

## 9.2 Aerial Photographs

Birds Eye View  
of the Site



## 9.2 Aerial Photographs

Close Up  
Aerial View  
of the Site



# 10.0 Historic Site Information

## 10.1 Aerial Photograph

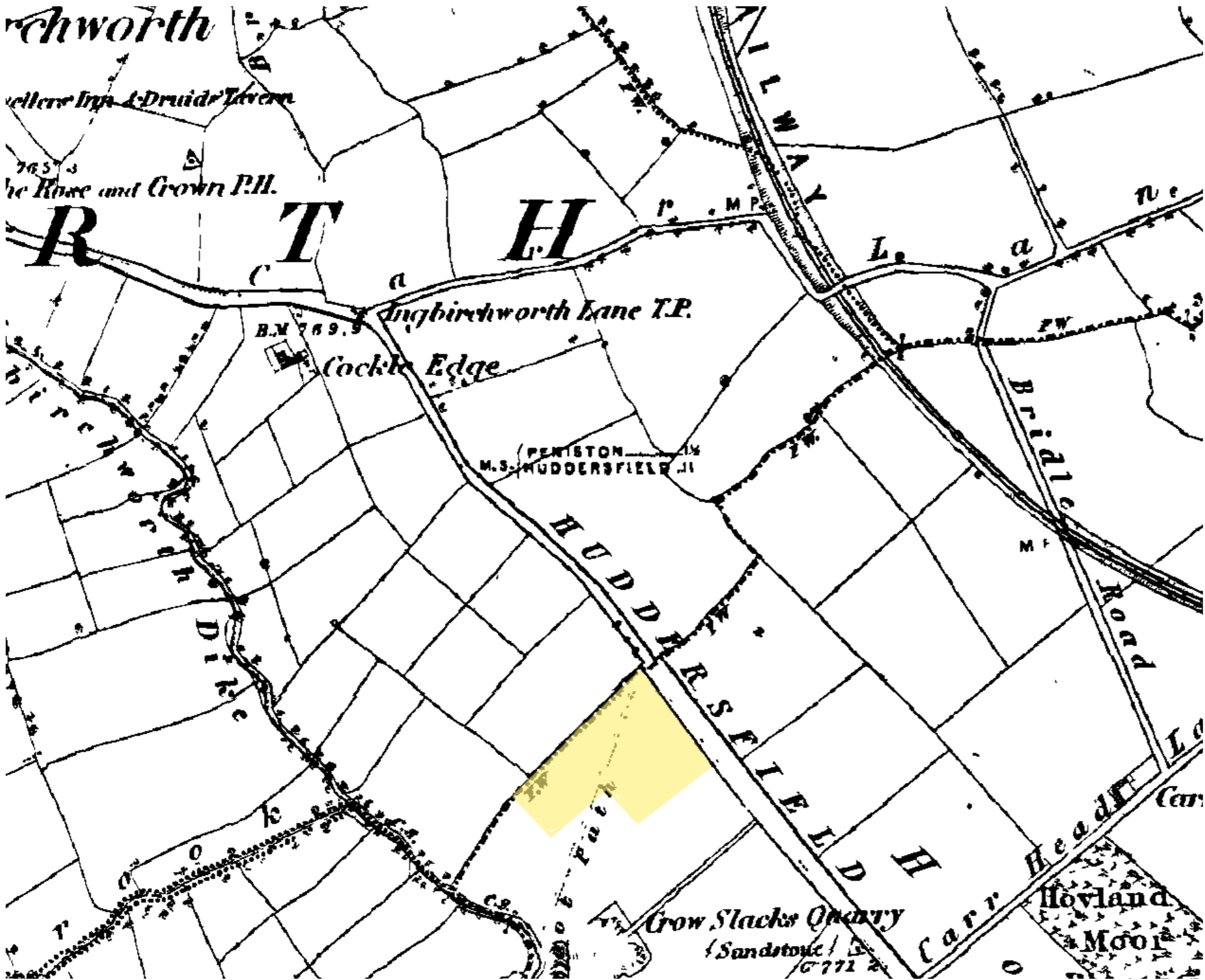


Close Up  
Aerial View of the Site  
(Before the adjacent site  
was redeveloped)

# 10.2 Historic Site Map

First Edition National Grid  
Showing the old Quarry

1850 (date approx)



# 10.2 Historic Site Map

Showing the old Hospital  
1948



## 11.0 Paragraph 55

# 11.1 Paragraph 55-Examples

Examples that have been granted planning

Thousand Trees House  
Collaborated with ARUP Engineering to develop  
a new approach to domestic sustainable design.



Furieux, East Harling  
Planning Department Committee stated:  
“It is considered that the proposal would  
also achieve a high standard of sustainable  
construction and innovative design” and  
“Although of contemporary design, the  
proposed dwelling makes reference to local  
architectural traditions.”

The Dumble  
A combination of innovative design, new  
building techniques and the use of redundant  
or recycled materials.



Bigbury Camp  
The project features a ‘never-before-used free  
radical water treatment system’, combined heat  
and power generating solar panels and will  
be built from local timber and crushed cockle  
shells from Whitstable, which will make up the  
floor.



Hedge House Knowle  
Design Review Team stated:  
“the choice of larch wood and reclaimed local  
bricks as principal materials,  
and the way they are used in vertical  
panels, evokes traditional building methods  
characteristic of the local  
area”.

## 11.2 Paragraph 55-Overview

The imperative requirements for any building being judged using paragraph 55 criteria are for the building to:

1.0 *'be truly outstanding or innovative, helping to raise standards of design more generally in rural areas'*;

2.0 *'reflect the highest standards in architecture'*;

3.0 *'significantly enhance its immediate setting'*; and

4.0 *'be sensitive to the defining characteristics of the local area'*

Not all sites have opportunities, but we feel this particular site deserves a settlement, albeit sensitively approached as not to disrupt the existing the landscape.

1.0

*'be truly outstanding or innovative, helping to raise standards of design more generally in rural areas'*;

We aim to celebrate both the words 'outstanding' and 'innovative' through our design and through the concept behind the project.

The environmental role of the building was in many ways the starting point for the design. As stated before, the building is designed to sit into the hillside, covered by a green roof and connected to the landscape, with every attempt made to minimise its visual impact.

Its proposed construction is from natural, renewable materials, and its operation uses environmental strategies and technologies to reduce energy demand. The proposals respect the countryside surrounding and character of the area, and wish to sit gently within it and not draw heavily upon the area's resources.

With regards to the clients themselves, they both wish to work from home, bringing their business to the area.

This should support economic growth in rural areas in order to create jobs and prosperity by taking a positive approach to sustainable new development.

The construction and technology incorporated into the building also aims to be innovative. This can be seen in many different attributes of the building's composition. A rainwater harvesting unit has been built-in to the surrounding greenery. In all systems the roof water or surface water is filtered before entering the storage tank. The underground system features overflows that will skim off surface pollen and algae and for the main septic tank. This stops solid back flow and prevents vermin entering the tank from the outlet sewer.

We are proposing using insulating concrete form work (ICF) for the sub and superstructure as it is an innovative modern method of construction, which combines the inherent strength of concrete with the excellent thermal insulation properties of polystyrene to produce cost-effective and durable structures. The polystyrene is used as permanent form work for the concrete and is available in a variety of configurations and a number of proprietary systems.

The most innovative approach comes in the form of the cladding and material positioned on the front of the building. The stone of choice would be local sandstone (mill stone grit series), it is extremely durable, it takes detailed carving incredibly well and has a quartz constituent that catches the light to great effect when worked with a chisel. Sculpture rarely comes close to the sheer scale of this build and recent architecture that engages with stone as an evocative and meaningful medium (beyond its decorative use as a surface cladding) tends to stay with surfaces that are relatively flat and grid-like.

2.0 *'reflect the highest standards in architecture'*;

This proposal aim to achieve the highest standards in architecture and we have assessed the project against various sustainable building codes including Housing for Life and The Sustainable Homes Code Assessment which we aim to achieve code level 6 – 'A zero carbon home'.

3.0 *'significantly enhance its immediate setting'*;

In architectural terms, the proposal encompasses this aspect through its design in various ways. The building itself is predominately underground in order to embed itself into the existing natural landscape with the front façade's material using naturally resourced stone.

In addition to this, as stated previously in 1.0 of the assessment, the proposal does not only achieve this aspect architecturally, but also with regard to the local community, is enhanced through the client's occupation as they will help cultivate the existing economic climate.

4.0 *'be sensitive to the defining characteristics of the local area'*

The development took inspiration from the existing context that it lies within by following the topography of the site and aligning the building's shape to the topography of the ground.

