

This section of the report describes the development proposals.





Bird's eye artists impression of the proposal looking south

Summary of proposals

It is proposed to create four new buildings labelled from A to D1/2 on the bird's eye artists impression of the proposal above.

Accommodation:

- 8 x 1B2P Flats
- 16 x 2B4P Flats
- 15 x 3B5P Flats
- 6 x 3B5P Maisonnettes
- Total 45 new homes

4 no. of the 45 homes will be fully accessible wheel chair homes designed to Building Regulations Part M4.3 standard. Site area within red line 9991 m2 and within blue line 4663 making a total site area of: 14,644 m²

Proposals meet the national and GLA space standards for new accommodation. Refuse/recycling storage provision meets waste space and capacity requirements.

Landscape and amenity:

Extensive public realm and landscape improvements to the wider Turner Avenue Estate are proposed as part of

the scheme. These include rationalising existing parking areas to create a more pedestrian focused environment and additional green space. New and improved children's play areas, buffer planting to ground floor homes and additional tree planting. New shared private gardens are proposed.

Sustainability:

The proposal has adopted a fabric first approach with efficiently designed building envelopes and improved u-values and a high air tightness. Renewable technologies including PVs and air source heat pumps are proposed. The scheme is designed to be net zero carbon in use.

Secured by Design:

The design proposals follow Secured by Design principles and we are seeking Gold standard accreditation.

Parking:

Reconfiguration of 29 existing parking spaces on the Turner Avenue estate with 29 (including 3 wheelchair accessible). Replacement of 6 existing parking spaces on Braemar Road with 1 wheelchair accessible parking bays.



Bird's eye artists impression of the proposal looking north



Indicative landscape plan - Image by Oobe

Landscape

Landscape design proposals for the scheme have been prepared by Oobe landscape architects.

The vision for the landscape design by at Brunel Walk and wider Turner Avenue Estate is for a sustainable and multi-functional landscape which is sensitively integrated into the context, providing a high quality environment for both existing and future residents with a strong sense of place.

There are three key objectives:

- Environmental improvements focussing on climate positive design, sustainable water management and biodiversity net gain.
- Enhance the sense of place by accentuating the site's existing qualities and strengthening the relationship between the site and the end users.
- Amenity provision for existing and proposed residents within a defined network of green and blue infrastructure.

An assessment of the current public realm and landscape has identified a number of current issues including:

- Narrow enclosed and intimidating pedestrian route along Brunel Walk
- Courtyards dominated by vehicle access and parking.
- Entrances to existing communal blocks are run down, hidden and not welcoming
- Existing amenity and play areas are run down, not maintained and consequently not used
- Existing bin stores create additional segregation to space creating 'hidden corners' which encourage antisocial behaviour
- Existing block private gardens have a variety of fences/ boundary
- Treatment in varying conditions making the courtyards feel cluttered
- The western end has an open green space with poor surveillance.
- The estate however benefits from large areas of green space and mature trees.

The new building layout offers an arrangement for natural surveillance to the semi-private courtyards and paths within the estate. The layout also acts as a divider to create private gardens in between buildings with seating and play elements.

Key landscape improvement proposals include:

1. Introduce a primary well-lit pedestrian link from West Green Road and hierarchy of additional routes though the courtyards.
2. Buffer planting and additional street trees along West Green Road.
3. Rationalise existing parking layouts and create pedestrian focused environment to courtyards formed between buildings.
4. Remove blind corners by relocating bin stores and add focal features (such as trees) to guide you to the next space.
5. Additional tree planting throughout site.
6. Improve play elements and introduce play on the way strategy.
7. Add buffer planting to existing ground floor homes to give privacy from streets.
8. Introduce fencing on top of existing garden walls to give unified palette of boundary treatment.
9. Introduce communal garden spaces with additional play and amenity elements such as seating areas.
10. Reactivate the forgotten green space and raise tree crowns to encourage social interaction between the residents and provide a sense of community within the estate.
11. Replace unattractive concrete boundary panels to the southern boundary with a suitable fence and to add additional trees and planting to screen the boundary.
12. Extend garden on Braemar Road.

