trace
ARCHITECTS

DESIGN AND ACCESS STATEMENT

New Family Home
Site at Upper Redlands Road
Reading
RG1 5HT

February 2021

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AERIAL VIEW OF THE SITE

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1.1 THE PROPOSAL

Trace Architects have been commissioned to submit a proposal for the design of a new dwelling at 43 Upper Redlands Road, Reading, RG1 5HT.

This proposal follows the dismissal at appeal of a previous application for 4 dwellings ref APP/E0345/W/19/3237840.

The inspectors main points from the decision, which form the starting point for this revised design are as follows.

1. Substantial loss of garden space caused by the 4 dwellings.
2. Visually harmful reduction of gap between 45 Upper Redlands Road and 17
Redlands Road
3. The extent of built form proposed would erode the spacious character of Redlands Conservation Area and the setting of Wantage Hall.
4. The extent of removal of mature trees would impact the green backdrop to the street scene.
5. Plots 1, 3 and 4 did not relate to established building lines.
6. The extent of punctuation of existing brick boundary walls including 3 accesses would cause unacceptable harm to the street scene.
7. As a result of the above, the appeal scheme was considered to neither preserve nor enhance the character and appearance of the Redlands Conservation Area and to have a detrimental impact on the setting of Wantage Hall.

Following a pre-application meeting which was broadly supportive of this scheme we have developed the design to take account of the points made during this process.

1. The box dormer has been split into smaller dormers which are similar in size and roof profile to the existing dormer on Number 41.
2. The two storey outrigger element to the rear has been reduced and lines up exactly with the similar outrigger on number 43.
3. The ground floor element has been reduced in depth as suggested and the over sailing canopy has been reduced in depth.
4. The materials used for the design have been reduced to white brick for the upper elements and standard colour brick for the lower elements to address the concern regarding the cohesiveness of the design.
5. The height of the single storey element has been reduced where it is in proximity to the boundary with the garden on number 43 to reduce any impact on amenity.
6. The access to the plot has been moved further along the site and the gate has been made a suitable size to allow for the appropriate visibility splays.
7. The side and front elevations of the property now incorporate brick patterns which reflect the local brickwork on the surrounding buildings.
8. A bio-diverse green roof replaces the previously proposed sedum roof.
9. The design allows for planting mitigation in favour of the modest tree removal required to achieve a net increase in trees on site

UPPER REDLANDS ROAD STREET FRONTAGE

WANTAGE HALL

45 UPPER REDLAND ROAD

VIEW TO 43/39 UPPER REDLANDS ROAD SHOWING OUTRIGGER AND DORMER TO NO. 39

VIEW TO 43/39 UPPER REDLANDS ROAD SHOWING BLACK WINODW FRAMES TO NO. 39

VIEW TO 43/39 UPPER REDLANDS ROAD SHOWING BRICK FLANK WALL TO NO.39

2.1 SITE AND CONTEXT

The site is located in south-east Reading, within the Redlands Conservation Area. The site comprises a plot between 43 and 45 Upper Redlands Road and also land surrounding number 45 and 17 Redlands Road. The site is surrounded by residential dwellings, other than at the points where it fronts a road. These residential dwellings are between 2 and 3 storeys in height, and their design varies within traditional architecture with examples of two storey brick terraced dwellings and two storey rendered dwellings

To the north of the site, across Upper Redlands Road, is the 20th century Grade II Listed Wantage Hall.

The site lies within Flood Zone 1, and so is at the lowest risk of flooding.

2.2 ACCESSIBILITY AND TRANSPORT

The site is within walking distance to the train station giving commuter access to Paddington. It is also walking distance to bus stops, schools, retail and amenities.

It has good road links to M4 junction 12, Wallingford and Reading.

SITE PLAN

3.1 SITE PLAN

The site fronts Upper Redlands Road to the north, Redlands Road to the west and New Road to the south.

The site includes land which originally formed part of the gardens around the corner buildings which front onto Redlands Road and what reads as a vacant plot alongside 43 Upper Redlands Road .This plot has a 1.8m brick wall running between it and the rest of the site.

A raised mound of trees forms part of the plot towards the rear have all been classified as either C or B quality. A full schedule can be found in the Arboricultural Survey and Report.

