

Sustainability Statement

**Land Forming Part of Former Western International Market Site,
Southall Lane, Hayes, UB2 5XJ**

Prepared for Quattro UK
July 2020



envision

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EXECUTIVE SUMMARY

1. This Sustainability Statement has been prepared by Envision on behalf of Quattro UK Ltd (The Applicant) and is submitted to support a full planning application for the 'Erection of construction and demolition waste recycling facility, concrete batching plant and associated weighbridge, weighbridge office, site office and welfare facilities, storage bays, substation, car and HGV parking and other ancillary structures, and use of land for fleet parking (works applied for retrospectively). Consent sought for temporary period ending 21 December 2027'.
2. The application follows the grant of planning permission under application ref: 01032/E/P44, decision dated 18 January 2018, for substantially the same form of development, comprising:

"Erection of a construction and demolition waste recycling facility, concrete batching plant and associated weighbridge, weighbridge office, and welfare facilities, storage bays, car and HGV parking and use of land for fleet parking. Consent sought for a temporary period of three years'.
3. That application was granted consent with a Sustainability statement and Energy assessment, with additional energy details of the approved modular office secured through Condition 17. An application (ref: 01032/E/P44(5-17) has been made to discharge condition 17 of the previous consent (ref: 01032/E/P44) however it remains undetermined.. This Sustainability Statement demonstrates how the new planning application proposals would continue to be in accordance with relevant sustainability policies and to provide the necessary energy information as requested through Condition 17.
4. The sustainability Statement has identified various measures against wider policy from the London Plan and LB Hounslow local policy that could be adopted to contribute to the development's sustainability. The statement sets out a series of practical measures that would be brought forward in design and construction which contribute to the developments' sustainability. This includes:
 - Secure and sheltered cycle parking for 20 staff and visitors.
 - The ongoing utilisation of staff travel planning initiatives, secured by previous S106 agreements, including the provision of a showers for staff welfare facilities;
 - The modular offices recovered and refurbished from existing offices on site will help to minimise embodied energy otherwise associated with new construction. These will be re-assembled to a similarly high level of air tightness.
 - High efficiency LED lamps with an efficacy of 100 luminaire lumens/cw in all buildings.
 - PIR occupancy sensors will be installed in WCs, offices and meeting rooms.
 - LED external lighting controlled via time clock and photo sensor.
5. The above measures are considered to demonstrate full alignment with sustainability policy in LB Hounslow and relevant policies of the London Plan (2016).

1 INTRODUCTION

- 1.1 Envision has been appointed to prepare a Sustainability Statement on behalf of Quattro UK Ltd (The Applicant) and is submitted to support a full planning application for the “Erection of construction and demolition waste recycling facility, concrete batching plant and associated weighbridge, weighbridge office, site office and welfare facilities, storage bays, substation, car and HGV parking and other ancillary structures, and use of land for fleet parking (works applied for retrospectively). Consent sought for temporary period ending 21 December 2027”. The proposed site is on land forming adjacent to the Western International Market site in the London Borough of Hounslow.
- 1.2 The primary purpose of this statement is to explain how sustainable design and construction measures already in use on the site, and those now proposed with this application, align with local planning policy and to also provide the details as requested through Planning Condition 17 attached to the original grant of planning permission under application ref 01032/E/P44 in January 2018.
- 1.3 This statement is structured as follows:
- The remainder of this section describes the site location and the development proposals.
 - Section 2 provides a description of the main policies relevant to the development’s sustainable design and construction.
 - Section 3 presents a summary of the sustainability measures proposed and how this aligns with relevant policy.
 - Section 4 includes an energy assessment and outlined a strategy for the relocation of the modular offices; and
 - Section 5 provides a concluding summary.

Location and Site Description

- 1.4 The application site totals some 1.5 ha in size (previously 1.7ha (01032/E/P44)) and is largely rectangular in shape. The site lies on the western side of Southall Lane which runs north to south and forms the eastern boundary of the site and is located approximately mid-way between Hayes Road to the north and M4 to the south. Along the eastern boundary (with Southall Lane) the land is bounded with mature trees running along the full extent. To the east of Southall Lane lies an office complex, warehouse facilities, the Airlinks Golf Club and the David Lloyd Sports Centre.
- 1.5 The main site access road from Southall Lane (shared with the adjoining Hounslow Household Waste Recycling Facility to the west) forms the southern boundary of the application site. Vehicular access to the site is located centrally along the southern boundary. A pedestrian access route is provided to the south-eastern corner to/from Southall Lane. To the south of the shared access road (but outside of the application site) the land is again bounded with some vegetated areas and comprises part of a larger area of open space extend south and south-west.

- 1.6 To the immediate west of the application site is the recently constructed Hounslow Household Waste Facility. This principally comprises a materials handling facility (12 m high), an office building (4m high) and vehicle workshop (8.5m high).
- 1.7 Further to the west of Household Waste Facility is the Western International Market redevelopment comprising of several large-scale buildings and associated car parking areas. The site location is shown in figure 1.1.