For further details of the proposed landscape designs please refer to the design and access statement by Oobe.

The proposed landscape master plan follows on the next page.



Landscape master plan - Image by Oobe

Landscape strategy - Play space

Play Space

Enhanced and additional play space is proposed within the scheme.

There is 266 m2 of existing play area within the estate and oobe have calculated using the play space calculator that for the new development to provide 10m2 per child an additional 473.9 m2 is required. As the existing play space is dilapidated and under used and as there are facilities for children over 12 in Brunswick Road Open Space within 800m of the site the proposals show a total of 551 m2 divided into 0-4 year old, 5-11 and 0-12+ spaces.

These spaces are located in areas with good passive surveillance with spaces for the younger age groups within private communal gardens.



- 0-4 year informal play equipment
Area provided: 138m²
- 5-11 year informal play equipment
Area provided: 98m²
- 0-12+ year informal play equipment
existing play area to be replaced
Area provided: 315m²

Play space plan - Image by Oobe

Landscape strategy - Trees, Urban greening, Ecology and biodiversity

Trees

The tree survey picked up 48 individual trees and 9 groups. However, we understand that 4 trees and one group have been removed by third parties since. There is therefore a total of 86 trees which exist on site now made up of 44 individual trees plus 8 groups of trees (comprising 42 trees).

For health and safety, cultural or quality of life reasons 4 no. trees are to be recommended to be removed irrespective of the proposals.
To permit the proposed development 12 individual and 1 group of trees (comprising 5 trees) are to be removed. Of these 17 trees there are only 3 category C trees for removal. Trees classed as category B are of moderate quality and estimated to have a remaining life of 20 years

removal. These trees are on the southern boundary and will be replaced by additional tree planting. The rest are C category trees of low-quality category C or U category which are in such poor condition that they could not realistically be retained for more than 10 years.

A total of 65 trees will be retained on site made up of 28 individual trees and 7 groups (which comprise 37 trees).

A total of 68 additional new semi-mature trees are proposed as part of the scheme. Therefore, there will be a net increase of 47 trees on the site.

For further details please refer to the Arboricultural Impact Assessment prepared by Hayden's Arboricultural Consultants Limited.

Urban Greening

The London Plan sets out policies to see that new development will result in an increase in green cover across the city. As a fundamental element of the design Oobe have developed landscape proposals with the aim of increasing the quantity and quality of green space within the Turner Avenue estate. Various types of planting including new standard trees, amenity grassland, extensive green roofs, flower rich perennial planting, rain gardens, hedges and permeable paving have been included in the proposals.

To quantify this and urban greening factor (UGF) has been calculated which broadly measures different types of green area as a proportion of the site. For developments that are predominantly residential a target UGF score of 0.4 is set. For the proposals on this site Oobe have calculated the UGF to be 0.65 which exceeds the target.

For further details of the UGF please refer to the Landscape DAS prepared by Oobe.

Ecology and Biodiversity

An ecological impact assessment has been carried out by EPR following their initial ecological survey which concluded that the main feature relating to the site was bat assemblage at a local level. It concludes that the proposals will have no significant residual effect and recommends a sensitive lighting strategy to avoid negative effects on bat foraging and commuting behaviour.

The landscape proposals have been developed by Oobe to include extensive green roof, new hedgerows, shrubs, grass land, and new trees. An assessment of the biodiversity net gain (BNG) of the proposals has been carried out by EPR, BNG is defined as "development that leaves biodiversity in a better state than before.

The calculation has indicated that the proposals will deliver a biodiversity net gain of 23.3%, significantly higher than the 10% requirement referenced in the Environment Act 2021.

In addition, bird and bat boxes and bee bricks on new buildings. Hedgehog houses will also be installed within the gardens.

For further details please refer to the Biodiversity Net Gain calculation by EPR.