TREES GROWING ON RAISED MOUND

STEP 01: IDENTIFY MASSING OF EXISTING PROPERTIES

STEP 02: COPY MASSING TO FORM NEW BUILDING

STEP 03: IDENTIFY MASSING OF EXISTING PROPERTIES

STEP 04: COPY MASSING TO FROM NEW BUILDING

4.1 USE

The scheme will provide a single detached family home with associated parking.

4.2 DESIGN RESPONSE

The initial response to the site was to respond to the points made in the Inspectors report from the previous scheme. A limited design competition was held and two schemes were presented to the council and their design review panel at pre app stage. Comments from the DRP and the councils officers were then used to refine the scheme to its current form. We have also engaged with the local residents on the project and taken their suggestions on board, where possible. The approach limits the development to a single dwelling that is designed in a way that works with the established urban grain, and retains the maximum amount of green space and green backdrop to the street scene.

4.3 MASSING AND SCALE

The proposed building comprises 2 elements.

The first is a two/three storey element which follows the massing established by 39 and 41 Upper Redlands Road and which will create a cohesive group of 3 town houses within the street scene.

STEP 05: EXISTING BOUNDARY WALL IDENTIFIED

STEP 06: WALL USED TO LIMIT DEVELOPMENT.

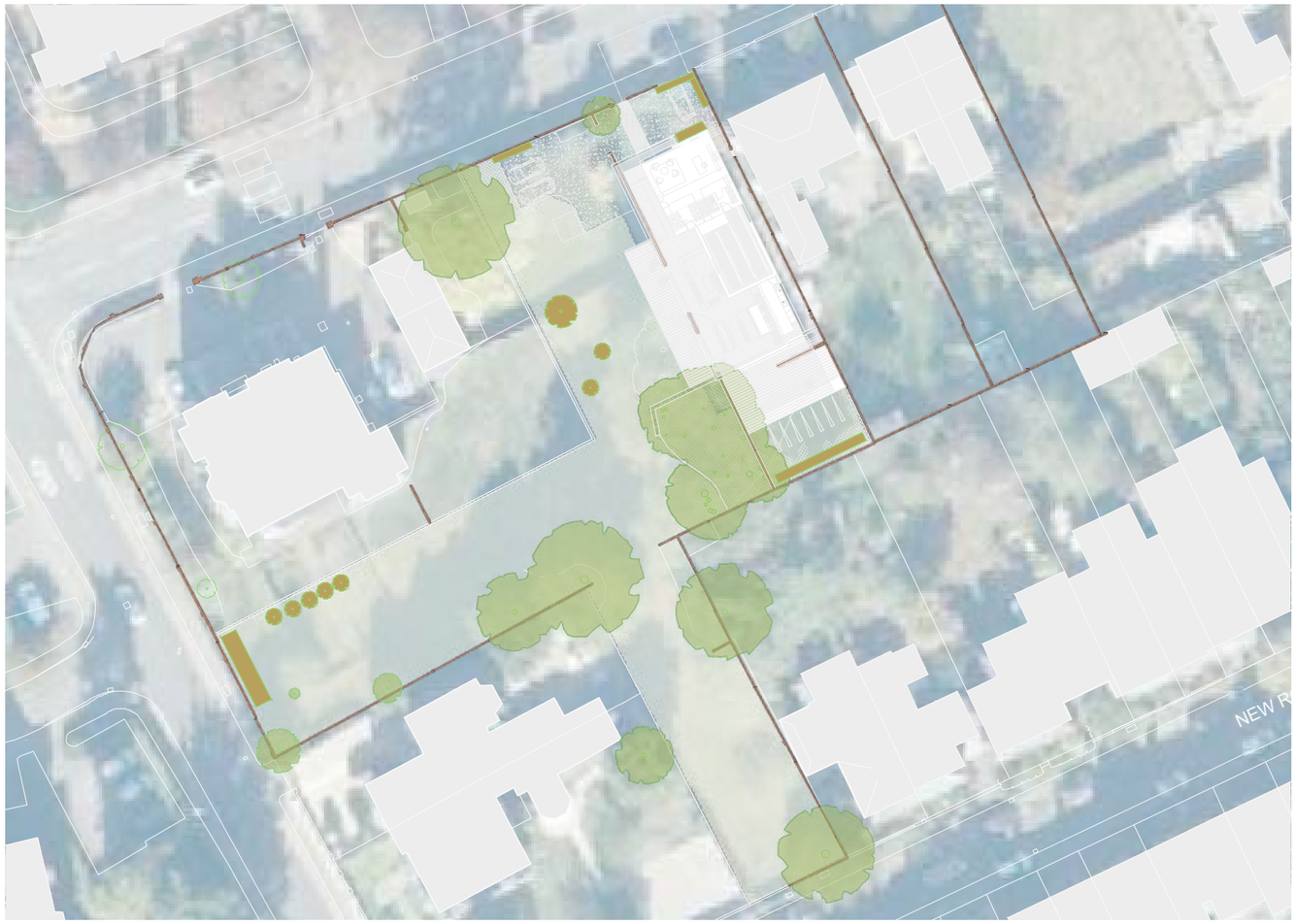
OVERVIEW OF SCHEME

The second element is a single storey element which creates living areas which stretch down the plot and allows views to both the garden to the rear and to the side of the property.

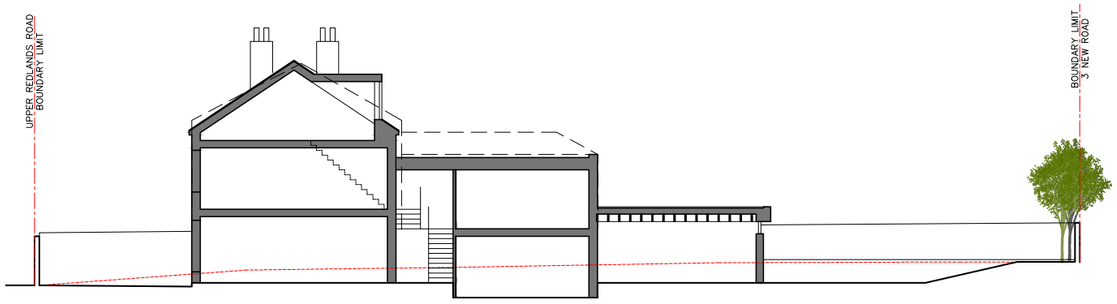
The existing wall, separating the plot adjacent to number 41 from the rest of the site is used to form the boundary of the living accommodation.

A clerestory window above the wall and overhanging roof give this roof element the appearance of floating over the wall, allowing it to retain its original form.

The overall design is to create a garden pavilion that allows the living areas to address the extensive grounds a taller element that responds to the existing street scene.



PROPOSED GROUND FLOOR SITE PLAN



LONG SECTION

The site plan illustrates how the development is contained by the existing brick wall.