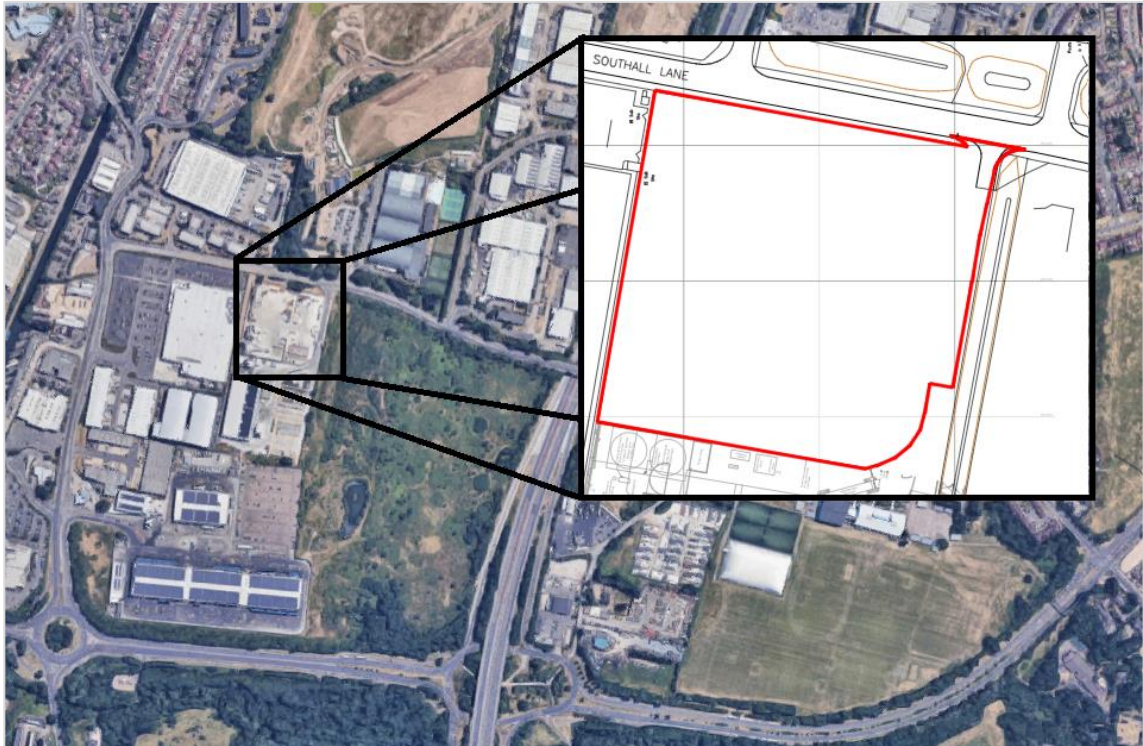


Figure 1.1 Site Location

The Proposed Development

- 1.8 The proposed development involves the erection of a construction and demolition waste recycling facility, concrete batching plant and associated weighbridge, weighbridge office, site office and welfare facilities, storage bays, substation, car and HGV parking and other ancillary structures, and use of land for fleet parking (works applied for retrospectively as the majority of the works have been built out). Consent sought for a temporary period ending 21 December 2027.
- 1.9 The development proposals seek to amend the scheme previously consented (01032/E/P44), which have predominantly been required due to a reduction in the developable area from 1.7ha to 1.5ha. Whilst many principles remain the same, as explained within the planning statement, the reduction in the developable area (loss of land on eastern and western boundary) and operational requirements has resulted in some alterations to the layout and form of the previously approved structures. Key features of the development as now proposed are as follows:

- All structures running along the northern boundary, comprising the building for out-going waste, recycling plant (picking station), building for incoming waste and concrete batching plant (CBP), have been pulled away from the eastern boundary (boundary with Southall Lane) to allow full retention of the vegetated/treed area resulting in:
- End-of line building relocated 10 m to west, and recycling plant (picking station) and end of line building reduced in length from 47 m to 28 m; height of picking station unchanged at 6.3m; height of end of line building increased from 6.4m to 7m at eaves and 7.4 at ridge.
- End of Line building extended along eastern boundary by addition of enclosed recycled material stock bays. Length 25m, height 7m at eastern boundary (rear), 7.4m on western elevation (front), and replacing 12m long, 3.5m high sleeper/steel wall previously proposed in this location.
- Building for incoming waste relocated 9 m to west and re-orientated so entrance faces east (rather than south). Dimensions reduced from: Length along entrance (south) façade 34m x Width 30m previously approved to Length along entrance (east) façade 31 m by Width 30m; Height to ridge and eaves remain the same at 10.8m and 9m respectively.
- CBP relocated 11m to west, with minor alterations to footprint and addition of 1 cement silo; max height remains the same at 14.95m.
- Aggregate storage bays relocated from western boundary due to insufficient space (due to reduction in width of site) to south of CBP running east-west; Length increased from 26m to 33m, height to max point (front) increased from 5.4m to 7m; Additional aggregate storage bays provided immediately adjacent to southern façade of incoming waste building - Length 24m, height at max point 7m;
- New 5m high concrete wall with 2m metal sheeting above with cranked canopy and automated sprinkler system proposed to additionally enclose operational area on eastern boundary; 5 m high concrete wall and automated sprinkler system to extend centrally into the site from the eastern boundary to separate operational activity and the weighbridge/parking area to south.
- Remainder of site boundary treatment, sleeper and steel wall to eastern and northern boundary remains unchanged.
- Weighbridge office relocated from centre of weighbridge to east of weighbridge and raised up on stilts. Weighbridge office dimensions amended from H 3.8m, L 12m, W 4.5m - amended to H 7.3m (comprised of 3.9m stilts and 3.4m high cabin above), L 12m, W 8m.
- New separate internal barrier controlled in/out for HGVs accessing the CBP provided west of weighbridge.
- Welfare/Office building increased in length from 11.2m to 18.3m and width from 7.2 -to 9.3 m. Height remains unchanged at 7.3m.
- New low-level site security offices provided to southern boundary between welfare office building and internal site access (H 3.8m, L 8m, W 5m).

- Amendments to car and HGV parking layout, including reduction of car parking spaces from 37 to 26 and reduction in HGV parking spaces from 36 to 25.
- Cycle storage location and provision of 20 cycles and 1 adapted cycle space remains unchanged.
- Amendments to pedestrian walking routes and provision of new pedestrian access point to south-eastern corner of site.
- Amendments to drainage scheme to reflect reconfigured site layout.
- Substation (previously approved under separate application ref: 01032/E/P46 dated 10 May 2018) relocated 3m northward on eastern boundary (footprint and height remain the same as previously approved).
- New switch room located centrally on eastern boundary adjacent substation.