# 12.0 Visuals

# 12.1 Visuals of Proposal View 1



# 12.1 Visuals of Proposal View 2



# 12.1 Visuals of Proposal View 3



# 12.1 Visuals of Proposal View 4



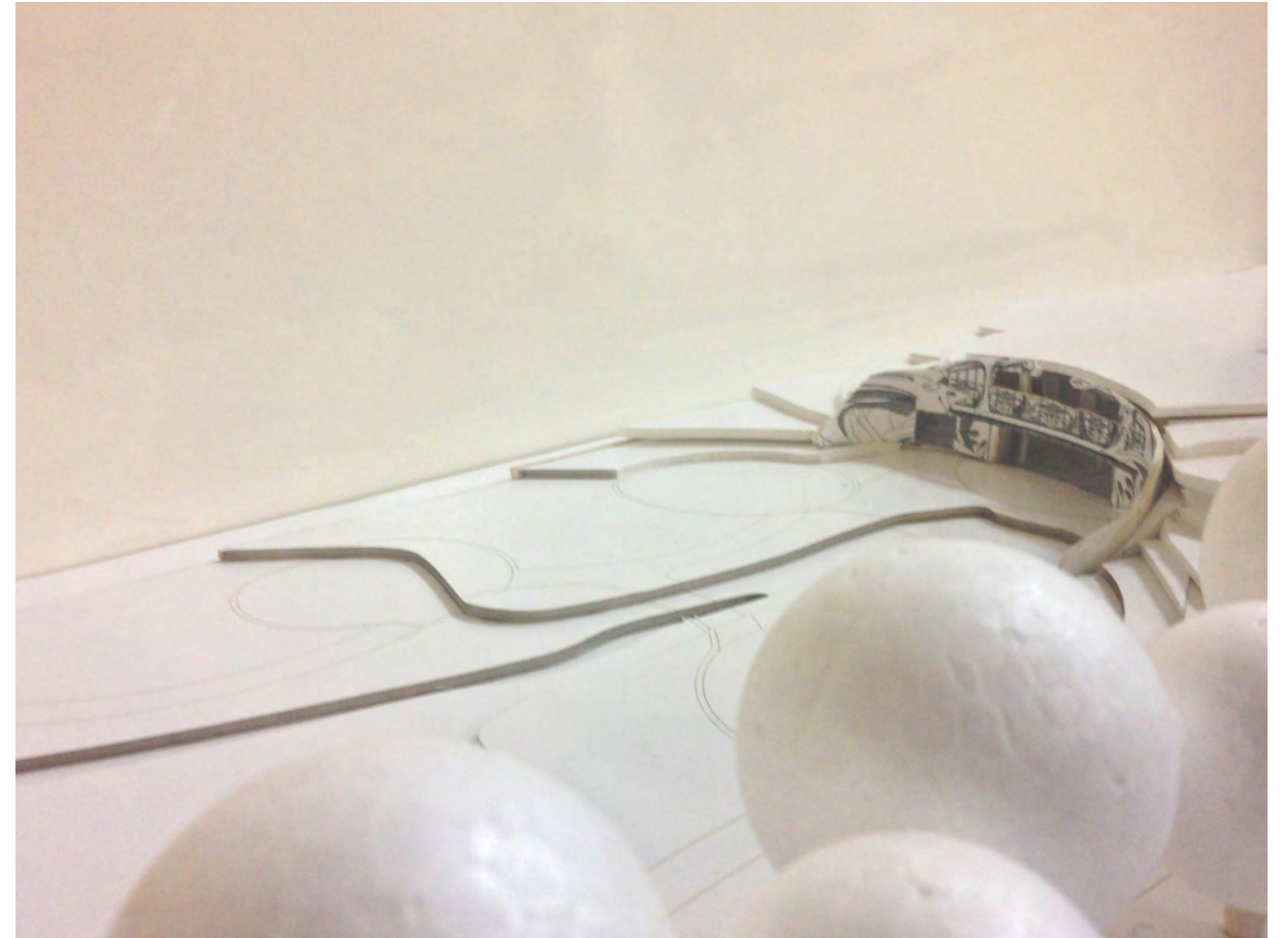
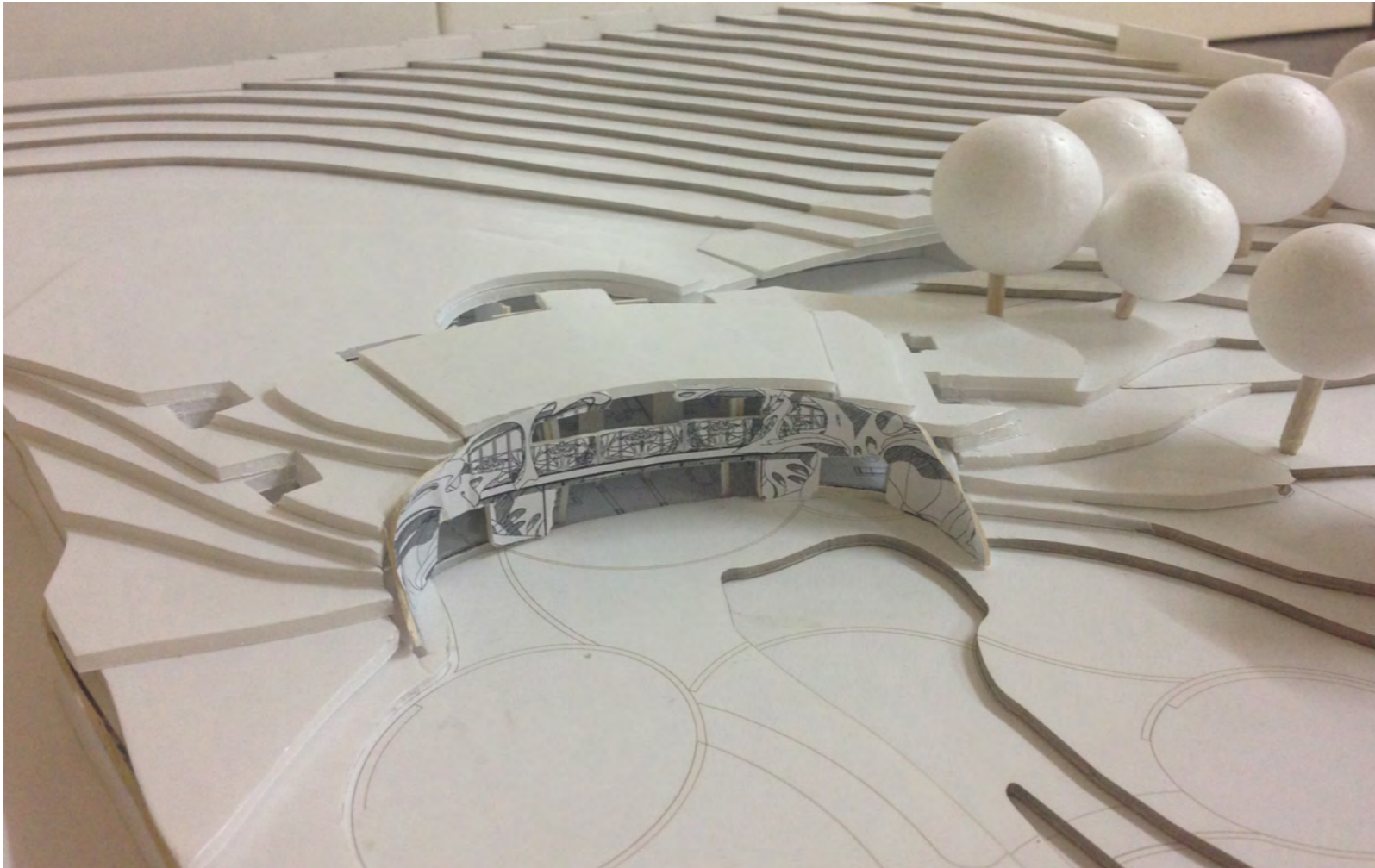
# 12.1 Visuals of Proposal View 5