Urban greening plan - Image by Oobe

Access and designation of amenity space and shared gardens



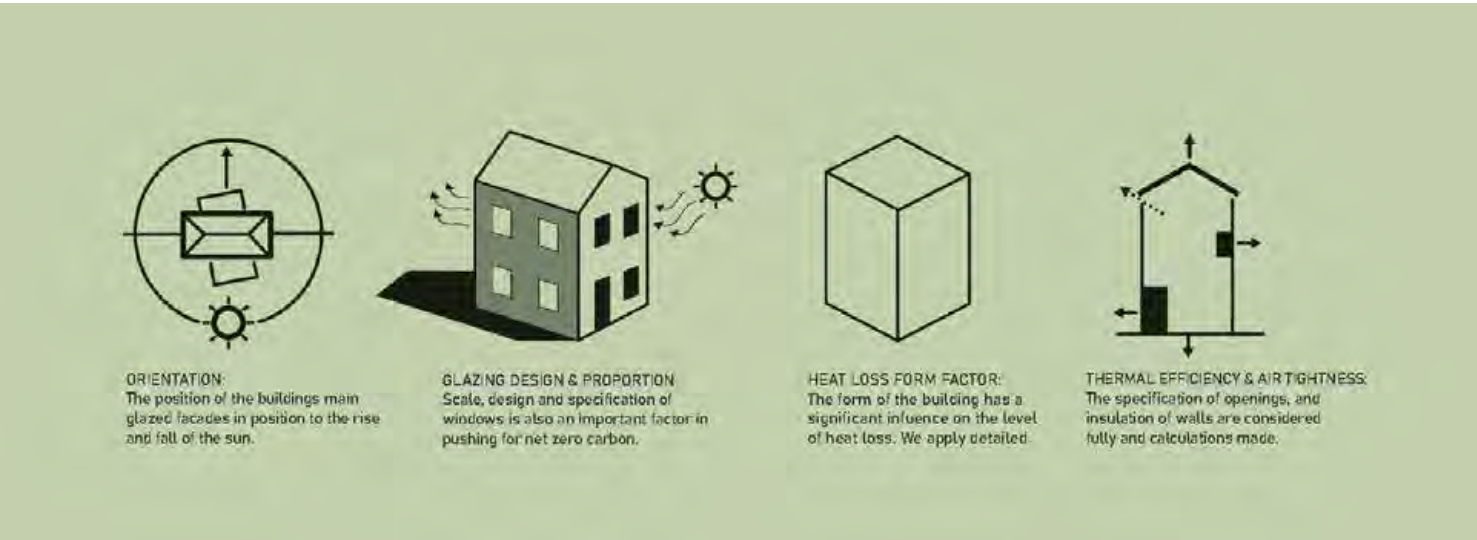
Proposed ground floor plan
1:500 approx at A3

- Key:
- Site boundary
 - Existing surrounding buildings
 - Low fence (1.2m)
 - High fence (1.8m)
 - Gate
 - Proposed defensive planting