1.10 A block plan layout of the proposed development is shown in Figure 1.2.

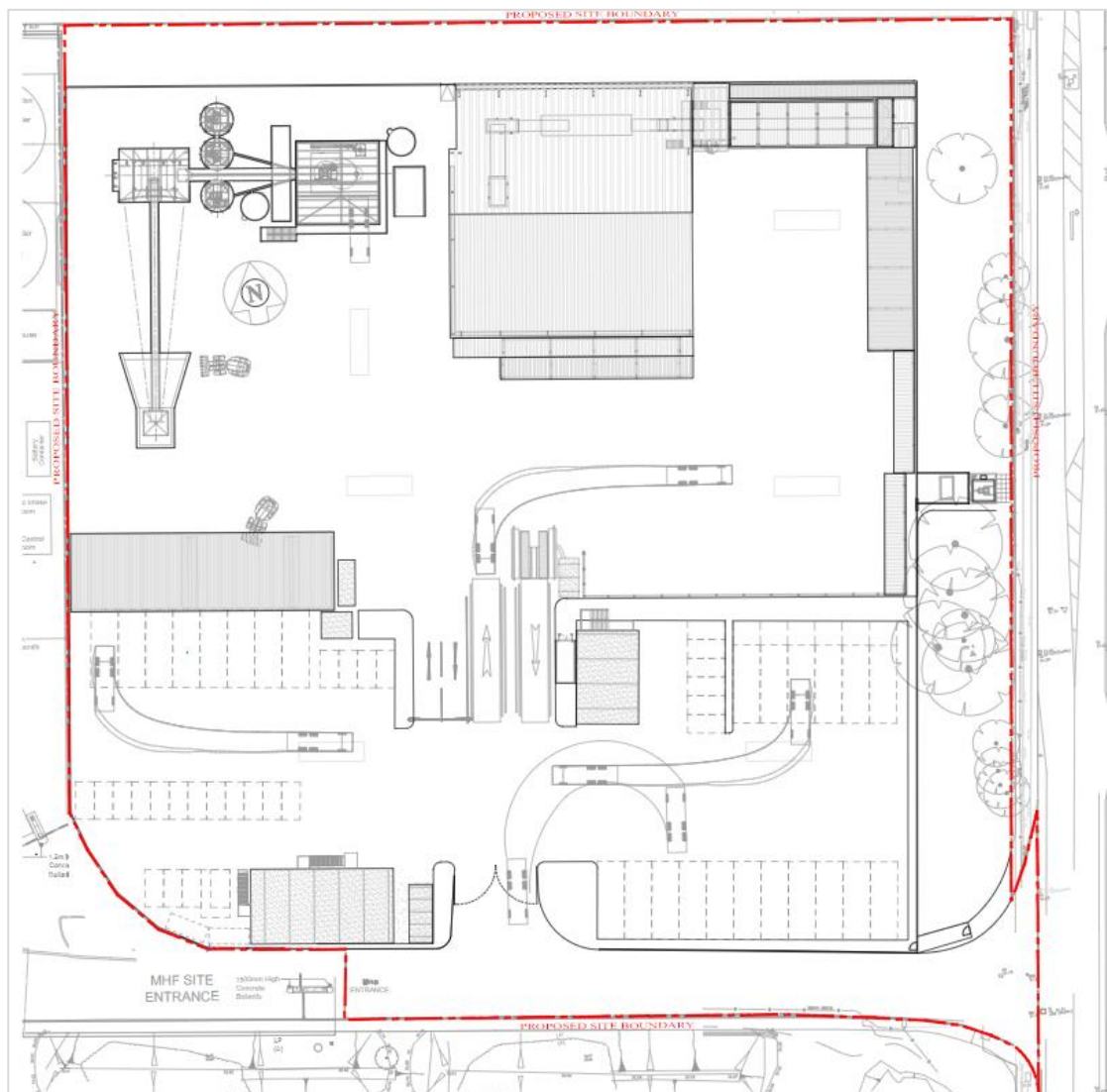


Figure 1.2 Proposed Development

- 1.11 Whilst the majority of buildings and structures on site are associated with industrial plant equipment and processes, not governed by Part L of the Building Regulations, the development will include temporary porta cabin type buildings for staff welfare, weighbridge functions and security. The welfare and office building has been reused from another Quattro facility at Horn Lane, Acton. These will be remodelled and positioned at the front of the site. The proposal to re-use this building represents a highly sustainable approach to redeveloping the site, however further improvements are proposed in line with best practice. The general layout and arrangement of the two-storey building, alongside the weighbridge office and security office are shown in Figure 1.3. Further details are available on architects plans H11930 – 14.