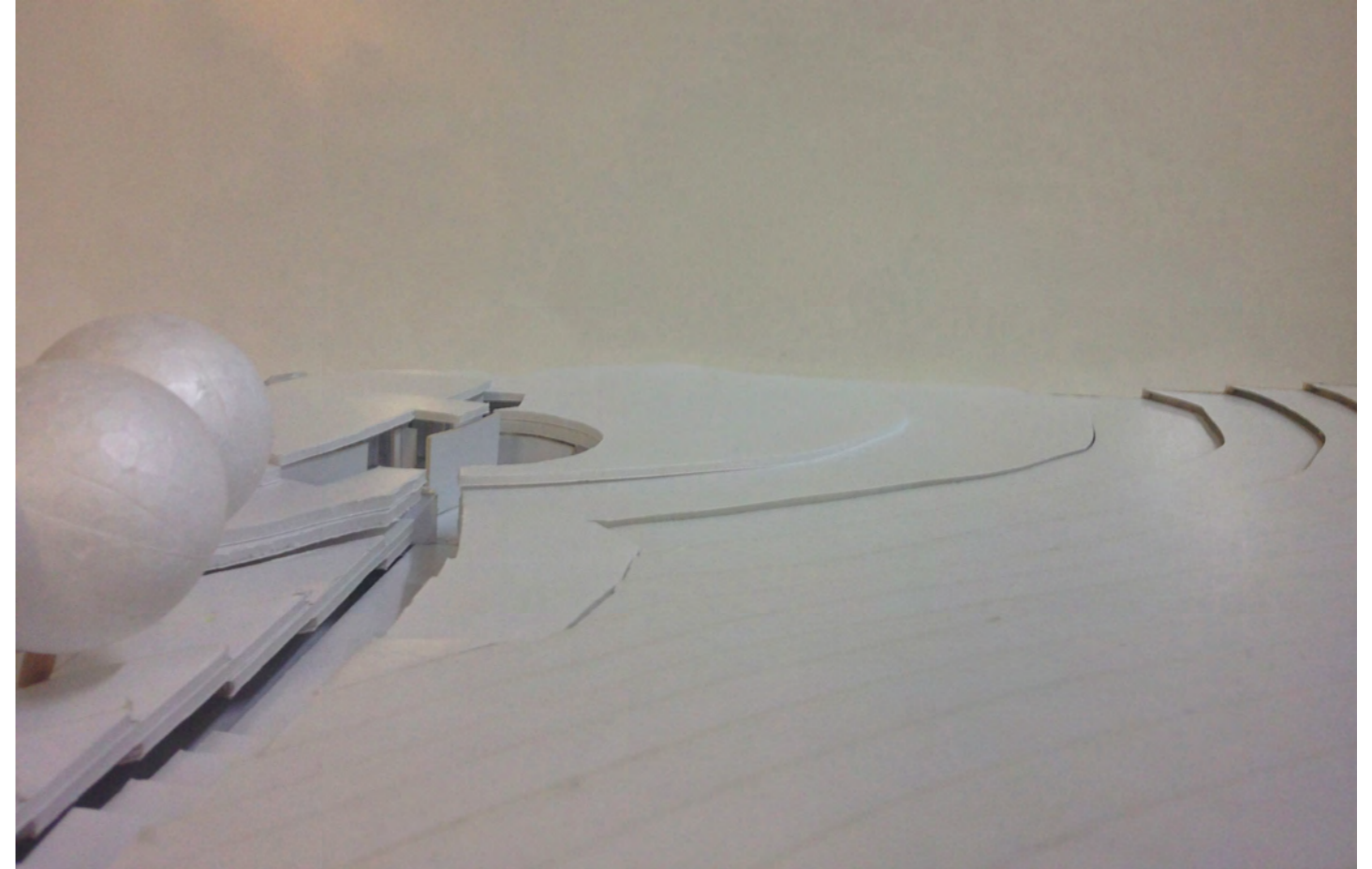
## 12.1 Visuals of Proposal View 6



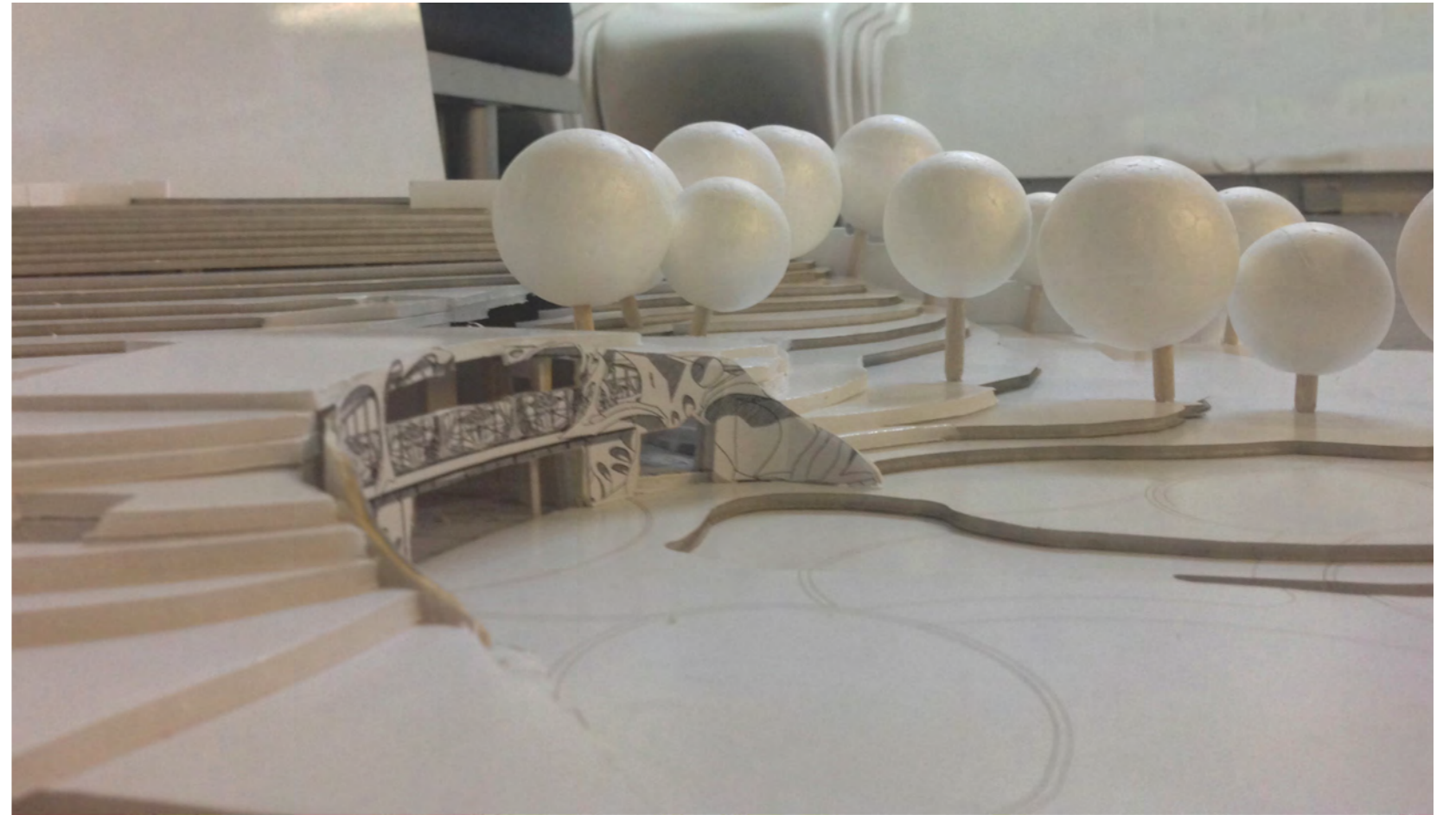
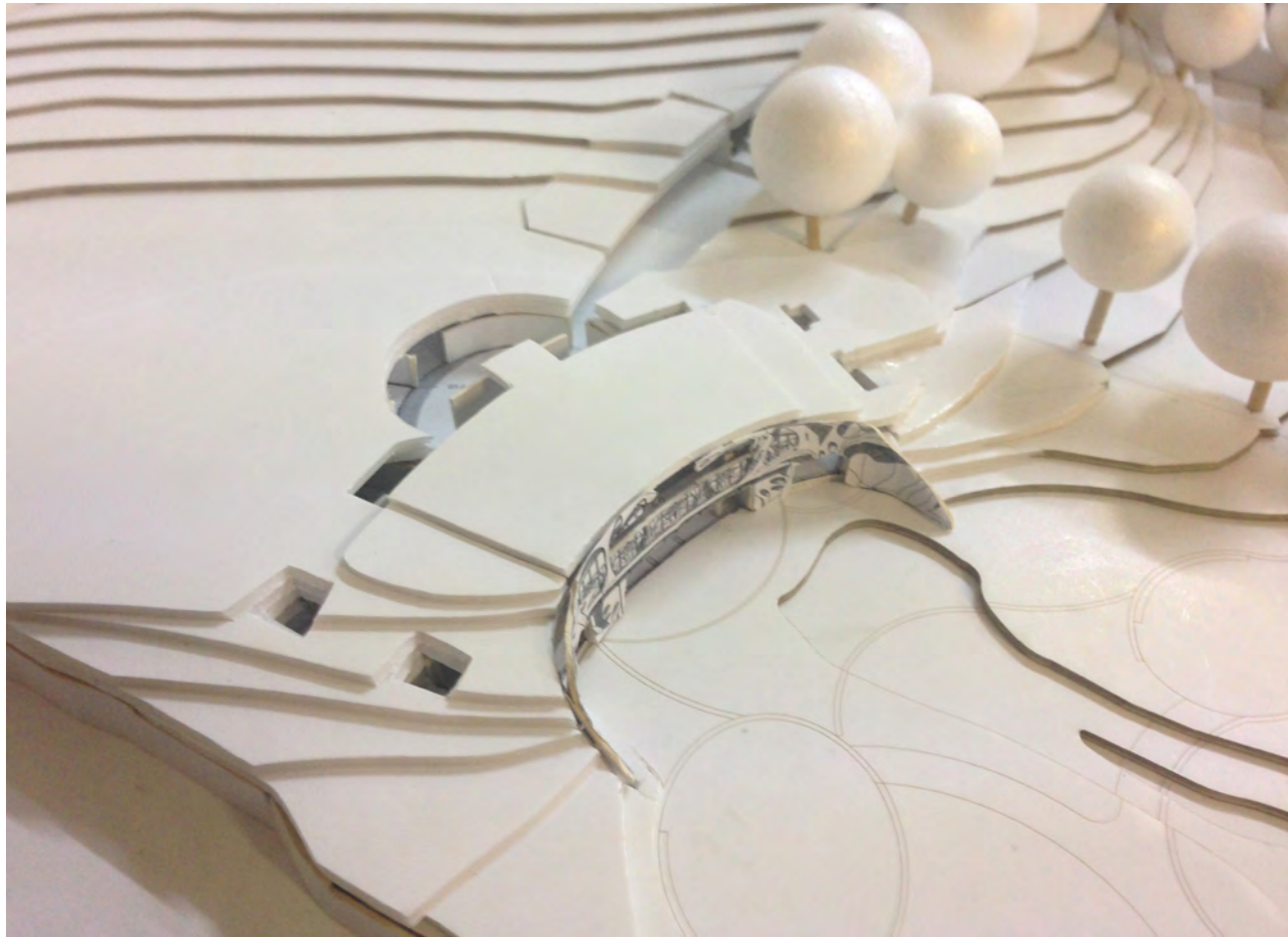
## 12.2 Physical Model