This allows the green spaces to be maintained around the more prominent corner buildings to 45 Upper Redlands Road.

The site rises in level towards the rear of the site and the single storey element gradually sinks into the site as it raises towards the rear further lessening its impact

This element has a biodiverse green roof, which together with the additional tree planting proposed will reduce the impact of the built form when viewed from higher vantage points.

The access and parking is to the side of the property and will be formed of low impact construction to take account of the mature tulip tree located nearby.

EXISTING STREET VIEW

PROPOSED STREET VIEW

When viewed from the street the proportions of the building are in keeping with its Victorian neighbours and the new building makes a modest flanking element to the existing ensemble, which is subservient to the central villa.

It is proposed to clad the upper elements of the building in white brick and slate tiles to match the adjacent property and the form of this element, with a simple gable end matches 39/41 and creates an understandable trilogy of buildings with the more elaborate 43 to the centre.

The white brick reference both the colour palette of the immediate neighbours and the emphasis on brick in the area seen in the boundary walls, Wantage Hall and the flank wall of Number 39/41

A sliding brick gate is proposed to allow access to the site without compromising the integrity of the existing boundary wall. Whilst we have shown the gate to be clad in brick to match the existing wall in the application drawings we have also explored a metal clad option and could change to this is it was considered a better alternative.

Brick Clad Gate

Corten Metal Gate with Laser Cut Pattern.

WANTAGE HALL - DIAMOND PATTERN AND FLEMISH CROSS PATTERN

PROPOSED BRICKWORK DETAILING TO FLANK WALL

4.4 BRICK DETAILING

The design uses brickwork in a variety of ways to form the character of the building whilst reflecting the surrounding context.

The flanks of the building use a diamond brick motif similar to that used on the boundary walls to Wantage Hall.

The pattern is graded into the flank walls and becomes more transparent and obvious as it progresses.