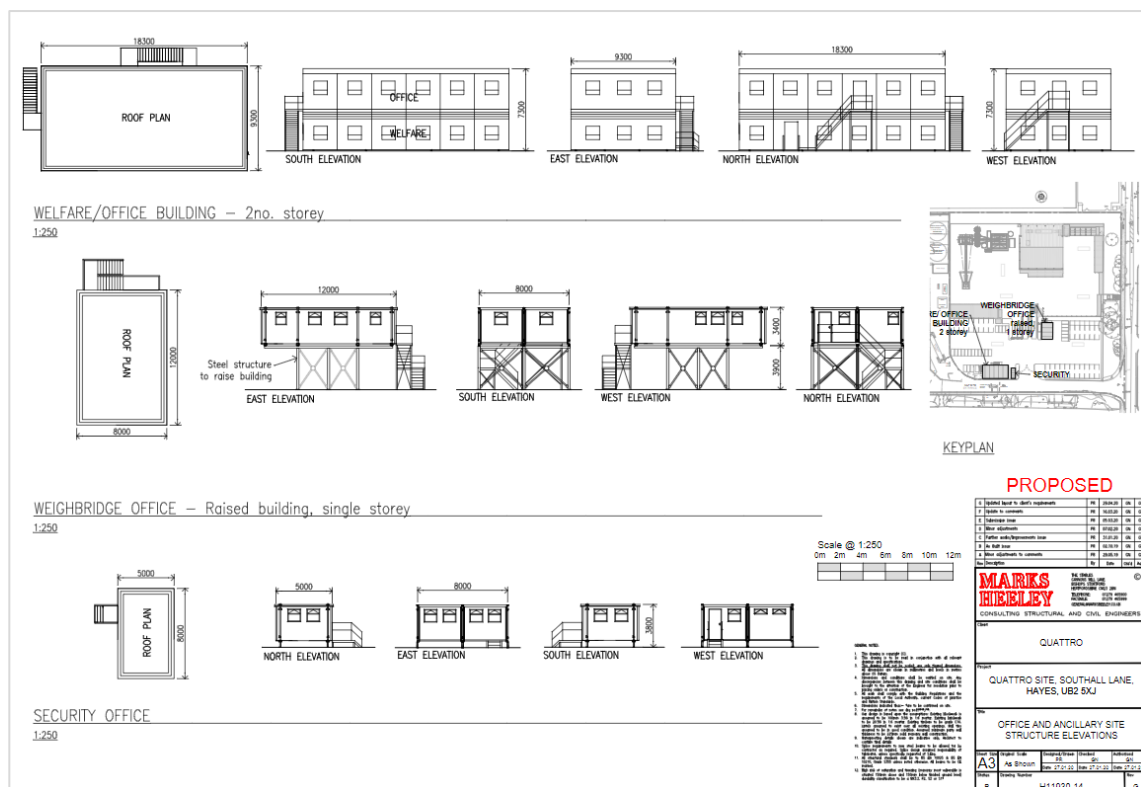


Figure 1.3 Modular Offices

2 SUSTAINABILITY POLICY CONTEXT

National Policy

2.1 The revised National Planning Policy Framework (NPPF) was published on 24th July 2018 and updated in February 2019. It sets the framework for all planning policy in England and how these are expected to be applied. The NPPF establishes a presumption in favour of sustainable development, and the need to support economic growth through the planning system.

- Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives: An economic role – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- A social role – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- An environmental role – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

2.2 Planning plays a key role in helping shape places to radical reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change, and supporting the delivery of renewable and low carbon energy and associated infrastructure. This is central to the economic, social and environmental dimensions of sustainable development. The NPPF does not include detailed measures on sustainable design codes and standards to apply, although expects that when setting any local requirement for a building's sustainability, local planning authorities should do so in a way consistent with the national technical standards.

London Plan 2016

2.3 The London Plan (2016) sets out the Mayor's vision for London. In accordance with the NPPF, it promotes economic development, and endorses the principles of sustainable development. It is the main vehicle for strategic decision-making on London's development, including development decisions. The current London Plan was adopted in March 2016. It contains several policies directly related to a development's sustainable design, below lists the policies considered against this development:

- Policy 5.1 – Climate Change Mitigation.

- Policy 5.3 Sustainable design and construction.
- Policy 5.7 Renewable energy.
- Policy 5.10 – Urban Greening.
- Policy 5.12 – Flood Risk Management.
- Policy 5.13 – Sustainable Drainage.
- Policy 5.15 Water use and supplies, and
- Policy 5.20 – Aggregates.

Draft New London Plan – Intend to Publish

- 2.4 The Mayor of London is currently consulting on a Draft New London Plan (NLP), which is expected to be published this year. The NLP has consolidated energy & sustainability policies held within the existing London Plan into a new ‘Chapter 9 – Sustainable Infrastructure’ with a suite of new policy requirements surrounding energy & sustainability.
- 2.5 On 13th March 2020, the Secretary of State wrote to the Mayor setting out his consideration of the Mayor’s Intend to Publish London Plan, with no changes were proposed to the energy & sustainability policies
- 2.6 Whilst the current 2016 London Plan is still the adopted Development Plan, the Draft London Plan may be a material consideration in planning decisions. The significance given to it is a matter for the decision maker, but it gains more weight as it moves through the process to adoption.
- 2.7 In general the changes to sustainability policy emerging through the Draft New London Plan are supportive of the proposals, recognising the ongoing importance that construction and demolition waste recycling facilities have within London, and supporting principles for energy efficient development that promotes water conservation.

London Plan Supplementary Planning Guidance: Sustainable Design and Construction

- 2.8 The Mayor of London Published its Sustainable Design and Construction SPG in April 2014. The SPG provides guidance on the implementation of London Plan policy 5.3 - Sustainable Design and Construction, as well as a range of policies, primarily in Chapters 5 and 7 of the London Plan which address matters relating to environmental sustainability. As an SPG, the document does not set new policy, but explains how policies in the London Plan should be carried through into action. It will be a material planning consideration when determining planning applications. The SPG includes the Mayor’s priorities, as well as best practices that should be followed.

Local Policy

- 2.9 The most relevant policies which need to be considered when assessing the scheme’s compliance to sustainability policy are those provided within local development documents. The adopted

Local Plan 2015-2030 forms part of the development plan for the London Borough of Hounslow and provides the planning framework for the Borough until 2030. The adopted Local contains several policies relating directly to a development's sustainable design, including:

- Policy EQ1 – Energy & Carbon Reduction.
- Policy EQ2 – Sustainable Design & Construction.
- Policy EQ3 – Flood Risk & Surface Water Management.
- Policy EQ4 – Air Quality.
- Policy EQ5 – Noise.
- Policy EQ6 – Lighting.
- Policy EQ7 – Sustainable Waste Management.
- Policy EQ8 – Contamination.
- Policy EQ9 – Hazardous Substances.
- Policy EQ10 – Minerals.
- Policy EC2 – Developing a Sustainable Local Transport Network; and
- Policy GB7 – Biodiversity.

2.10 Policy EQ 2 relates to sustainable design and construction. This requires development to:

- (a) Promoting sustainable design and construction, consistent with the principles established in the London Plan.*
- (b) Using national standards for sustainable design and construction to assess environmental credentials of developments, and requiring schemes to meet specified levels as minimum; and*
- (c) Encouraging the take-up of opportunities to improve the resource efficiency of existing homes and buildings through refurbishment to retrofitting, including through working with partner agencies such as Historic England to secure improvements in heritage assets.*
- (d) Incorporate established principles for sustainable design and construction as set out in the London Plan, including passive solar design, water efficiency standards, sustainable drainage, the reuse and recycling of construction materials, green roofs and urban greening.*
- (e) Be assessed against the standards for sustainable design and construction set out in Table EQ2.1 and submit relevant documentation to demonstrate that minimum specified levels are met or meet any national standards that subsequently supersede these; and*
- (f) Prepare a sustainability statement, where major developments are proposed.*

2.11 The nature of the proposed development means none of the structures (aggregate storage bays, concrete batching plant, waste recycling plant, recycle bays, and modular temporary buildings

etc.) are able to be assessed against the standards set out in table EQ2.1, which relates to BREEAM. This is consistent with the previous planning application.