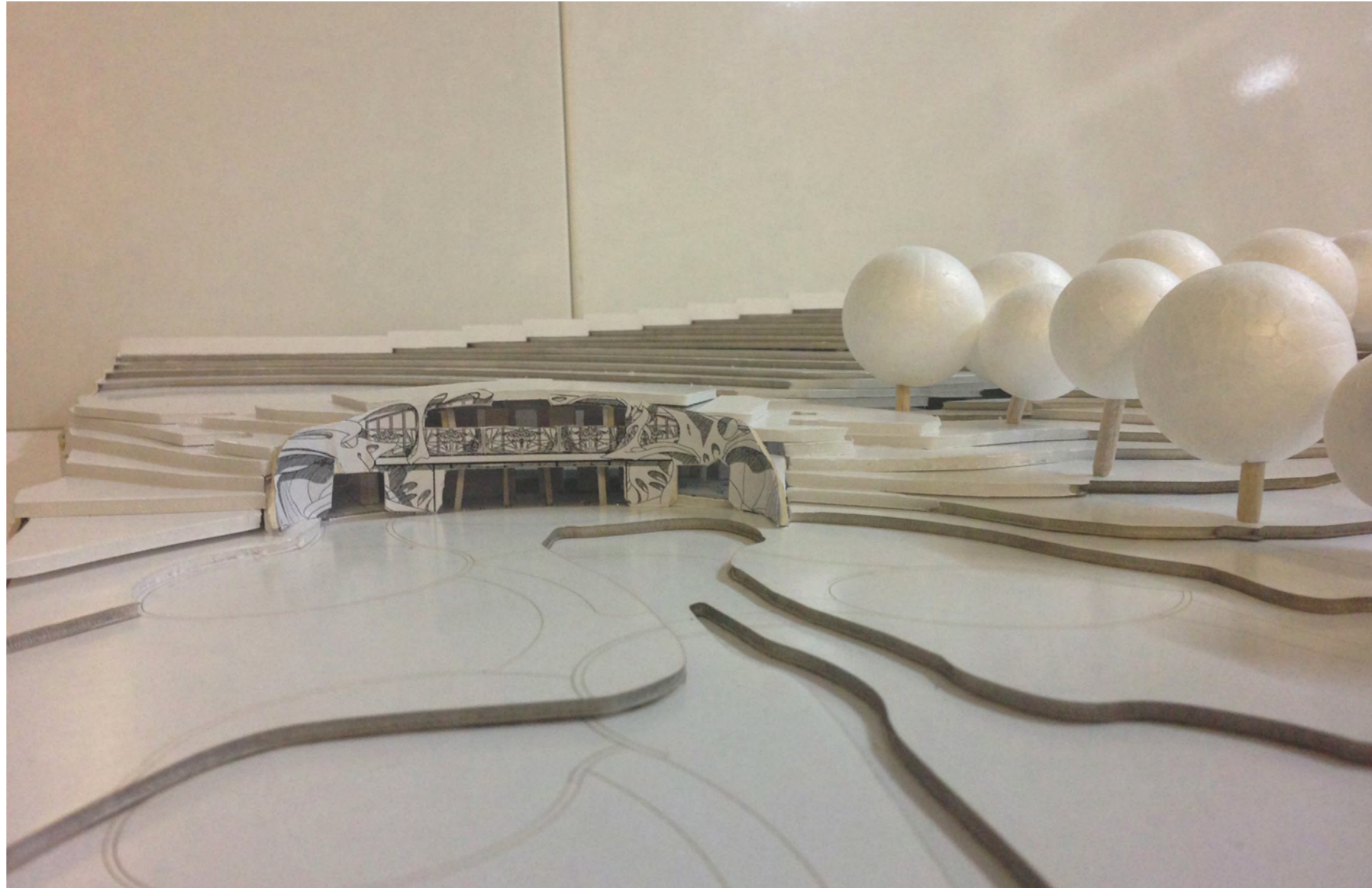
## 12.2 Physical Model



## 12.2 Physical Model



## 12.2 Physical Model



## 12.3 Artist Image 1



## 12.3 Artist Image 2



# 13.0 Technical Appraisals

## 13.1 Site Access

### Access Road

The site is accessed from Lakeside View which runs off Huddersfield Road. The access road will cut into the landscape within the site boundary and be hidden by the hillside gradient.

### Pedestrian Access

Footpaths are close to the site and run along Huddersfield Road connecting to the local school and town of Ingbirchworth. There is also a network of footpaths that run around the Scoutdike Reservoir and ajoin to the main roads.

### Public Transport

Bus services follow a route over Huddersfield Road that connects to Penistone, Barnsley and Sheffield. Local train stations; Penistone and Denby dale have train connections to Huddersfield, Barnsley and Sheffield.

### Vehicular Access

The main road to the site is Huddersfield Road which has connections to the M1 via Barnsley road.

## 13.2 Secured by Design

The concept of Secured by Design is one of the government's key objectives for the planning of new housing is to secure high quality sustainable places where people will choose to live. To achieve this, the government recognises that much greater emphasis needs to be placed on the quality of design and planning. Designing for community safety is a central part of this, and the core principles apply not only to residential but also to other forms of development.

Secured by Design is a police initiative to encourage the building industry to adopt crime prevention measures in the design of developments to assist in reducing the opportunity for crime and the fear of crime, creating a safer and more secure environment. Secured by Design is owned by the Association of Chief Police Officers (ACPO) and has the support of the Home Office Crime Reduction & Community Safety Group and the Planning Section of The Office of the Deputy Prime Minister (ODPM).

We have designed this property with an integrated approach that has considered the following points:

- Environmental quality and sense of ownership by creating a well-designed environment with the included role of landscape design
- Natural surveillance through windows, minimising blind spots
- Access and footpaths to the dwelling, making it simpler to approach a property, and minimizing public access to private areas of a house.
- Lighting of the entrance and the driveway, ensuring there are no dark spots around the property for people to hide at night
- Clear entrance areas – allowing visitors to arrive at the house, and the homeowner to see without blind spots all people approaching the house
- Access Points to the house are strong, with the use of strong frames; secure doors, quality locks and bolts and laminated/toughened glass on

larger windows, in addition to locks on all of the windows

- Strong edges to the site with maintained fences and hedges
- Integrated alarm system with remote monitoring
- The garage and external storage areas are fitted with quality locks and integrated with main house alarm system

## 13.3 Housing for Life

“A good project will continue to provide value for money and meet user needs throughout its lifetime.”  
National Audit Office, 2004

A well-designed home will need to take account of changing demands and lifestyles of the future by providing flexible internal layouts and allowing for cost-effective alterations. Housing should be able to respond to changing social, technological and economic conditions.

The main consideration is adaptability. For houses, the design could accommodate a downstairs toilet, wider doorways, level entrances and allow for a lift or stair lift to be fitted in the future. The potential to extend back or upwards, or to open up between rooms to allow open-plan living, is valuable, as is garden space and the space to allow a conservatory to be added.

With this in mind we would incorporate design features including;

- Good and level access at front door, with a canopy.
- A spacious hallway, and corridor.
- A kitchen with good access around the units, without tight spots for turning a wheel chair.
- A variety of heights of kitchen units to allow seated food preparation, and the ability to sit in the kitchens in a wheel chair.
- Good and level access throughout the property without the need for ramps or lifts, for all users.
- Long-term flexibility and future proofing (able to accommodate changing lifestyle demands) of a home.
- Generous sized bathrooms allowing full access for either bathing children, assisting people with restricted movement or enabling the fitting of handrails.
- Long-term flexibility and future proofing (able to accommodate changing lifestyle demands) of a

home.

- Under floor heating throughout the property will enable good and even heating, and avoid “hot” radiators.
- Integration of study/office space, along with good telecommunications will allow the home to function as a workplace.
- The garden design features raised beds, enabling people with reduced movement to look after the planting.



## 13.4 Code Assessment

The Code for Sustainable Homes

The Code for Sustainable homes reviews dwellings on a number of categories; the points attained on each of these categories combines to form the Code Level. Credits are awarded on achieving all performance requirements for an issue.

To achieve a code level a development must achieve a set of mandatory issues and a minimum overall score, these are;

- a) Environmental Impacts of Materials (Mat 1)
- b) Surface Water Run-off (Sur 1)
- c) Storage of Non-recyclable and Recyclable Household Waste (Was 1)
- d) Construction Site Waste Management (Was 2)

Once the mandatory standards have been satisfied developers and designers can chose tradable credits The primary categories are as follows, each category is then divided into a number of issues.

- 1) Energy & CO2 Emissions
- 2) Water usage
- 3) Materials
- 4) Surface water run off
- 5) Waste
- 6) Pollution
- 7) Health and well-being
- 8) Management
- 9) Ecology

Mark Percival from architecture:m has undergone Code for Sustainable Homes training and will soon be a qualified assessor, for this reason we feel that architecture:m are suited to appraise and comment on the approved and proposed dwelling.

Unlike other practices the design and the assessment of projects is done by the same architect, allowing a more holistic approach to the company.

Review of the mandatory issues

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Planning Application for a new dwelling at Lakeside View, Penistone

## 13.4 Code Assessment

### The Code for Sustainable Homes

Environmental Impacts of Materials, linked to the Materials Category

Credits are awarded for using materials, which have a low environmental impact over their life cycle. The unsustainable sourcing and transportation of construction materials is resulting in serious environmental damage. To gain credits a minimum of three elements of the building envelope must achieve a Green Guide rating of between A+ and D.

Not all materials have been specified to the proposal, but the entirety of the primary structure of walls, floors and roof is to be constructed from an Amvic ICF system which achieves an A+ rating in the Green guide. We would also look to use similarly rated materials in other areas of the construction to achieve the maximum 3 credits.

