporate principles of good design including:

i. harmonising with the local context by taking into account the surrounding:

- scale of development, considering the height, mass and bulk of adjacent structures;
- building plot sizes and widths, plot coverage and established street patterns;
- building lines and setbacks, rooflines, streetscape rhythm, for example, gaps between structures and other streetscape elements, such as degree of enclosure;
- architectural composition and quality of detailing;
- local topography, views both from and to the site; and
- impact on neighbouring open spaces and their environment.

ii. ensuring the use of high quality building materials and finishes;

iii. ensuring that the internal design and layout of development maximises sustainability and is adaptable to different activities;

iv. protecting features of positive value within and adjacent to the site, including the safeguarding of heritage assets, designated and un-designated, and their settings; and

v. landscaping and tree planting to protect and enhance amenity, biodiversity and green infrastructure.

B. Development proposals should not adversely impact on the amenity, daylight and sunlight of adjacent properties and open space.

C. Development will be required to ensure that the design safeguards the satisfactory re-development of any adjoining sites which have development potential. In the case of proposals for major development sites, the Council will expect developers to prepare master plans and design codes and to agree these with the Council before developing detailed designs.

D. Development proposals should make sufficient provision for well designed internal and external storage space for general, recycling and organic waste, with suitable access for collection. External bins should be located and screened to avoid nuisance and adverse visual impacts to occupiers and neighbours.

Policy DMEI 1: Living Walls and Roofs and on-site Vegetation

All development proposals are required to comply with the following:

i. All major development6 should incorporate living roofs and/or walls into the development. Suitable justification should be provided where living walls and roofs cannot be provided; and

ii. Major development in Air Quality Management Areas must provide onsite provision of living roofs and/or walls. A suitable offsite contribution may be required where onsite provision is not appropriate.

Policy DMEI 2: Reducing Carbon Emissions

A. All developments are required to make the fullest contribution to minimising carbon dioxide emissions in accordance with London Plan targets.

B. All major development proposals must be accompanied by an energy assessment showing how these reductions will be achieved.

C. Proposals that fail to take reasonable steps to achieve the required savings will be resisted. However, where it is clearly demonstrated that the targets for carbon emissions cannot be met onsite, the Council may approve the application and seek an off-site contribution to make up for the shortfall.

Policy DMEI 3: Decentralised Energy

A. All major developments are required to be designed to be able to connect to a Decentralised Energy Network (DEN).

B. Major developments located within 500 metres of an existing DEN, and minor new-build developments located within 100 metres, will be required to connect to that network, including provision of the means to connect to that network and a reasonable financial contribution to the connection charge, unless a feasibility assessment demonstrates that connection is not reasonably possible.

C. Major developments located within 500 metres of a planned future DEN, which is considered by the Council likely to be operational within 3 years of a grant of planning permission, will be required to provide a means to connect to that network and developers shall provide a reasonable financial contribution for the future cost of connection and a commitment to connect via a legal agreement or contract, unless a feasibility assessment demonstrates that connection is not reasonably possible.

D. The Council will support the development of DENs and energy centres in principle, subject to meeting the wider policy requirements of this plan and in particular on design and air quality.

Policy DMEI 7: Biodiversity Protection and Enhancement

A. The design and layout of new development should retain and enhance any existing features of biodiversity or geological value within the site. Where loss of a significant existing feature of biodiversity is unavoidable, replacement features of equivalent biodiversity value should be provided on-site. Where development is constrained and cannot provide high quality biodiversity enhancements on-site, then appropriate contributions will be sought to deliver off-site improvements through a legal agreement.

B. If development is proposed on or near to a site considered to have features of ecological or geological value, applicants must submit appropriate surveys and assessments to demonstrate that the proposed development will not have unacceptable effects. The development must provide a positive contribution to the protection and enhancement of the site or feature of ecological value.

C. All development alongside, or that benefits from a frontage on to a main river or the Grand Union Canal will be expected to contribute to additional biodiversity improvements.

D. Proposals that result in significant harm to biodiversity which cannot be avoided, mitigated, or, as a last resort, compensated for, will normally be refused.