Quattro's Approach to Sustainability

2.12 Quattro (UK) Ltd recognises the importance of addressing the environmental challenges by preserving the present and creating a sustainable future. Quattro operate a sustainable policy which they follow to help minimise the impact of their operations on the environment. Below lists a few of the measures within the company policy:

- Reduce environmental impact wherever possible, using best practice methods and standards.
- Reduce, reuse and recycle wherever practicable.
- Source recycled materials or other materials from sustainable sources.
- Seek to reduce carbon emissions, water consumption and energy use across our operations and those within supply chains and partnerships.
- Achieve and maintain high levels of sustainable working that enhance our reputation and those of our customers and stakeholders.
- Consider any environmental issues in the decision-making process.
- Promote waste minimisation by recycling or finding other uses for by-products.
- Educating staff so that they carry out their activities in an environmentally responsible manner.

3 SUSTAINABILITY REVIEW

Overview and Approach

- 3.1 This section includes a review of the scheme against the relevant policies in section 2 and identifies a series of practical measures that would be brought forward in design and construction which contribute to the developments' sustainability.
- 3.2 As previously established, the nature of the proposed development means none of the structures (aggregate bays, concrete batching plant, waste recycling plant, recycle bays, and modular offices etc.) are able to be assessed against BREEAM. Whilst BREEAM is not to be taken forward, the sustainability review demonstrates where practical measures recognised by BREEAM can be accommodated.
- 3.3 The review is structured against the following thematic areas, which align with those previously presented in 2016 within the sustainability statement submitted in support of application 01032/E/P44.
- Land Use.
 - Energy and Emissions.
 - Water Conservation.
 - Materials and Waste.
 - Sustainable Transport; and
 - Pollution Control,

Land Use

- 3.4 As outlined in the paragraph 2.1.1 of the Mayor's SPG on Sustainable Design and Construction, "London is a growing city with a limited supply of land for economic, residential, recreational and natural land uses". Therefore, it is essential that developments make the most of the opportunities provided by their site, based on its specific circumstances.
- 3.5 The proposed land take of the development has been consolidated and reduced from the previous planning application, which supports this important principle. The site is already in use for the production of concrete and waste recycling and is considered compatible with surrounding land uses.
- 3.6 It is also relevant that the application seeks planning permission on a temporary basis only. It will extend Quattro's occupation of the site until 21 December 2027 and will allow for a productive employment generating use to be established on the site currently not required for its allocated apportioned waste use.
- 3.7 The waste recycling operation comprises a highly sustainable form of development as does the supply of recycled material to the concrete batching plant in lieu of virgin material.

Energy and Emissions

- 3.8 The London Plan sets out an established energy hierarchy in Policy 5.2 which is relevant to new build and refurbished projects. This focuses on how new and existing development can reduce regulated energy demands. The proposed development is for predominantly industrial development, where most of the energy consumed on site will be unregulated by Building Regulations.
- 3.9 The proposed development includes the re-use of portacabins. The use of a recycled pre-owned modular buildings is one of the most sustainable methods of construction, as the unique characteristics possessed by pre-owned modular buildings are that the embodied energy required to manufacture them is transportable; helping to reduce carbon emissions and the carbon footprint of the building.
- 3.10 According to Portacabin who manufactured the cabins, the embodied energy of modular buildings is locked into their fabric and with pre-owned modular buildings, the embodied energy can be relocated along with the modules to another site. Where a pre-owned modular building is relocated with minimal alteration, the amount of energy used is less than 3% of the energy that would be required to manufacture an equivalent new building.
- 3.11 The relocation and re-assembly of modular buildings does however need to meet tests within Part L, which is adjusted depending on the year of manufacture. Envision has undertaken an SBEM energy assessment of the modular office building to demonstrate the savings which may be achieved through making retrospective upgrades in the lighting and through the introduction of PV on the roof of the cabins. It is calculated that the proposals will lead to a 37.72 % reduction in carbon emissions associated with regulated energy.

Water Conservation

- 3.12 The GLA has adopted its SPG on Sustainable Design and Construction which includes priorities for water efficiency. The London Plan states that non-residential development should aim to achieve maximum credits under BREEAM, or the best practice guidance level of the Association of Environment Conscious Building (AECB).
- 3.13 Similar to energy consumption, most of the water used on site relates to the industrial processes associated with concrete batching and not the regulated water within the staff accommodation. Policies for water consumption are not directly applicable to the site. Notwithstanding this, water conservation will be a priority at the site. Water is used as a constituent of concrete production (mixing water) as well as for the washing down of silos, machinery and vehicles. It is also used for dust supersession.
- 3.14 Quattro are currently recycling 70% of water, using it back into the concrete plant as grey water for adding to the concrete mix. The water is collected either from the slurry pits and or the concrete lorry drain out area, filtered on site and reused as greywater for appropriate uses, including for re-use in concrete batching. All surface water runoff from within the site would also be stored for re-use.

- 3.15 The site will be fully water metered and will include water sub metering for the different aspects of the site, including a separate sub meter for the office and welfare block.
- 3.16 With regards to regulated uses, the existing WCs in the office and amenity block are generally in good condition, using dual flush WCs.

Materials and Waste

- 3.17 The current site has been in operation following the granting of consent in January 2018, with the concrete batching plant operational from July 2018 and the recycling plant operational since September 2019. It is relevant to note that the scheme would continue to use the apparatus and materials previously consented, many of which were taken from Quattro's former site which was subject to compulsory purchase order to facilitate the Brentford Football Club redevelopment.
- 3.18 The proposed development therefore continues to support principles of sustainable waste and material management. In addition, the proposed development facilitates the sustainable use of materials, by enabling the co-location of concrete batching with waste recycling facilities. The production and use of recycled material in lieu of virgin material is a highly sustainable form of development – assisting with the safeguarding of natural resources. Indeed, in more general terms a waste recycling facility which seeks to move waste up the waste hierarchy is again a clear sustainable form of development. This co-location not only facilitates a higher proportion of recycled content in concrete, but also reduces HGV movements that would otherwise be incurred through double handling and movement of reclaimed aggregates from elsewhere.