BRICKWALL DETAILING TO 45 UPPER REDLANDS ROAD

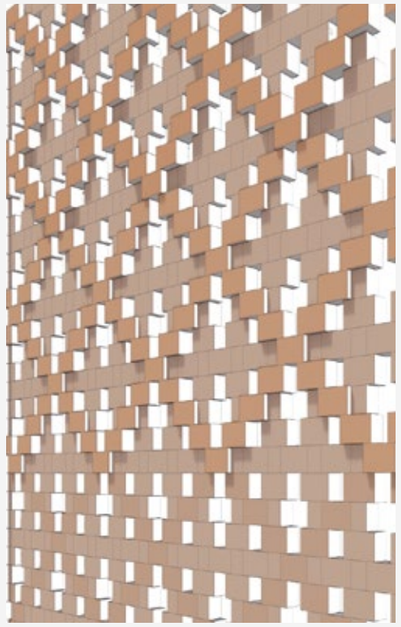
PROPOSED ENTRANCE AND SCREEN VIEW WITH FLEMISH CROSS DETAIL

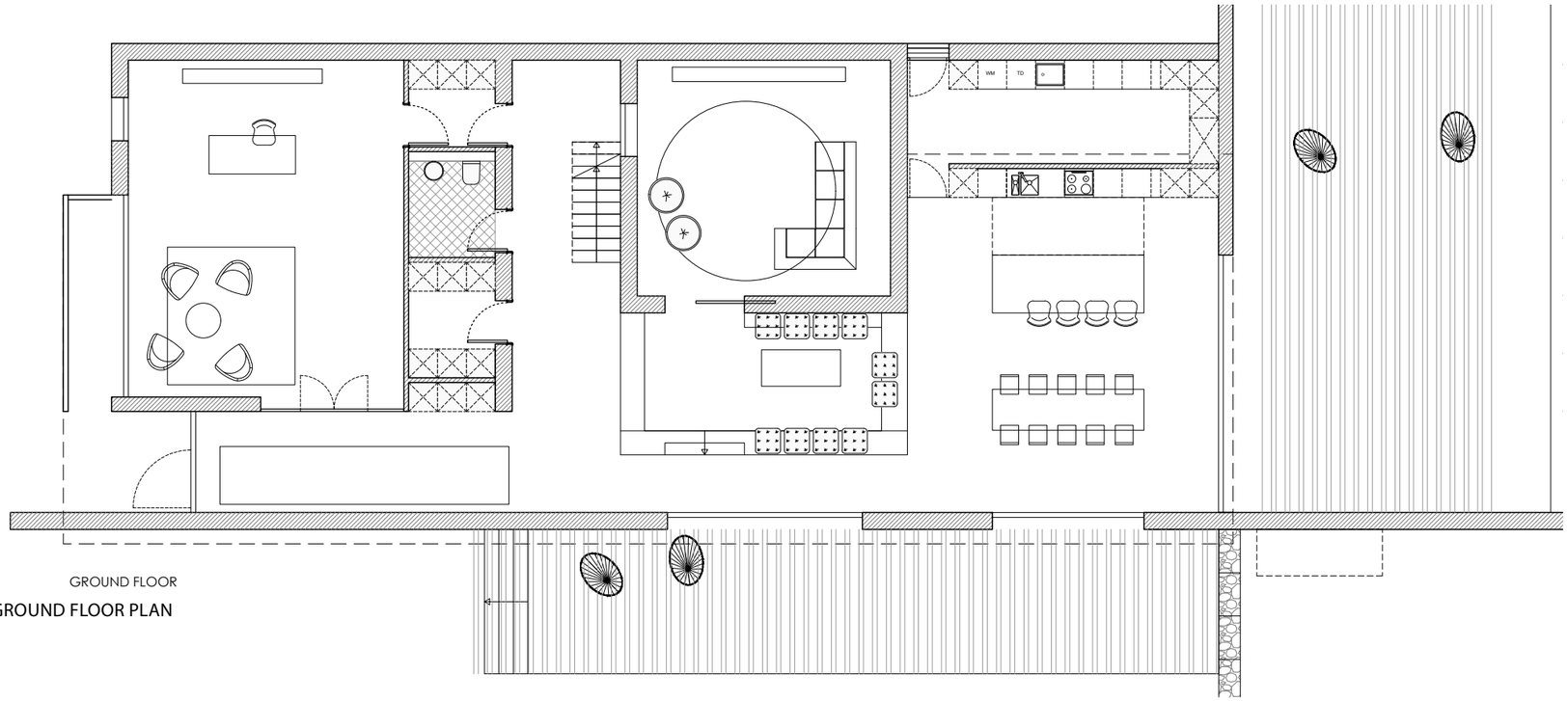
4.4 BRICK DETAILING

The design uses brickwork in a variety of ways to form the character of the building whilst reflecting the surrounding context.