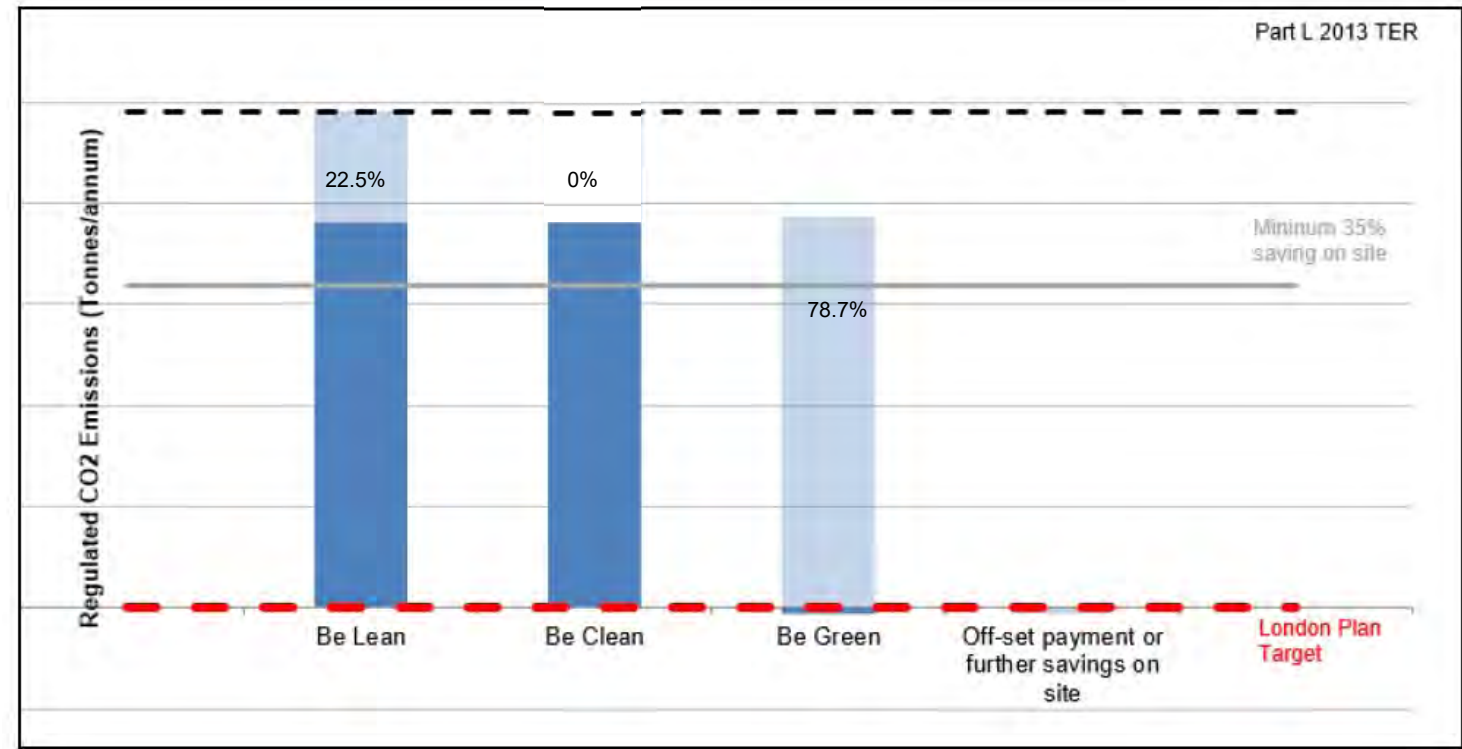
- Building entrance
- Dwelling numbers on Turner Avenue
- Proposed controlled access point
- Proposed maintenance access
- Proposed residents garden access
- Easement access
- Garden entrances

Outdoor Space

This diagram shows how each part of the outdoor space will be used. Landscaped public realm is freely accessible by all. The communal amenity spaces within the estate courtyards are intended for the use of residents of the estate but are publicly accessible. The shared garden to the east of 53-83 is for use of all residents of the estate and has controlled access. Each of the proposed new buildings also has new shared garden with controlled access for the use by the residents of the building. There are also private gardens for the new ground floor apartments.



Orientation, glazing design, heat loss form factor, thermal efficiency and air tightness



- Key:
- Regulated C02 Emissions saved at each stage: Be Lean, Be clean and Be Green
 - Regulated C02 Emissions remaining after each stage: Be Lean, Be clean and Be Green has been applied

Domestic energy Hierarchy and Targets (SAP Emission Factors) by Meinhardt



Energy - Net zero carbon.

The proposals have set a target of achieving net zero operational carbon.

Taking a fabric first approach in line with Passivhouse principles the design proposals have been developed in order to optimise the orientation, glazing proportion and distribution and the form factor of each of the buildings to minimise heat loss and maximise passive heat gain.

The form of the buildings had been simplified in order to have less surface area for the same floor space and so reduce heat loss. The size, orientation and position of the windows proposed balances the need to maximise natural daylight within rooms and take advantage of beneficial solar heating in the winter against the need to minimize the potential for overheating in the summer.

We have bench marked the proposals against the LETI recommendations on heat loss form factor and distribution and percentages of glazing in each elevation. The form factors calculated for the buildings range from 2.15 (appropriate for small scale housing) to 1.5 (appropriate for larger scale housing at 4 stories or more).