Policy DMEI9: Management of Flood Risk

A. Development proposals in Flood Zones 2 and 3a will be required to demonstrate that there are no suitable sites available in areas of lower flood risk. Where no appropriate sites are available, development should be located on the areas of lowest flood risk within the site. Flood defences should provide protection for the lifetime of the development. Finished floor levels should reflect the Environment Agency's latest guidance on climate change.

B. Development proposals in these areas will be required to submit an appropriate level Flood Risk Assessment (FRA) to demonstrate that the development is resilient to all sources of flooding.

C. Development in Flood Zone 3b will be refused in principle unless identified as an appropriate development in Flood Risk Planning Policy Guidance. Development for appropriate uses in Flood Zone 3b will only be approved if accompanied by an appropriate FRA that demonstrates the development will be resistant and resilient to flooding and suitable warning and evacuation methods are in place.

D. Developments may be required to make contributions (through legal agreements) to previously identified flood improvement works that will benefit the development site.

E. Proposals that fail to make appropriate provision for flood risk mitigation, or which would increase the risk or consequences of flooding, will be refused.

Policy DMEI10: Water Management, Efficiency, and Quality

A. Applications for all new build developments (not conversions, change of use, or refurbishment) are required to include a drainage assessment demonstrating that appropriate sustainable drainage systems (SuDS) have been incorporated in accordance with the London Plan Hierarchy (Policy 5.13: Sustainable drainage).

B. All major new build developments, as well as minor developments in Critical Drainage Areas or an area identified at risk from surface water flooding must be designed to reduce surface water run-off rates to no higher than the pre-development greenfield run-off rate in a 1:100 year storm scenario, plus an appropriate allowance for climate change for the worst storm duration. The assessment is required regardless of the changes in impermeable areas and the fact that a site has an existing high run-off rate will not constitute justification.

C. Rain Gardens and non householder development should be designed to reduce surface water run-off rates to Greenfield run-off rates.

D. Schemes for the use of SuDS must be accompanied by adequate arrangements for the management and maintenance of the measures used, with appropriate contributions made to the Council where necessary.

E. Proposals that would fail to make adequate provision for the control and reduction of surface water run-off rates will be refused.

F. Developments should be drained by a SuDs system and must include appropriate methods to avoid pollution of the water environment. Preference should be given to utilising the drainage options in the SuDS hierarchy which remove the key pollutants that hinder improving water quality in Hillingdon. Major development should adopt a 'treatment train' approach where water flows through different SuDS to ensure resilience in the system.

Water Efficiency

G. All new development proposals (including refurbishments and conversions) will be required to include water efficiency measures, including the collection and reuse of rain water and grey water.

H. All new residential development should demonstrate water usage rates of no more than 105 litres/person/day.

I. It is expected that major development8 proposals will provide an integrated approach to surface water run-off attenuation, water collection, recycling and reuse.

Water and Wastewater Infrastructure

J. All new development proposals will be required to demonstrate that there is sufficient capacity in the water and wastewater infrastructure network to support the proposed development. Where there is a capacity constraint the local planning authority will require the developer to provide a detailed water and/or drainage strategy to inform what infrastructure is required, where, when and how it will be delivered.

Policy DMIN4: Re-use and Recycling of Aggregates

A. The Council will promote the recycling of construction, demolition and excavation waste.

B. All developments will be encouraged to:

i. recycle and re-use construction, demolition and excavation waste as aggregates;

ii. process and re-use the recyclable material on-site, and where this is not possible, the material should be re-used at another site or for land restoration; and

iii. use substitute or recycled materials in new development in place of primary minerals.

C. Planning permission for aggregates recycling on active minerals extraction and landfill sites will be supported, subject to local amenity and other policies within the Local Plan. Applications for aggregates recycling sites in other areas such as Strategic Industrial Locations will be required to satisfy other relevant policies in the Local Plan including the West London Waste Plan.

Policy DMT 1: Managing Transport Impacts

A. Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for developments to be acceptable they are required to:

i. be accessible by public transport, walking and cycling either from the catchment area that it is likely to draw its employees, customers or visitors from and/or the services and facilities necessary to support the development;

ii. maximise safe, convenient and inclusive accessibility to, and from within developments for pedestrians, cyclists and public transport users;

iii. provide equal access for all people, including inclusive access for disabled people;

iv. adequately address delivery, servicing and drop-off requirements; and

v. have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network.