The brick screen to the ground floor uses similar opening to the wall in front on 45 Upper Redlands Road to provide visual and acoustic screening to the front rooms.

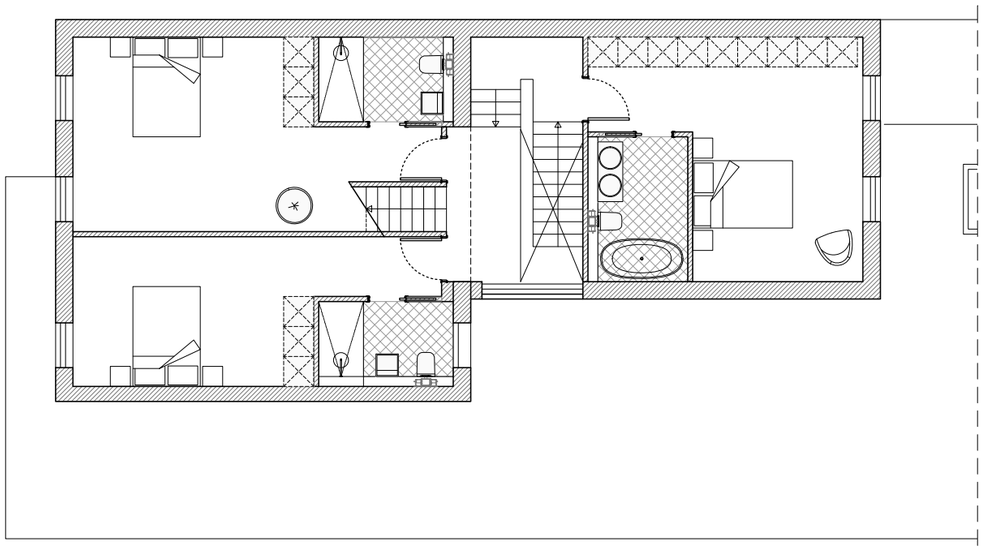
The flanks of the building use a diamond brick motif similar to that used on the boundary walls to Wantage Hall.



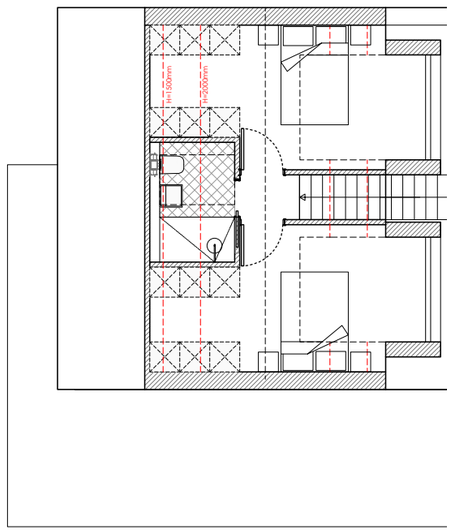


GROUND FLOOR

GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

4.5 LAYOUT

The property is organised in a traditional town house form with bedrooms arranged in a split level series of upper floors and living areas to the lower levels.

The first floor is arranged with more formal rooms to the front of the property and open plan family living areas to the rear.

The building has been designed with accessibility in mind and to be adaptable for future residents needs.

The room to the front of the ground floor could in future be used as a ground floor bedroom and with minor modifications the ground floor bathroom could be used as an accessible shower room.

PROPOSED LONG SECTIONS

SITE PLAN

4.6 ACCESS

Access into the site will be via two entrances:

-Vehicle Access is provided by a new opening formed in the existing wall. A sliding brick faced panel forms the gate which preserves the visual integrity of the existing wall when the gate is in a closed position.
Parking is provide for 3 vehicles within the site and a turning head is provided to allow the vehicles to join the road in forward gear.

-Pedestrians will use the existing site entrance that provides level access directly to the front door.
Level access is provided to the entire Ground floor which includes a downstairs bathroom. All doorways and stairs have been designed to meet building regulations standards and provide level access.