Window areas as a percentage of wall area compare favourably with those recommended ranging from 13-14% north, 11-21% east (building D faces east) 11-18% west and 20- 27% south. The suggested ranges are of 10-20% north, 10-15% east, 10-15% west and 20- 25% south.

In addition, the U values and air tightness specified for the building envelope have been maximised within the constraints of the development. The building construction will be detailed to provide continuity of insulation in order to prevent heat loss through cold bridging. All these factors have been carefully balanced and optimised within the particular constraints relevant to this site.

The diagrams on this page illustrate these key passive design principles.

To supplement the fabric first approach energy from space heating will be recycled using efficient mechanical ventilation with heat recovery (MVHR) and waste water heat recovery systems within each apartment.

The energy demand reductions (Be Lean) from the fabric first approach delivers a carbon dioxide saving of 22.5% which exceeds the target of 10% saving set out in the London Plan. In reviewing clean and green energy strategies we have worked with the sustainability, energy and MEP consultants to review options for low carbon technologies.

The option of providing connection any potential future district heating network has been thoroughly investigated. Further details of this investigation are contained in the sustainability statement by Meinhardt. Unfortunately, inclusion of a centralised system and the infrastructure required to connect to a potential future district heating network is not viable for this small to medium sized housing scheme.

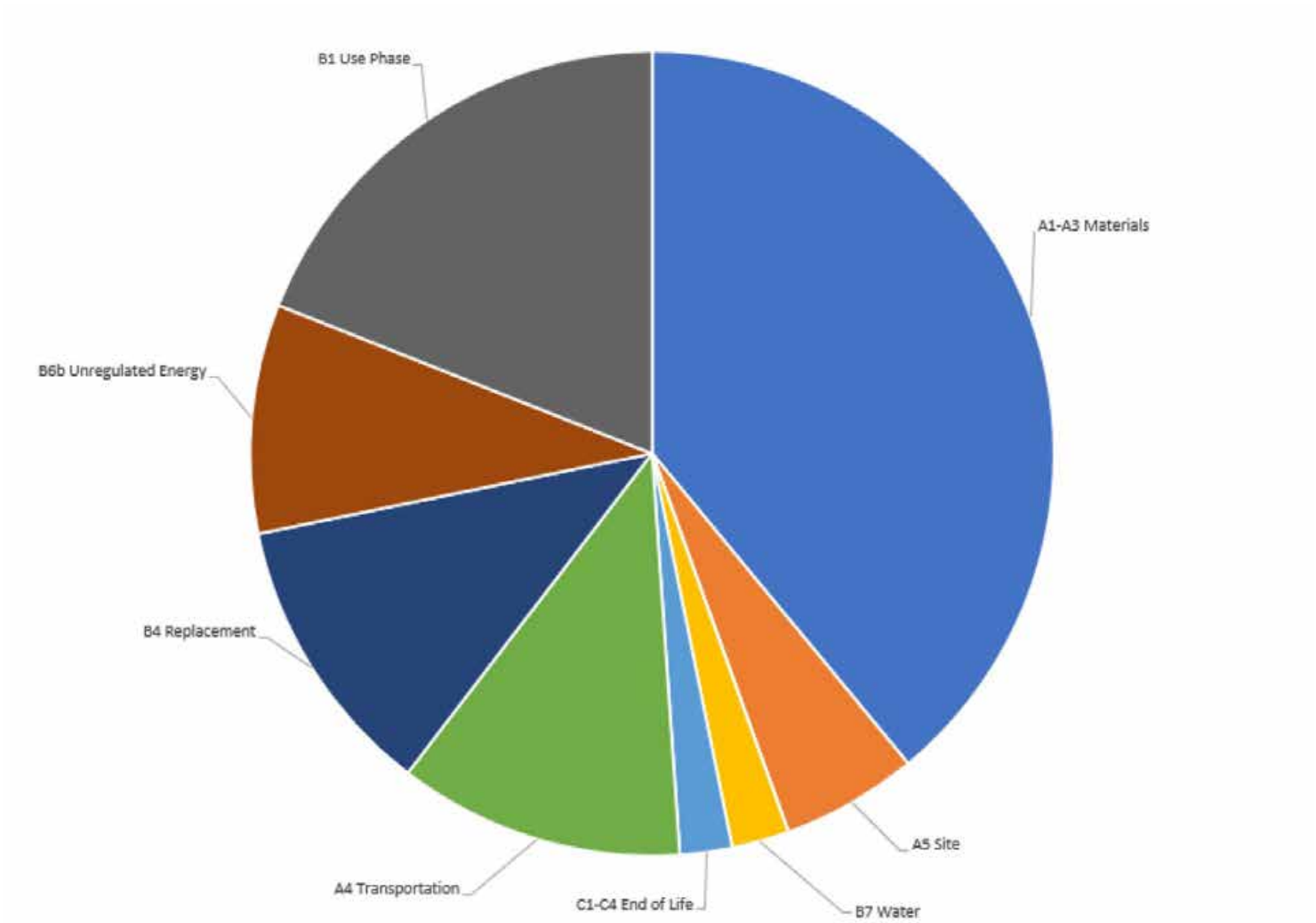
Green energy strategies have been to reviewed to provide options for low carbon technologies. Efficient Mechanical Ventilation with Heat Recovery is proposed to compliment the fabric first proposals and duct lengths to external walls have been minimised. Options such as ground source heat pumps were assessed against the energy demands of the scheme and viability. Air-to-water and water-to-water heat pumps are proposed in an ambient loop system to meet the schemes hot water and space heating demands. Communal air source heart pumps provide an ambient communal water loop provides the benefit of a communal system whilst minimizing heat losses. These will be supplemented with Photo Voltaic panels as a more effective use of roof space than solar hot water.