Surface Water Run-off, linked to the Surface Water Run-Off Category

Credits are awarded for developments, which avoid, reduce and delay the discharge of rainfall to public sewers and watercourses – thus reducing the risk of flooding and other environmental damage. Around 5 million people, in 2 million properties, now live in flood risk areas in England and Wales.

Much of the site is remaining untouched and therefore able to absorb surface water. The extent of the roof areas will be a single ply membrane, will drain rainwater off the roof quickly with a minimal loss, allowing us to maximise the rain water collected for the large garden.

In a similar way we will be only specifying permeable hard landscaping, such as the resin bound 'Sureset crushed rock' paving to the car parking areas and the 'Marshalls Piora' permeable block paving to the hard landscaped areas.

Storage of Non-recyclable and Recyclable Household Waste, linked to the Waste Category

Credits are awarded for the provision of internal and external storage space for recyclable and non-recyclable household waste. Storage must be adequate and accessible. Credits can also be awarded where there is provision of a local authority recycling scheme – or combinations of the above.

We are looking to provide space for at least four external bins, these being; General and food waste, Glass, Plastic, Paper products. There will be similar bins within the kitchen of the house, allowing waste to be transferred regularly and conveniently. The garage will also contain storage for occasional waste such as Wood, Metals, Textiles, Batteries and Waste electronic equipment. Separately we will also be providing a position for the composting of garden waste, drastically reducing the quantity of green waste leaving the site, whilst providing planting material for the continued landscape management strategy. This will ensure maximum credits within this issue.

Construction site waste management, linked to the Waste Category

Credits are awarded for managing and reducing construction waste through the use of a Site Waste Management Plan. Site Waste Management Plans monitor and record construction site waste groups, in order to reduce and recycle construction waste, and divert waste from landfill.

Further information will be provided on this when further information relating to the construction materials is available in the Post Construction Stage.

Review of the categories

#### 1 Energy & CO2 Emissions

The proposed building has been designed with these issues in mind and can attain a large number

of credits to aid the Level 6 status.

- 1.1 Dwelling emission rate (mandatory) – this will be completed at a later date, once all materials are finalized. We are aiming to achieve a high amount or maximum level of credits. [10 credits available]
- 1.2 Building fabric energy efficiency– The heat loss parameter has not been calculated, but given the high u-values we are looking to achieve and monolithic construction. We expect to achieve maximum credits [9] or a high amount of credits here.
- 1.3 Energy Display Devices - The systems installed will use the latest technology to display energy usage throughout the house achieving the maximum 2 credits.
- 1.4 Drying space – A clothes drying space of 6m+ will be provided adjacent to the house to reduce energy means of drying clothes and achieve 1 credit.
- 1.5 Energy labelled white goods – All new white goods to be A+ rated under energy efficiency labelling scheme, washing machines and dryers to achieve at least a B rating to achieve an overall credit of 2.
- 1.6 External lighting – All common lighting to external spaces to be energy efficient, all security lighting to have movement detectors and daylight cut-off sensors to achieve 2 credits.
- 1.7 Low or Zero Carbon Technologies – Further information to follow, but we aim to install energy efficient systems that will achieve at least 15% of the total energy demand - achieving 2 credits
- 1.8 Cycles storage – Storage for bicycles in a lockable and accessible location to achieve 2 points.
- 1.9 Home office – Specific location for home office to be in separate room adjacent to Master bedroom to achieve 1 credit.

#### 2 Water usage

We will look to achieve maximum credits for Code level 6 status, this is achieved through:

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## 13.4 Code Assessment

### The Code for Sustainable Homes

- 2.1 Indoor water use – to achieve a Level 6 status, the water consumption will be limited to no more than 80 litres per day per person for the household - 5 credits.
- 2.2 External water use – To encourage the recycling of rainwater and reduce the amount of mains potable water, we will be looking to install a rainwater butt, which will be used to water all planting which is not part of the soft landscaping, provide 1 credit.
- 3 Materials
  - 3.1 Environmental impact of materials – this is a mandatory field as discussed above. As we are using new and innovative environmentally friendly materials we expect to achieve a large number of credits on this aspect when all of the materials are finalised. [maximum 15 credits available]
  - 3.2 Responsible sourcing of building materials – Further information to follow, we will be looking for all materials to be responsibly sourced to attain maximum credits. [maximum 6 credits available]
  - 3.3 Responsible sourcing of finishing materials – Further information to follow, we will be looking for all materials to be responsibly sourced to attain maximum credits. [maximum 3 credits available]
- 4 Surface water run off
  - 4.1 Management of surface water run-off from developments - As discussed previously in the document we are recycling the rain water in an efficient system - achieving 2 credits.
  - 4.2 Flood Risk - The use of tanks within the scheme help reduce the risk of flooding at the rain water will be recycled and stored in these tanks achieving 2 credits.
- 5 Waste – this is a mandatory field as discussed. We aim to achieve the full 8 credits.
- 6 Pollution – further information to follow pending specification of insulates.
- 7 Health and wellbeing  
This is an essential subject, which affects the daily life of the buildings occupants, we have evolved the approved scheme to cater for these areas, to ensure that the occupants receive maximum daylight levels, sensible living conditions and can live in a space that is adaptable for future needs.
  - 7.1 Daylight – maximum credits of 3 available for daylight ratio to kitchen and living rooms. Kitchen designed to receive direct daylight onto worktop.
  - 7.2 Sound insulation – Looking to achieve a substantial increase on the standards given in the Approved Document E – this is a detached semi submerged dwelling, constructed from monolithic concrete, there should be no issues in achieving a maximum 4 credits.
  - 7.3 Private space – a number of secluded outside spaces will be provided, accessible only to the buildings occupants, achieving the accreditation achieving 1 credit.
  - 7.4 Lifetime homes – The dwelling has been designed with large internal spaces, with level thresholds etc, the internal spaces can be easily adapted to cater for any future needs of the occupants, the points of the lifetime homes criteria will be reviewed further to ensure that all points are addressed achieving 4 credits.
- 8 Management
  - 8.1 Home user guide – this will be compiled upon completion of the post-construction stage, when all aspects of the building are installed.
  - 8.2 Considerate constructor scheme – a minimum of Best Practice will be adhered to, although we will clearly indicate our keenness of contractors that go beyond those principles.
  - 8.3 Construction site impacts – further information to follow
- 8.4 Security – An ALO has not consulted on this scheme, the office has had numerous seminars on the principles of crime prevention and security by design, and instigate this philosophy into the designs.
- 9 Ecology –
  - 9.1 Ecological value of site - Any land of ecological value outside the construction zone but within the development site will remain undisturbed by the construction works - achieving a maximum 1 credit.
  - 9.2 Ecological enhancement - The proper integration, design and maintenance of SUDS and green roofs will be installed.
  - 9.3 Protection of ecological features - All existing features of ecological value on the development site potentially affected by the works are maintained and adequately protected during site clearance, preparation and construction works.
  - 9.4 Change in ecological value of the site - this will be completed at a later date. We are aiming to achieve a high amount of the 4 credits available here as a vineyard is incorporated into the design.
  - 9.5 Building footprint - The net internal floor area: net internal ground floor area ratio is greater than or equal to 3:1. This achieves the maximum 2 credits.

### Conclusion

From reviewing the above categories we believe that the proposed scheme will achieve at least a Code Level 6 status. Through understanding the Code level categories, we have been able to develop the scheme into a building that is efficient to construct by capable contractors who follow best practice principles. We look to use locally sourced durable materials that are highly efficient and impact as little as possible on the environment. This approach encompasses the very basics of developing the most thermally efficient wall architecture:m

## 13.4 Code Assessment

The Code for Sustainable Homes

construction, to the specification of energy efficient lighting and use of renewable.

As well as looking at limiting the buildings impact on the environment, we have considered how the building will impact on its users, developing the scheme where required to make the spaces as usable and adaptable for future needs as possible. This idea encompasses everything from providing a space for the drying of clothes, specifying a quiet area for use as a home office, or locating the bins in the house so that they actually get used properly. Through considering the categories and acknowledging the issues, we understand that if the building is designed correctly, then constructed properly, that the occupants can live in the property appropriately, and this makes for an efficient, sustainable and healthy future for the building and the greater environment which merits the Code for Sustainable Homes Level 6 status.

## 13.5 Construction

We are proposing using insulating concrete form work (ICF) for the sub and superstructure as it is an innovative modern method of construction, which combines the inherent strength of concrete with the excellent thermal insulation properties of polystyrene to produce cost-effective and durable structures. The polystyrene is used as permanent form work for the concrete and is available in a variety of configurations and a number of proprietary systems.

The basic structure is typically erected by a team of three or four site operatives and filled by pumping a very workable concrete in storey-height lifts. In addition to providing a strong structure, the concrete provides excellent sound insulation, fire resistance and the ability for thermal capacity.

The normal method of constructing load-bearing concrete elements is to place the concrete into temporary form work or moulds, which are then removed once the concrete has attained sufficient strength, which makes for a slow process that is wasteful on materials.

ICF develops this method further by using economic permanent insulating form work or systems to replace the conventional metal or wood-based materials and has become an established, mainstream method of construction in Germany, France, the USA and Canada, since its introduction in the 1960s.

This product is ideal for this location as it provides excellent U-values, of up to 0.2 W/m<sup>2</sup>k that are air tight and structurally very strong, reducing heating costs and waste of natural resources over time, leading to 'Passivhaus' standards.