Sustainable Transport

- 3.19 A transport assessment has been undertaken by I Transport which considers the operational impacts from traffic and transport. The assessment builds on the conclusions drawn from the previous application, demonstrating that the site is safe and proposal as per the original proposal is acceptable in transport and highways terms.
- 3.20 From an operational perspective the site is ideally located in central London and can continue to serve the central London market. Whilst not yet approved, Quattro have also secured an option to work sand and gravel from the adjacent site to the south which comprises a 'Safeguarded Minerals Site'. A separate application is being progressed by Quattro to work that area of land. If that development proposal were to be approved, the intention would be that the mineral extracted could be directly fed to the adjoining concrete batching plant, giving rise to further significant HGV road mile and emissions savings.
- 3.21 From a staff travel perspective, the site has a relatively low accessibility level (PTAL 2), however this could be expected given the industrial nature of the site and surrounds. Notwithstanding this, public transport is available in the form of local bus and rail services.

- 3.22 With regards to enhancing sustainable transport, the proposed development will include the following:
- The scheme includes provision for 20 covered cycle spaces
 - The use of car sharing will continue to be encouraged through the adopted Travel Plan.
 - Quattro will provide showers and changing facilities in the facility as part of its Travel Planning initiatives.

Pollution Control

- 3.23 The general site surrounds accommodate a number of industrial/waste operations, however there are sensitive receptors in proximity to the site that were previously identified in the original planning application, with various controls put in place through planning conditions to protect neighbouring amenity and limit pollution.
- 3.24 The bulk of the facilities are enclosed with openings where there is an operational necessity within steel enclosures and material stock bays. Boundary treatment is already in place along the boundary with the adjoining waste facility to the west and to the north. Further boundary treatment fitted with sprinkler jets is also provided for along the eastern boundary of the site with some remaining to be built out.
- 3.25 The scheme will include dust suppression and operational controls to limit pollution in accordance with the previous planning consent. These are set out within the Air Quality Assessment (Ramboll) Dust Management Plan (Ramboll) and Operational Statement and Site Monitoring and Management Scheme, prepared by Waterman Environmental.
- 3.26 The dust management and dust monitoring plan provided with this application reflects that previously submitted to discharge Condition 18 of the original permission. The new Air Quality Assessment submitted with the application has reviewed the amended scheme and similarly to the original scheme in terms of impact on neighbouring properties has determined that the proposals are acceptable in respect to neighbouring receptors.

4 ENERGY ASSESSMENT AND STRATEGY FOR TEMPORARY BUILDINGS

Approach

- 4.1 Planning policy for new build developments is well established within the London Plan and is reflected in LB Hounslow policy. This is typically demonstrated by making improvements in energy performance below the level of a current Building Regulation compliant building. Similarly, guidance is also published for the assessment of refurbished buildings typically subject to change of uses. There is no clear energy reduction target stipulated for the relocation of modular offices. The proposal in its own right is expected to save significant embodied carbon by comparison to the construction of a new purpose build facility.
- 4.2 Policy EQ1 of Hounslow's Local Plan requires the development to meet the requirements of the London Plan for energy and carbon reductions. As these are temporary buildings, it is not considered suitable for all the requirements of the London Plan to be applied, e.g. connection to a site wide heat network, maximising installation of renewable technology on site, overheating requirements, etc. The applicable requirements are:
- Commit to reducing regulated CO₂ emissions below those of a development compliant with Part L 2013 of the Building Regulations through energy efficiency measures alone.
 - Demonstrate at least a 35% on-site reduction beyond Part L 2013 for non-residential development.

Methodology

- 4.3 In order to demonstrate an improvement in energy performance for the proposed relocated and upgraded modular office, the following methodology is proposed.
1. Calculate CO₂ emissions of notional temporary office, constructed pre-2006.
 2. Calculate CO₂ emissions of upgraded office (with proposed energy efficient measures) to demonstrate improvement.
 3. Apply this methodology to the 2 No other temporary buildings on site, security office and weighbridge office.
- 4.4 The appropriate methodology for calculating both the existing and proposed office's energy performance is through a Simplified Building Energy Model (SBEM). The SBEM was produced using DesignBuilder software version 6.1.0.006, which is a DCLG approved software and methodology for undertaking SBEM.

Compliance with Part L2a of Building Regulations

- 4.5 Building Regulations Part L does allow circumstances for the relocation and re-use of modular buildings. Under Building Regulations there are specific provisions for temporary modular buildings which are to be in use for more than 2 years. In such cases compliance with regulations can be demonstrated by meeting all of the five compliance criteria set out in the regulations. However, in instances where 70% of the external envelope of the building is created from sub-

assemblies manufactured prior to the date of the current Building Regulations, the buildings Target Emission Rate should be adjusted depending on the year of original construction. Figure 1.4 is an extract for Part L2a 2013, amended 2016 showing the adjustments which should be made.

Approved Document L2B. If a TER/BER calculation is not available for a module constructed prior to 6 April 2014, reasonable provision would be to demonstrate that the BER is not greater than the Part L 2013 TER adjusted by the relevant factor from Table 2.

Table 2 TER multiplying factor for modular and portable buildings	
Date of manufacture of 70% of modules making up the external envelope	TER multiplying factor
After 6 April 2014	1.00
1 Oct 2010 – 5 April 2014	1.10
6 April 2006 – 30 Sept 2010	1.47
1 April 2002 – 5 April 2006	1.93
Pre 1 April 2002	1.93 [2.59]
Notes:	
1. For buildings with a planned time of use in a given location of less than two years, the figure in brackets is applicable.	