It is expected that residential apartments will be provided with an individual, programmable, zoned, control system, together with smart energy meters. This will allow the display of energy use within individual units, assisting occupants to understand the way in which they consume energy and how much it costs, and encouraging them to turn off non-essential equipment or run some equipment at a lower capacity during times of peak demand.

The heat pumps and PVs (Be Green) are expected to provide a further 78.7% improvement over Part L 2013 following the passive design/energy efficiency measures.

Overall, these green technologies will help contribute to an overall on-site reduction of 101.2% in regulated carbon dioxide emissions over Part L 2013.

Further details are contained in the Energy Assessment by Meinhardt.



Breakdown of Carbon Emissions by Life cycle Stage by Meinhardt

Whole life carbon.

A Whole Life Carbon Assessment (WLCA) has been carried out by Meinhardt to demonstrate the embodied and operational carbon emissions for the proposed development. The aim of this assessment is to model the whole life carbon impact of the proposed design in accordance with RICS Guidance and GLA Sustainability Guidance, using SAP and OneClick LCA software.

The assessment has considered embodied and regulated operational energy use of the proposed development, commencing from a “cleared flat site” in accordance with RICS guidelines.

The overall results show that the Proposed Development will have an emission of 3,824,739 tonnes CO2e. The results of the assessment have been compared to the WLC benchmarks specified in the GLA guidance for apartments as this is deemed the most suitable building type to be used for comparison.

The results in the Table below show that the carbon emissions associated with modules A1-A5 and modules B-C are below the WLC benchmark specified in the GLA guidance.

Further details are contained in the Sustainability Strategy by Meinhardt.

Overheating.

The proposed building also takes into account overheating, access to good levels of daylight and sunlight within homes, natural ventilation and security.

The design proposals follow the cooling hierarchy and use passive design measures to reduce potential overheating set out in the London Plan.