Further to this, the house has been designed in accordance with the modules of the form work meaning that there will be little to no waste of

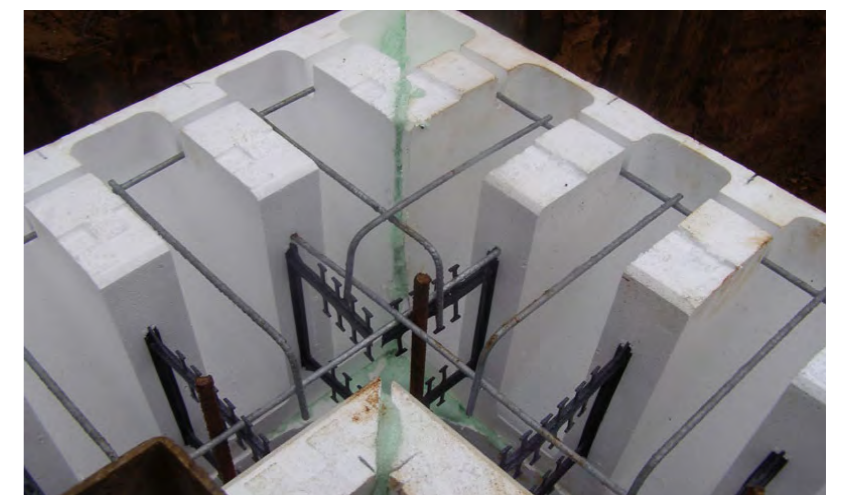
materials on site.

Highly efficient double glazed windows; we are intending on using low-e argon filled window units throughout the property. These units use the thermal and acoustic insulating properties of a gas contained in the space formed by the unit and provide good insulation without sacrificing transparency. Low-Emissivity Glass has a thin coating, often of metal, within its airspace that reflects thermal radiation or inhibits its emission reducing heat transfer through the glass. A basic low-e coating allows solar radiation to pass through into a room. Thus, the coating helps to reduce heat loss but allows the room to be warmed by direct sunshine. With the use of spacers between lites and thermal breaks between frames it is realistic to achieve a U-value of 1.3 W/m<sup>2</sup>k for units, which is much improved than regular double glazed units.

Whole house ventilation; increasing demands for energy conservation have led to more efficient insulation, with the virtual elimination of draughts and 'natural' ventilation in modern buildings. Whilst providing major economic and environmental benefits, these improvements have highlighted the importance of ventilation in providing a healthy living environment. Inadequate ventilation leads to problems of condensation and, in extreme cases, to damp and mould growth as the result of normal living activities such as cooking, washing and showers.

In order to provide a healthier and more comfortable living environment free from the problems of condensation and air borne pollutants, it is necessary to balance three factors: heating, insulation and ventilation. The ideal is therefore to provide adequate ventilation in an energy efficient manner. Mechanically Assisted Ventilation Systems eliminate many of the disadvantages associated with traditional methods of ventilating buildings. Designed to ventilate the

whole dwelling and not just individual rooms, MAVS is unobtrusive, does not cause draughts and is energy efficient. Passive Stack Ventilation employs natural air movement within a dwelling and the induced pressure differences caused by air flow over roof terminals, eliminating or reducing the need for moving components.



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Planning Application for a new dwelling at Lakeside View, Penistone

## 13.6 Uniqueness & Innovation

The building will be unique to the area, featuring innovation in both its design and construction. The building will use Insulated Concrete Formwork to form curving organic walls, with an undulating grass roof, and be clad in both natural dry wall stoning, and in sculpted stone.

It will be set into the hillside, merge with the natural landscape, and make the most of panoramic views over the rural countryside. Passively heated by the sun, with supplementary heating being provided by a ground source heat pump, the building will be innovative in its environmental operation.

Because of its architectural aspirations, the proposed building will become a research project for the Manchester School of Architecture. Student learning will be encouraged through involvement in the scheme.

## 13.7 Unique Construction

Amvic Building Solutions Ltd have been commissioned by architecture:m to produce a construction design for the proposed dwelling at Lakeside View, Penistone.

The Amvic Insulated Concrete Forms offer a building solution which can reduce design challenges and greatly improve the build quality of structures.

Amvic Building Solutions have been involved in many contemporary construction projects, however, we feel that the architectural design of the proposed dwelling poses numerous challenges for the Amvic ICF system. The inclusion of slender wall sections and piers in combination with the concrete roof structure's mass, long spans and cantilevered design, requires an innovative structural design solution for the Amvic ICF system.

Amvic ICFs have superior engineered spanning capabilities, making them ideal for long insulated window and door lintels, as well as for structural beam applications. They are also extremely flexible in design making square, plumb and straight walls easily obtainable. In addition, exterior and interior wall coverings are easily attached, dramatically improving a structure's appearance.

Amvic ICF structures combine expanded polystyrene (EPS) insulation and concrete thermal mass. This highly effective combination of materials minimises temperature fluctuations by absorbing and storing heat. This equates to an average of approximately 30-50% reduction in energy consumption for heating and cooling which results in an equivalent reduction in harmful emissions.

Amvic building solutions have developed this project alongside architecture:m to ensure this unique building can be constructed reliably as this design is pushing the boundaries of technical experience concerning ICF and reinforced concrete construction on a domestic project.

Barry Gunson  
Director

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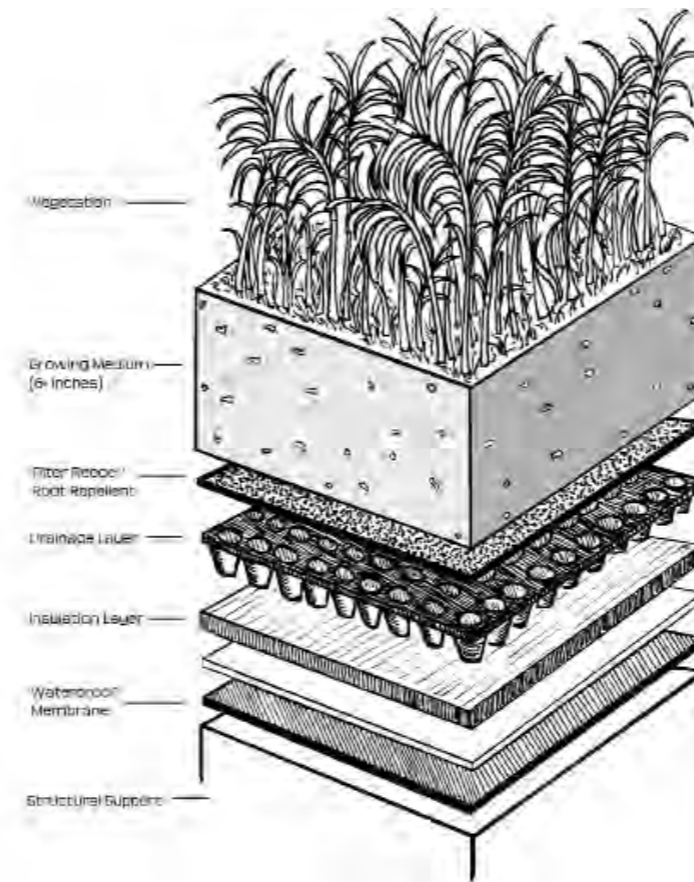
**Amvic Building Solutions Ltd** Amvic House Unit 5 Linfit Court Colliers Way Clayton West Huddersfield HD8 9WL **Tel & Fax 0800 756 6399** **Web:** [www.amvicbuild.com](http://www.amvicbuild.com)

## 13.8 Grass Roof

The grass roof of the building will be intensively planted, with a substantial growing medium that will support a range of planting. Initially to be planted with grass, the roof will support the spread of local wildflowers, becoming integrated with the surrounding countryside over time. This will minimise the visual impact of the building on the surrounding area, with grasses and herb species such as Yorkshire Fog, Creeping Bent, Cock's Foot and Red Clover, included in the grass roof planting strategy.

A grass mix containing the following is proposed:

- *Achillea millefolium* (Yarrow)
- *Calluna vulgaris* (Heather)
- *Campanula rotundifolia* (Harebell)
- *Conopodium majus* (Pignut)
- *Galium verum* Lady's (Bedstraw)
- *Lotus corniculatus* (Birdsfoot Trefoil)
- *Plantago lanceolata* (Ribwort Plantain)
- *Prunella vulgaris* (Self Heal)
- *Ranunculus acris* (Meadow Buttercup)
- *Ranunculus repens* (Creeping Buttercup)
- *Sanguisorba minor* (Salad Burnett)
- *Stachys betonica* (Betony)
- *Agrostis capillaries* (Common Bent Grass)
- *Cynosurus cristatus* (Crested Dogstail Grass)
- *Deschampsia caespitosa* (Tufted Hair-Grass)
- *Festuca ovina* (Sheeps Fescue)
- *Festuca rubra ssp litoralis* (Slender Creeping Red Fescue)
- *Poa pratensis* (Smooth-Stalked Meadow Grass)