Fig 4.1 Adjustments for modular and portable buildings

- 4.6 The previous energy strategy submitted for the original approval indicated a multiplier of 1.93, it is therefore assumed the offices were constructed pre 5th April 2006

Step 1 - Establishing the Target Emissions Rate (TER)

- 4.7 Scaled drawings of the office were provided by the scheme architect and were used as the basis for energy modelling and calculations.
- 4.8 Using the figures and information as determined above, the following summarises the energy demand and CO₂ emissions of the TER.

Table 4.1 – TER - Building Baseline Emissions

	Area (m ²)	TER (kg.CO ₂ .m ²)	TER Regulated Emissions (kg.CO ₂ .yr)	TER Energy Demand (kWh.yr)
Southall Modular Office	340	50.1	17,034	20,706
Security Office/Weighbridge Office	136	50.1	6,814	8,282
Total	476	50.1	23,848	28,988

- 4.9 As seen in the table above (and taken from the TER figure in the BRUKL in Appendix I), the modular office building emits **17,034 kg.CO₂.year**.

- 4.10 When this is applied to the rest of the buildings on site this equals a total target emission of **6,814 kg.CO₂.year**.
- 4.11 The measures proposed in the next section will aim to improve upon this figure in order to demonstrate how the upgraded office will reduce CO₂ emissions.

Step 2 - Proposed Energy Enhancement Measures

- 4.12 To improve the energy performance and reduce CO₂ emissions of the relocated office, the following energy enhancement measures are proposed.
- Air Permeability Rate of 3.5m³/ (h.m²) – this will require an APR test to be undertaken after installation. 3.22m³/ (h.m²) was achieved in the building before it was moved so this is deemed feasible.
 - High efficiency LED lamps with an efficacy of 100 luminaire lumens/cw.
 - PIR occupancy sensors in WCs, offices and meeting rooms.
 - LED external lighting controlled via time clock and photo sensor.
 - Foremans standard Daikin FUQ125 in offices and meeting rooms – the remaining areas using electric heaters.
- 4.13 Following the application of the above energy enhancement measures, the following CO₂ emission reductions can be expected in the relocated office.

Table 4.2 – Upgraded Office Emissions

	Area (m ²)	TER (kg.CO ₂ .m ²)	TER Regulated Emissions (kg.CO ₂ .yr)	TER Energy Demand (kWh.yr)
Southall Modular Office	340	31.2	10,608	20,437
Security Office/Weighbridge Office	136	31.2	4,243	8,175
Total	476	31.2	14,851	28,612
Difference over TER	n/a	n/a	8,997	376
% Difference	n/a	n/a	37.72%	1.3%

- 4.14 As seen in the table above (and taken from the BER figure in the BRUKL in Appendix II), the upgraded buildings are expected to reduce CO₂ emissions by 37.72% over the notional building baseline. This significant reduction in CO₂ emissions is in line with GLA guidance for reducing CO₂ emissions in non-domestic developments. As such it is expected that no further upgrades are required to meet Hounslow planning policy.

5 CONCLUSION

- 5.1 This Sustainability Statement has been prepared by Envision on behalf of Quattro UK Ltd (The Applicant) and is submitted to support a full planning application for the 'Erection of construction and demolition waste recycling facility, concrete batching plant and associated weighbridge, weighbridge office, site office and welfare facilities, storage bays, substation, car and HGV parking and other ancillary structures, and use of land for fleet parking (works applied for retrospectively). Consent sought for temporary period ending 21 December 2027'.
- 5.2 That previous planning application for the site was granted consent with a Sustainability Statement and Energy assessment, with further energy details in respect of the approved modular office building submitted in respect of Condition 17. This Sustainability Statement confirms that the new planning application would continue to be in accordance with relevant sustainability policies and principles set out previously.
- 5.3 The proposals will ensure that:
- Secure and sheltered cycle parking will be provided for 20 staff and visitors.
 - The ongoing utilisation of staff travel planning initiatives, secured by previous S106 agreements, including the provision of a showers for staff welfare facilities.
 - The modular offices recovered and refurbished from existing offices on site will help to minimise embodied energy otherwise associated with new construction. These will be re-assembled to a similarly high level of air tightness.
 - The buildings will be fitted with high efficiency LED lamps with an efficacy of 100 luminaire lumens/cw in all buildings.
 - PIR occupancy sensors will be installed in WCs, offices and meeting rooms.
 - LED external lighting controlled via time clock and photo sensor.
- 5.4 The above measures are considered to demonstrate full alignment with sustainability policy in LB Hounslow and relevant policies of the London Plan (2016) and reflect the principles previously consented.

APPENDIX 1 – SBEM ENERGY ASSESSMENT

Project name

Modular and Portable

2 Storey Modular Office Block

As designed

Date: Tue May 12 09:01:11 2020

Administrative information**Building Details**

Address: Southall Lane, London, UB2 5XJ

Owner Details

Name:

Telephone number:

Address: , ,

Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.a.1

Interface to calculation engine: DesignBuilder SBEM

Interface to calculation engine version: v6.1.0

BRUKL compliance check version: v5.6.a.1

Certifier details

Name: Ciaran Dorrity

Telephone number: 01908 0628419

Address: Unit 2 Lodge Farm Business Centre, Milton Keynes, MK19 7ES

Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	26
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	50.1
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	31.2
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission
TER adjustment factor for modular and portable buildings	1.93

Criterion 2: The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

The U-values are expected to be checked by the Building Control Body against the limiting standards which are appropriate for the modules' date of manufacture. No automatic checking is performed by the tool in this case.

Building fabric

Element	U _a -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.31	0.31	Ground Floor - Kitchenette_W_6
Floor	0.25	0.28	0.28	Ground Floor - Kitchenette_F_3
Roof	0.25	0.36	0.36	First Floor - Open Plan 2_R_4
Windows***, roof windows, and rooflights	2.2	1.6	1.6	Ground Floor - Kitchenette_G_7
Personnel doors	2.2	1.8	1.8	Ground Floor - Circulation_D_11
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"

U_a-Limit = Limiting area-weighted average U-values [W/(m²K)]U_a-Calc = Calculated area-weighted average U-values [W/(m²K)]U_i-Calc = Calculated maximum individual element U-values [W/(m²K)]

* There might be more than one surface where the maximum U-value occurs.