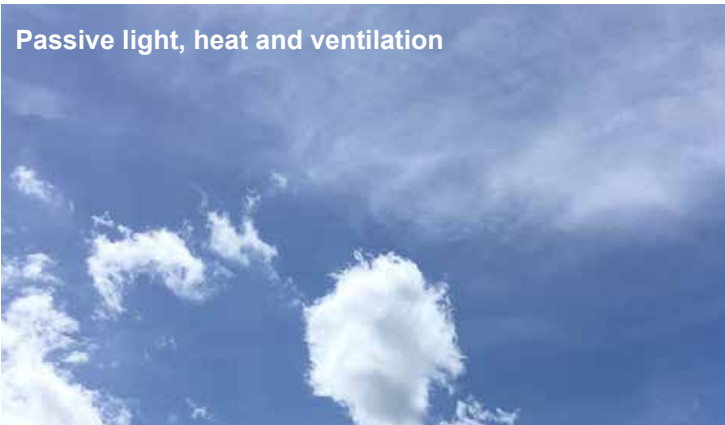
The amount of heat entering the building has been reduced using balconies and external louvres to provide shading, careful sizing and orientation of the windows. The specification of the 'g-value' of the windows which is a measure of how much solar heat (infrared radiation) is allowed in through has also been carefully optimized. In addition, high levels of insulation and air tightness, and the provision of green roofs at all levels also help to reduce energy absorbed by the roof.

Internal heat generation will be minimised through specification of energy efficient lighting and minimising heating pipe runs and insulating all heating and hot water equipment. There are no boilers within the apartments and the heating network is low temperature. All appliances will be energy efficient.

Heat within the building will be managed through use of the exposed internal thermal mass of concrete staircases and 2.5m high ceilings.

Passive ventilation is enabled through the design of the apartment layouts and positioning of windows. Secure ventilation louvres are provided to the ground floor apartments so that ventilation at night is possible.

Mechanical ventilation is provided which can make use of free cooling when outside temperature is below inside in summer months.



It has been possible to avoid the need for active cooling systems

Results from modelling by Meinhardt indicate that the scheme is compliant with the overheating requirements as set out in Building Regulations Part O using the current Design Summer Year weather file 2020 DSY1 and 2003 DSY 2. DSY 1 is for a moderately warm summer and DSY2 is a more extreme summer with a short intense spell defined by CIBSE.

For the other extreme weather scenarios, 1976 DSY3, a summer with a longer less intense warm spell a large proportion of the rooms meet the criteria. Where there are failures, they tend to be in bed rooms during sleeping hours where there are more than 32 hours annually with a temperature of over 26 degrees.

The assessment has been made taking into account the acoustic comfort of the occupants in accordance with the Building Regulations Part O. The site is in an urban setting but not particularly noisy and is suitable for residential occupancy. However, the assessment has been made on the basis that windows are only opened partially in order to limit disturbance from noise. There is therefore a balance that has been struck in the assessment between thermal and acoustic comfort and in extreme weather conditions individual occupants will be able to strike their own balance.

Further details are contained in a full overheating assessment which takes into account the acoustic impacts of opening windows by Meinhardt.



Acoustic assessment.

Ambient noise levels at the site are quite low, and the site is suitable for residential use. As discussed above in order to mitigate overheating residents will open bedroom windows particularly at night and their acoustic comfort must also be taken into consideration. The assessment shows that when windows are open by 28 degrees the expected indoor noise levels are acceptable measured against Building Regulations criteria.

The proposed plant including roof mounted Air Source Heat Pump (ASHP) equipment will be enclosed by acoustic louvred screening so that the noise levels experienced by neighbours is lower than existing back ground ambient noise levels.

The Noise Impact Assessment by Max Fordham sets out the assessment in detail.



Sustainable Urban Drainage.

To manage surface water run off a combination of green roofs, rain gardens and a rain water attenuation tanks is proposed to slow the flow of water into the public surface water drainage network. These measures will attenuate discharge rates to as close to Greenfield runoff rates as reasonably practicable. The assessment by Meinhardt shows a betterment to the existing 1 in 100 year peak discharge rates of 98%.

Two underground attenuation tanks are proposed, one in the shared garden between Building B & Building C and another in the shared garden between Building C & Building D2. The tanks are set sufficiently deep below ground to allow the area above to be fully landscaped and for tree pits.

Benefits of these systems include ecological enhancements and improved water quality. In addition, this attenuation could help reduce surface water flooding understood to take place on the existing carpark area on Braemar Road.

Full details of the Below Ground Drainage Strategy by Meinhardt.



Proposed site plans: Landscape



Indicative landscape plan - Image by Oobe, not to scale

Proposed site plans: Ground floor



Proposed ground floor plan Approx 1:600 @ A3