# 13.9 Construction Cross Section

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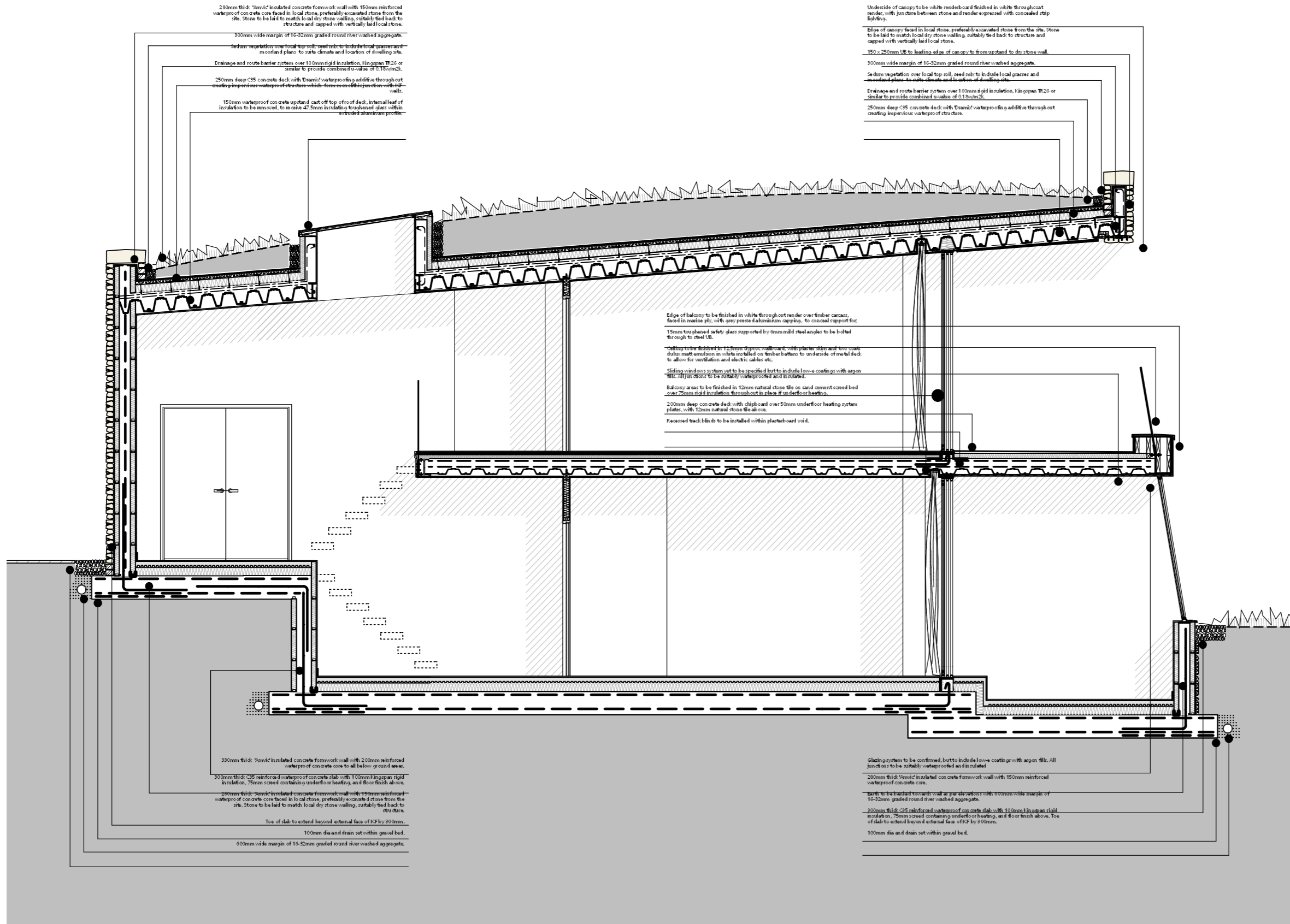
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Do not scale from this drawing or derive dimensions from digital media.

All dimensions are to be checked prior to works commencing on site.

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 S: Survey  
 F: Feasibility  
 P: Planning  
 D: Detailed Detail  
 T: Tender  
 C: Construction  
 B: As Built

Rev:      Date:      By:      Note:



architecture:m

RIBA Chartered Practice

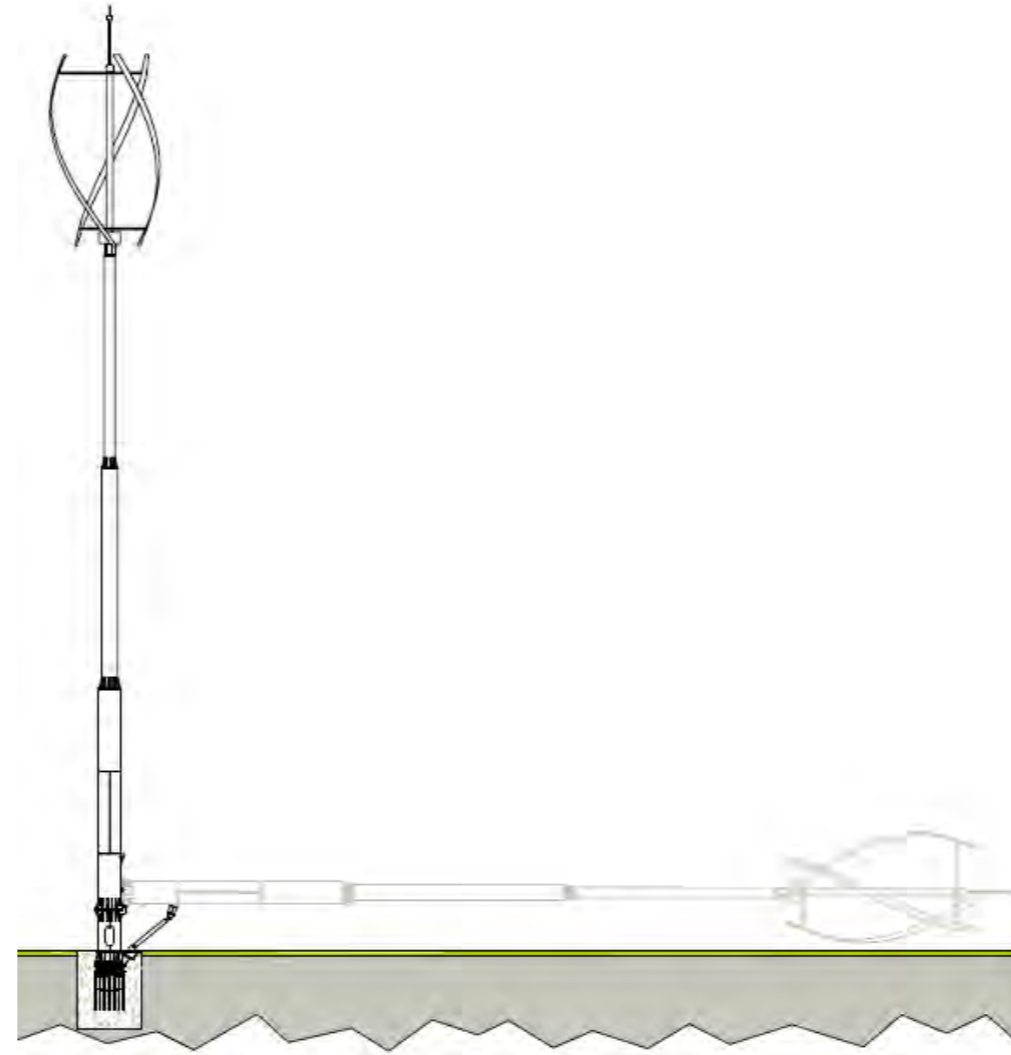
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 f: +44 [0] 161 236 7448  
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Lakeside View  
 Technical Section

d: 07.09.11  
 s: 1:50@a3  
 db: BTGR

n: project: drawing: status: rev:  
 267.401.P.

## 13.10 Wind Turbine



To ensure that we can create a Code Level 6 Property, we look to use a wind turbine

The **qr5** is a vertical axis wind turbine, designed specifically for environments in close proximity to people and their homes. The benefits over horizontal axis turbines include:

- A more appropriate design for capturing wind resources near and around buildings, characterised by gusty wind speeds and constantly shifting wind direction.
- Reduced noise from lower blade tip speed.
- Easy integration upon buildings and towers.
- Use of gust tracking to maximise power harnessed from the wind.

# 13.11 External Materials Appearance



Intensive green roof



grey aluminium frames

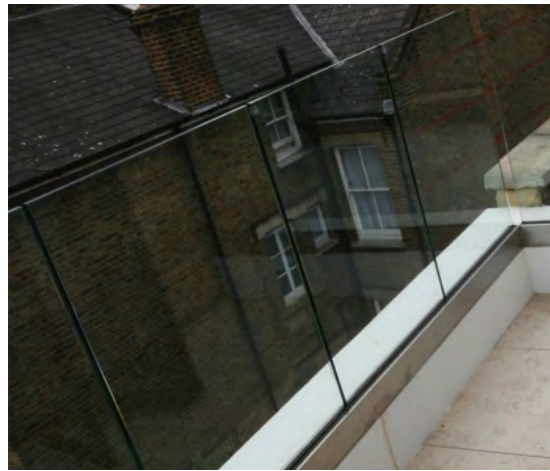


dry stone walling/sandstone cladding

Where possible we aim to use local materials, both organic and inorganic to reduce travel distances and emissions.

When we cannot use local materials, we will make sure that the materials will have a long life span and will be as sustainable as possible.