B. Development proposals will be required to undertake a satisfactory Transport Assessment and Travel Plan if they meet or exceed the appropriate thresholds. All major developments11 that fall below these thresholds will be required to produce a satisfactory Transport Statement and Local Level Travel Plan. All these plans should demonstrate how any potential impacts will be mitigated and how such measures will be implemented.

C. GLA Carbon Emissions Reporting Spreadsheet

Part L 2021 Performance

Residential

Table 1: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for residential buildings

	Carbon Dioxide Emissions for residential buildings (Tonnes CO_2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	0.0	
After energy demand reduction (be lean)	0.0	
After heat network connection (be clean)	0.0	
After renewable energy (be green)	0.0	

Table 2: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for residential buildings

	Regulated residential carbon dioxide savings	
	(Tonnes CO_2 per annum)	(%)
Be lean: savings from energy demand reduction	0.0	0%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	0.0	0%
Cumulative on site savings	**0.0**	**0%**
Annual savings from off-set payment	0.0	-
	(Tonnes CO_2)	
Cumulative savings for off-set payment	**0**	-
Cash in-lieu contribution (£)	**0**	

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development

Non-residential

Table 3: Carbon Dioxide Emissions after each stage of the Energy Hierarchy for non-residential buildings

	Carbon Dioxide Emissions for non-residential buildings (Tonnes CO_2 per annum)	
	Regulated	Unregulated
Baseline: Part L 2021 of the Building Regulations Compliant Development	5.5	1.7
After energy demand reduction (be lean)	4.7	1.7
After heat network connection (be clean)	4.7	1.7
After renewable energy (be green)	3.5	1.7

Table 4: Regulated Carbon Dioxide savings from each stage of the Energy Hierarchy for non-residential buildings

	Regulated non-residential carbon dioxide savings	
	(Tonnes CO_2 per annum)	(%)
Be lean: savings from energy demand reduction	0.8	15%
Be clean: savings from heat network	0.0	0%
Be green: savings from renewable energy	1.2	22%
Total Cumulative Savings	**2.0**	**37%**
Annual savings from off-set payment	3.5	-
	(Tonnes CO_2)	
Cumulative savings for off-set payment	**104**	-
Cash in-lieu contribution (£)	**9,855**	

*carbon price is based on GLA recommended price of £95 per tonne of carbon dioxide unless Local Planning Authority price is inputted in the 'Development

D. Indicative Energy Model Outputs (Be Lean)

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

Temporary Clubhouse - Be Lean

As designed

Date: Wed Dec 13 09:15:07 2023

Administrative information

Building Details

Address: Inspiration Golf Club, West End Lane, London, UB5 6RB

Certifier details

Name: Ensphere Group

Telephone number: Phone

Address: 55a Catherine Place, London, SW1E 6DY

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.24

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

Foundation area [m^2]: 252.37

The CO_2 emission and primary energy rates of the building must not exceed the targets

Target CO_2 emission rate (TER), $kgCO_2/m^2annum$	21.71	
Building CO_2 emission rate (BER), $kgCO_2/m^2annum$	18.56	
Target primary energy rate (TPER), kWh_{PE}/m^2annum	235.69	
Building primary energy rate (BPER), kWh_{PE}/m^2annum	201.47	
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	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.15	0.15	SP000001_W1
Floors	0.18	0.11	0.11	SP000001_F
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.11	0.11	SP000001_C
Windows** and roof windows	1.6	1.4	1.4	SP000002_W1_O0
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1.6	1.6	SP000001_W4_O0
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m^2K)] $U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m^2K])

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m^2K)]

* 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/m^2K

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	3

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	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- ASHP

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	5	-	-	-
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.