** 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.

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

Air Permeability	This building
m ³ /(h.m ²) at 50 Pa	3.5

Building services

The building services parameters listed below are expected to be checked by the Building Control Body against standards appropriate for the modules' date of manufacture. No automatic checking is performed by the tool in this case.

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- DAIKIN FUQ125

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
4.01	5.11	-	-
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			NO

2- Electric Heating

Heating seasonal efficiency	Cooling nominal efficiency	SFP [W/(l/s)]	HR seasonal efficiency
1	-	-	-
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system			NO

1- Project DHW

Heating seasonal efficiency	Hot water storage loss factor [kWh/litre per day]
1	-

Local mechanical ventilation and exhaust

Zone	Supply/extract SFP [W/(l/s)]	HR seasonal efficiency	Exhaust SFP [W/(l/s)]
Ground Floor - AWC	-	-	0.3
Ground Floor - Male WC	-	-	0.3
First Floor - Shower	-	-	0.3
First Floor - Female WC	-	-	0.3
First Floor - Male WC	-	-	0.3

General lighting and display lighting

Zone	General lighting [W]	Display lamps efficacy [lm/W]
Ground Floor - Kitchenette	40	-
Ground Floor - Open Plan	610	-
Ground Floor - Circulation	40	-
Ground Floor - Stair	20	-
First Floor - Open Plan 2	540	-
First Floor - Stairs	20	-
First Floor - Lockers	10	-
First Floor - Meeting Room 2	90	-
First Floor - Meeting Room	90	-
First Floor - Server	20	-
First Floor - Kitchenette	30	-
Ground Floor - AWC	30	-
Ground Floor - Male WC	50	-
First Floor - Shower	10	-
First Floor - Female WC	50	-
First Floor - Male WC	30	-

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Ground Floor - Kitchenette	NO (-66.8%)	NO
Ground Floor - Open Plan	NO (-64.7%)	NO
Ground Floor - Circulation	NO (-77.7%)	NO
Ground Floor - Stair	NO (-36.9%)	NO
First Floor - Open Plan 2	NO (-71.6%)	NO
First Floor - Stairs	NO (-79.7%)	NO
First Floor - Lockers	NO (-65.7%)	NO
First Floor - Meeting Room 2	NO (-58.5%)	NO
First Floor - Meeting Room	NO (-55.8%)	NO
First Floor - Server	NO (-62.4%)	NO
First Floor - Kitchenette	NO (-73.8%)	NO

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of 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
Area [m ²]	318.6	318.6
External area [m ²]	656.4	656.4
Weather	LON	LON
Infiltration [m ³ /hm ² @ 50Pa]	4	3
Average conductance [W/K]	280.56	319.2
Average U-value [W/m ² K]	0.43	0.49
Alpha value* [%]	17.32	15.82

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

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
97	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger terminals
	Others: Emergency services
3	Others: Miscellaneous 24hr activities
	Others: Car Parks 24 hrs
	Others: Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	10.91	14.73
Cooling	14.63	10.17
Auxiliary	0.73	0.85
Lighting	15.77	14.25
Hot water	18.07	20.9
Equipment*	45.45	45.45
TOTAL**	60.11	60.9

* 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

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	244.21	247.38
Primary energy* [kWh/m ²]	184.55	133.16
Total emissions [kg/m ²]	31.2	50.1

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

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] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity									
Actual	92.3	153.8	6.9	16.6	0	3.74	2.58	4.01	3.63
Notional	96	149.4	11	11.5	0	2.43	3.6	----	----
[ST] Other local room heater - fanned, [HS] Room heater, [HFT] Electricity, [CFT] Natural Gas									
Actual	118.9	111	41.3	0	6.2	0.8	0	1	0
Notional	126.5	136.1	42.9	0	7.2	0.82	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

Key Features

The Building Control Body is advised to give particular attention to items whose specifications are better than typically expected.

Building fabric

Element	U _{i-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.31	Ground Floor - Kitchenette_W_6
Floor	0.2	0.28	Ground Floor - Kitchenette_F_3
Roof	0.15	0.36	First Floor - Open Plan 2_R_4
Windows, roof windows, and rooflights	1.5	1.6	Ground Floor - Kitchenette_G_7
Personnel doors	1.5	1.8	Ground Floor - Circulation_D_11
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"
U _{i-Typ} = Typical individual element U-values [W/(m²K)] U _{i-Min} = Minimum individual element U-values [W/(m²K)] * There might be more than one surface where the minimum U-value occurs.			

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	3.5

APPENDIX 2 – DRAFT EPC

Energy Performance Certificate

Non-Domestic Building



Southall Lane
London
UB2 5XJ

Certificate Reference Number:
0099-0034-8328-7962-5110

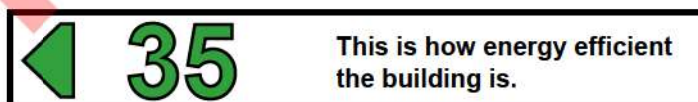
This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient



Net zero CO₂ emissions



Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Air Conditioning
Total useful floor area (m ²):	318.6
Building complexity (NOS level):	3
Building emission rate (kgCO ₂ /m ² per year):	31.2
Primary energy use (kWh/m ² per year):	184.55

Benchmarks

Buildings similar to this one could have ratings as follows:

30 If newly built

87 If typical of the existing stock

Administrative information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software: DesignBuilder SBEM v6.1.0 using calculation engine SBEM v5.6.a.1

Property Reference: 012345678912

Assessor Name: Ciaran Dorrity

Assessor Number: ABCD123456

Accreditation Scheme: Information not available

Employer/Trading Name: Envision Energy Ltd

Employer/Trading Address: MK19 7ES

Issue Date: 12 May 2020

Valid Until: 11 May 2030 (unless superseded by a later certificate)

Related Party Disclosure: Indirect relation to the owner (e.g. relative employed/contracted by owner)

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report: 0071-4969-8382-1502-9401

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by Information not available. You can obtain contact details of the Accreditation Scheme at Information not available.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. For further information about how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document and advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property - whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.