4.7 TREES AND HEDGES

To allow the new proposal we have proposed the removal of 6 no trees from the northern edge of Group 1. This limited reduction will allow the group to maintain its form and amenity value.

We propose to plant new trees, shrubs and plants as an addition to the overall planting of the site in the locations indicated. This will achieve a net increase in trees on site.

The boundary to number 45 will be formed with a timber fence and hedge which will further increase the green nature of the site and avoid building structures within the Root Protection Zone.

4.8 RECYCLING, REFUSE AND LANDSCAPE

The proposals allocate a dedicated area for:
- 240 litre recycling bin
- 180 litre refuse bin and
- 23 litre food bin
to the north boundary wall

The maximum amount of soft landscaping will be used; where this is not possible permeable surfacing materials will be used to reduce surface water run off.

A SuDS compliant design will be designed by an specialist as a part of full scheme drawings

4.8 SUSTAINABILITY

Buildings are responsible for more than 40 % the UK's total carbon footprint, and as much as one-third of global greenhouse gas (GHG) emissions. Heating alone results in 10% of the nation's carbon footprint and homes are more significant than all other building types put together.
However, the building sector also has the largest potential for significantly reducing GHGs compared to other major emittors.

To put that in context:

-In 2017, UK net emissions of GHG were 460 million tonnes (Mt). 373 Mt of these were CO2 emissions.
-A typical masonry house in the UK takes between 50 and 80 tonnes of CO2 to build.
-The average household in the UK emits 2.7 tonnes of CO2 every year from heating their home.
-The average person in the UK has a carbon footprint of 5 tonnes of CO2 per year

Great effort has been taken to achieve the best possible sustainable approach for this development, for example:

USE OF RENEWABLE NATURAL RESOURCES:

-WATER:
To reduce the environmental impact of mains water consumption we propose using a GREY WATER RECYCLING SYSTEM and a RAIN WATER HARVESTING SYSTEM.
Just by re-using water for flushing toilets we will be cutting a third of household water cosumption. In addition, it will be also connected to the irrigation system for the green walls and green roofs. It will also be used to water the garden and will aid in surface water attenuation.

-SUN:
The design of the building makes the most of SOLAR IRRADIANCE in winter while introducing SOLAR CONTROL in summer. (refer to passive design)

Solar energy is also used to provide on site energy generation through the installation of SOLAR PANELS and BATTERY STORAGE. A 12kWp system will be installed. It can generate up to 10.000 kWh of electricity a year and save around 5 tonnes of carbon per year. Batteries will make available the energy generated for use during non-production hours to maximize use of the energy generated.

-WIND:
To reduce the heating and cooling demands of the building we propose a HEAT RECOVERY SYSTEM which recycles the energy in stale air and transfers it to the new fresh air. A MVHR system in a domestic property can save from 25% to 50% of heating demand.

The design of the building considers as well the importance of a PASSIVE AIRFLOW to allow efficient HEAT DISSIPATION in summer through CROSS VENTILATION. (refer to passive design)

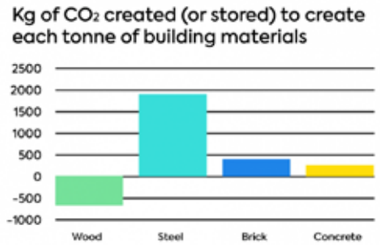
-AIR SOURCE HEAT AND COLD:
To provide heating, cooling and hot domestic water it is proposed to install a AIR SOURCE HEAT PUMP which will take advantage of the electricity from the solar panels

-TIMBER:
The election of the materials used for the new construction takes into account its life cycle, including the total amount of energy that involves the production of each one and the energy that involves its transport to site.

It is proposed to use FSC-certified sources of timber for different elements into the building, from doors to structure. Timber industry encourages further forestry investments and supports rural infrastructure and employment. Also as a construction material, timber is carbon negative, see table below:

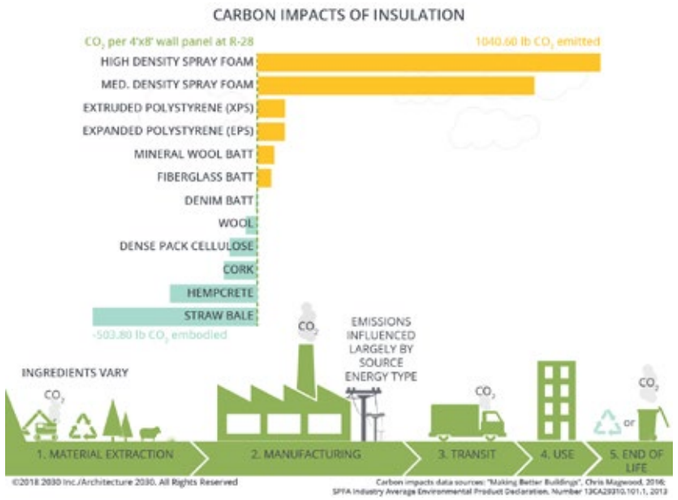
The timber structure will be Glulam. It is a lighweight alternative to concrete or steel structure, with excellent load capacities and great design flexibility as it can be manufactured with complex shapes

When compared to concrete and steel, glulam can produce a lighter weight structure with a lesser carbon footprint. Studies show that for every cubic metre of glulam that is used, the building sequesters 734 kg of carbon dioxide.



-INSULATION:
The choice of insulation has considered the thermal performance, climatic requirements, breathability, moisture resistance and embodied carbon footprints.

It is proposed to use MINERAL'S WOOL INSULATION which is an effective thermal and acoustic insulation. It is highly breathable, beneficial for humidity control with an hydrophobic exterior and a hydrophilic interior, not support the growth of mould and is self-extinguishing.



PASSIVE DESIGN:

The building introduces heat gain control and heat dissipation elements to the design in order to improve the indoor thermal comfort with low or no energy consumption:

-WINDOW DESIGN AND POSITION:
Enables cross ventilation to allow heat dissipation during summer.

-TIMBER OVERHANGING ROOF provides shading from direct light and the planting contributes to thermal regulation, creates an habitat for wildlife and provides a more aesthetically pleasing landscape,

Chosen materials for each element of the construction also contribute to cut down the necessities of energy to achieve the thermal comfort:

-WALLS:
A composed envelope build of BRICK WALL and MINERAL WOOL INSULATION will provide a solution that incorporates low thermal conductivity and high thermal mass. A traditional cavity wall section provides great thermal insulation, air tightness, indoor air quality, moisture control & durability

-GREEN ROOF:
Roof structure will be glulam. It will be highly insulated and also planted.

Green roofs contribute to thermal regulation and energy conservation but also serve several other purposes: reduce stormwater runoff, create an habitat for wildlife, provide a more aesthetically pleasing landscape, help to sequester carbon and it can also be a source of food.

-GLAZING:
All glazing will be high performance.

-LIGHTING:
All light fittings will be 100% low energy.

5 CONCLUSION

The proposed design aims to provide a high quality piece of architecture that responds both to the street scene and its garden setting. It further aims to achieve this with an environmentally friendly approach through the use of materials, technologies and daylighting strategies.

It pays close attention to the inspectors report and the pre app consultation and addresses the points raised as follows.

1. Substantial loss of garden space caused by the 4 dwellings.
 - Development limited to a single dwelling.
2. Visually harmful reduction of gap between 45 Upper Redlands Road and 17 Redlands Road
 -This gap is fully maintained under this revised scheme with no building proposed between this building. The gap will be planted with 6 new trees to enhance the green nature of the gap.
3. The extent of built form would erode the spacious character of Redlands Conservation Area and the setting of Wantage Hall.
- Reduced form and location of building maintains spacious character and setting of Wantage hall.
4. The extent of removal of mature trees would impact the green backdrop to the street scene.
- Limited removal of existing trees and replacement with semi mature replacement trees to increase tree cover.
5. Buildings do not relate to established building lines.
- Proposal follows building lines, massing and from of existing Victorian Properties.
6. The amount of punctuation of existing brick boundary walls would cause unacceptable harm to the street scene.
- A single additional opening is required which will be formed of a brick slip faced sliding gate to minimise the impact on the street scene.
7. As a result of the above, the appeal scheme would neither preserve nor enhance the character and appearance of the Redlands Conservation Area and would have a detrimental impact on the setting of Wantage Hall.
 - The new design provides a high quality piece of architecture which provides an attractively detailed town house to the street and a contemporary pavilion building to its extensive garden areas. The proposal and the associated planting works with the urban grain and local features to provide a new dwelling which will enhance the Conservation Area and provide attractive and sustainable accommodation to future residents.