1- SYST0001-DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	2.86	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
Changing Rooms	0.3	-	-	-	-	-	-	-	-	-	N/A
WC	0.3	-	-	-	-	-	-	-	-	-	N/A
WC	0.3	-	-	-	-	-	-	-	-	-	N/A
Kitchen	0.3	-	-	-	-	-	-	-	-	-	N/A

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
Changing Rooms	120	-	-
Main Area	120	-	-
WC	120	-	-
WC	120	-	-
CCTV	120	-	-

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
Storage	120	-	-
Office	120	-	-
Circulation	120	-	-
Storage	120	-	-
Kitchen	120	-	-

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?
Changing Rooms	N/A	N/A
Main Area	NO (-10.6%)	NO
WC	N/A	N/A
WC	N/A	N/A
CCTV	N/A	N/A
Storage	N/A	N/A
Office	N/A	N/A
Circulation	NO (-93.8%)	NO
Storage	N/A	N/A
Kitchen	N/A	N/A

Regulation 25A: Consideration of high efficiency alternative energy systems

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

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m²]	252.4	252.4
External area [m²]	755.8	755.8
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	3	3
Average conductance [W/K]	158.71	227.36
Average U-value [W/m²K]	0.21	0.3
Alpha value* [%]	36.58	20.95

* 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
	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
100	**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	16.1	17.73
Cooling	8.77	7.86
Auxiliary	0.29	4.25
Lighting	6.08	6.1
Hot water	105	123.46
Equipment*	50.89	50.89
TOTAL**	**136.25**	**159.39**

* 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	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*0*	*0*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	268.08	293.05
Primary energy [kWh_{PE}/m²]	201.47	235.69
Total emissions [kg/m²]	18.56	21.71

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 SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
	Actual	150.1	118	16.1	8.8	0.3	2.59	3.74	2.64	5
	Notional	168.5	124.5	17.7	7.9	0.4	2.64	4.4	---	---

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

E. Indicative Energy Model Outputs (Be Green)

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2021

Project name

Temporary Clubhouse - Be Green

As designed

Date: Tue Dec 19 14:59:58 2023

Administrative information

Building Details

Address: Inspiration Golf Club, West End Lane, London, UB5 6RB

Certifier details

Name: Ensphere Group

Telephone number: Phone

Address: 55a Catherine Place, London, SW1E 6DY

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.24

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

Foundation area [m²]: 252.37

The CO_2 emission and primary energy rates of the building must not exceed the targets

Target CO_2 emission rate (TER), kgCO_2/m²annum	21.71	
Building CO_2 emission rate (BER), kgCO_2/m²annum	13.7	
Target primary energy rate (TPER), kWh$_{PE}$/m²annum	235.69	
Building primary energy rate (BPER), kWh$_{PE}$/m²annum	148.97	
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	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	First surface with maximum value
Walls*	0.26	0.15	0.15	SP000001_W1
Floors	0.18	0.11	0.11	SP000001_F
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.11	0.11	SP000001_C
Windows** and roof windows	1.6	1.4	1.4	SP000002_W1_O0
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1.6	1.6	SP000001_W4_O0
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m²K)]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m²K)]

$U_{i\text{-}Calc}$ = Calculated maximum individual element 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
m³/(h.m²) at 50 Pa	8	3

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	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- ASHP

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4	5	-	-	-
Standard value	2.5*	5	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.

1- SYST0001-DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	4	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

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Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
Changing Rooms	0.3	-	-	-	-	-	-	-	-	-	N/A
WC	0.3	-	-	-	-	-	-	-	-	-	N/A
WC	0.3	-	-	-	-	-	-	-	-	-	N/A
Kitchen	0.3	-	-	-	-	-	-	-	-	-	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
Changing Rooms	120	-	-
Main Area	120	-	-
WC	120	-	-
WC	120	-	-
CCTV	120	-	-

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
Storage	120	-	-
Office	120	-	-
Circulation	120	-	-
Storage	120	-	-
Kitchen	120	-	-

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?
Changing Rooms	N/A	N/A
Main Area	NO (-10.6%)	NO
WC	N/A	N/A
WC	N/A	N/A
CCTV	N/A	N/A
Storage	N/A	N/A
Office	N/A	N/A
Circulation	NO (-93.8%)	NO
Storage	N/A	N/A
Kitchen	N/A	N/A

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
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Heating	10.63	17.73
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Lighting	6.08	6.1
Hot water	75.08	123.46
Equipment*	50.89	50.89
TOTAL**	**100.85**	**159.39**

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

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	*0*	*0*

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	268.08	293.05
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F. General Notes

The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Ensphere Group Ltd for inaccuracies in the data supplied by any other party.

The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.

No site visits have been carried out, unless otherwise specified.

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