We are aiming to use a simple pallet of materials which will compliment each other and the context in a contemporary way.



structural glass balustrades

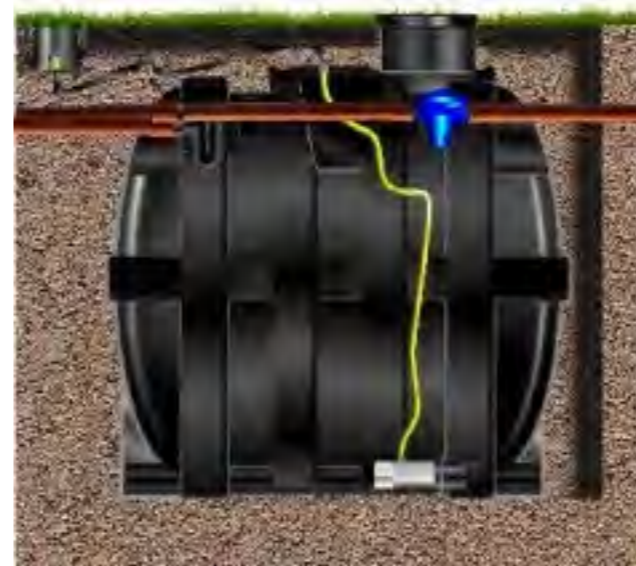


translucent glazing



opaque glazing

## 13.12 Rain Harvesting

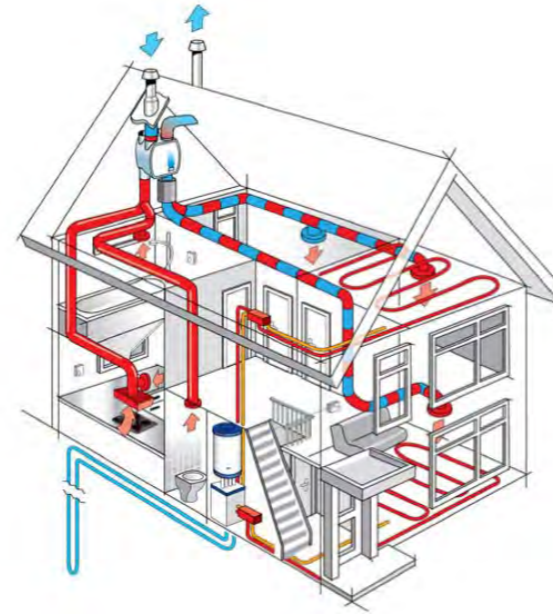


One of the most effective ways of reducing potable water consumption is by using a Rainwater Re-cycling or "Harvesting" system. By storing and then utilising rainwater which drains from the new property via surface areas, we can effectively store rainwater in quantity.

The system is sited outside the property below ground. Once the rainwater from the surface fills the tank, then the system is ready to be used. Water is supplied via a pumped system which terminates in a hose fitting for easy connection to a hose.

In all systems the roof water or surface water is filtered before entering the storage tank. The underground system features overflows that will skim off surface pollen and algae to the main septic tank. This stops solids back flow and prevents vermin entering the tank from the outlet sewer.

## 13.13 Heating and Energy

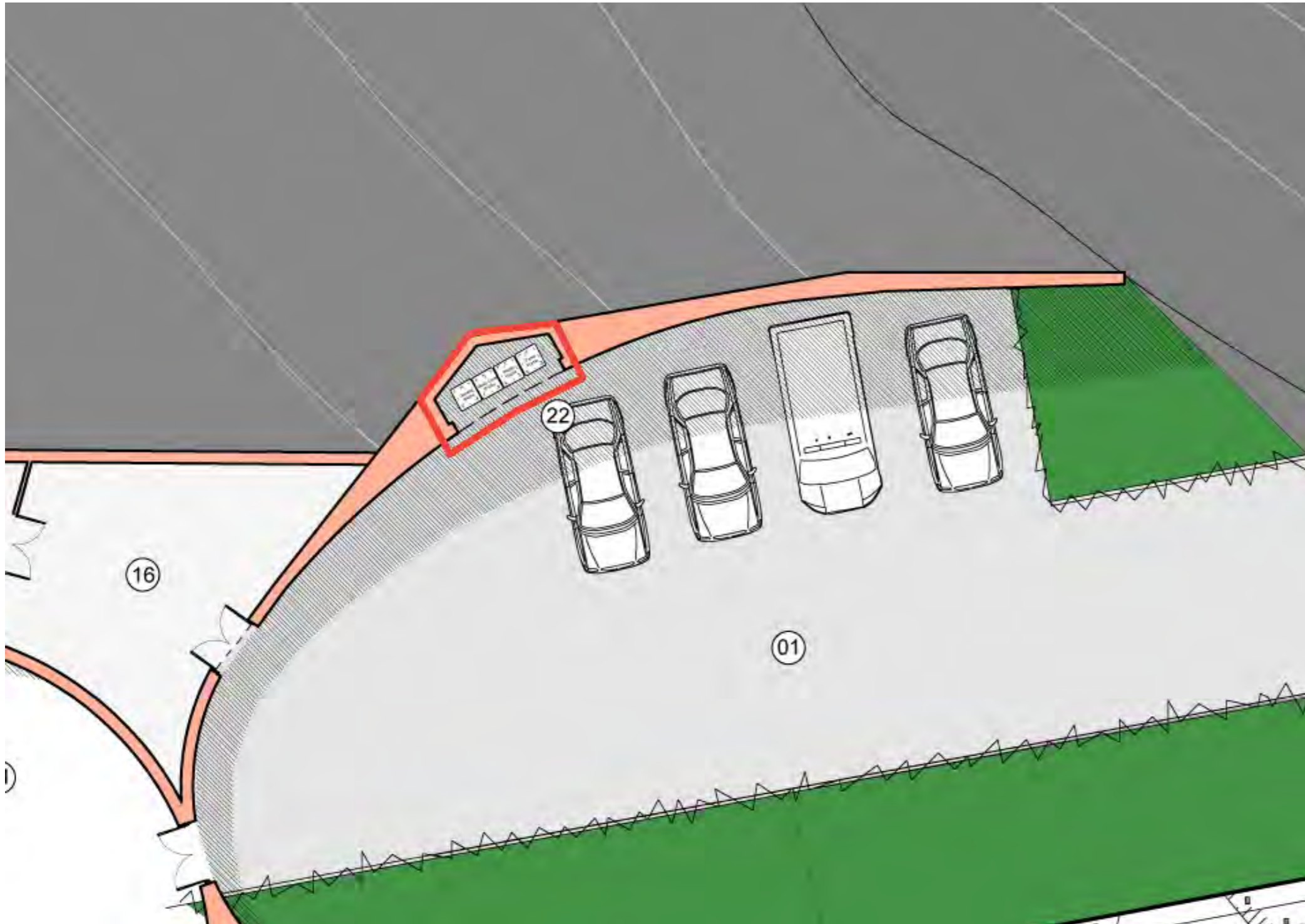


Heat recovery systems are an energy recovery ventilation system, using equipment known as an air-to-air exchanger, that employs a counter-flow heat exchanger between the inbound and outbound air flow. This provides fresh air and improved climate control, while also saving energy by reducing the heating (or cooling) requirements. As building efficiency is improved with insulation and weather-stripping, buildings are intentionally made more air-tight, and consequently less well ventilated. Since all buildings require a source of fresh air, the need for HRVs has become obvious.



Air source heat pumps use outside air as a heat source or heat sink. A compressor, condenser and refrigerant system is used to absorb heat at one place and release it at another. Outside air, being above absolute zero, is a heat container. An air-source heat pump moves, or 'pumps' some of this heat to provide hot water or household heating. This can be done in either direction, to cool or heat. The main components of an air-source heat pump are a heat exchanger, over which outside air is blown, to extract the heat from the air compressor, which acts like a refrigerator but in reverse and raises the temperature from the outside air a way to transfer the heat into a hot water tank or heating system, such as radiators or under-floor heating tubes.

## 13.14 Waste Management



Nearly two-thirds of all household rubbish can be recycled, saving energy and avoiding waste going to landfill. Taking action on waste is essential. We consume natural resources at an unsustainable rate and contribute unnecessarily to climate change. Each year we generate about 100 million tonnes of waste from households, commerce and industry.

Most of this ends up in landfill, where biodegradable waste generates methane, a powerful greenhouse gas. And much valuable energy is used up in making new products which are later disposed of, also contributing to climate change.

In line with Defra's Guidance for Waste Collection Authorities on the Household Waste Recycling Act 2003 we will be providing four permanent bins for our client to recycle the following forms of waste;

- 1 General and food waste
- 2 Glass
- 3 Plastic
- 4 Paper products

The bins will be positioned by the garage adjacent the property to provide straight forward access to the council waste collection service.

Due to their infrequent volumes, our clients will recycle the following forms of waste as and when required;

- 5 Garden waste
- 6 Wood
- 7 Metals
- 8 Textiles and shoes
- 9 Batteries
- 10 Waste electronic equipment

# 14.0 Design Team Overview for the House

## 14.1 About the Architect



Architecture:m is an established, dynamic and creative architectural studio with a proven track record of high quality architectural projects. Innovative, aspirational design, with a simple aesthetic, underpins the studio's design ethos, and is evident in our built works.

Central to our approach is the relationship we develop with our clients. From the planning stage onwards, understanding their wishes and needs is paramount. Through open, honest dialogue, and a process of design and redesign, we arrive at a solution together. Dialogue with planners is equally important. Throughout all of our projects communicating the proposals, working out solutions that meet local needs, has ensured the delivery of schemes that realise the clients' vision while responding to their context.

As a chartered architectural practice established over ten years ago, with experience designing private houses, commercial, leisure, retail, and other mixed use projects, the practice has cultivated strong relationships with contractors, engineers, and other consultants throughout the country. Such relationships ensure that we can deliver projects efficiently from our home in Manchester, to Folkestone and Inverness alike. Our team is multi-talented, and our aspiration for high quality architecture runs throughout all aspects of our work, from our detail design, model-making, 3D modelling, interior design, masterplanning, and in the management of the project on site itself.

Sustainability, protecting our natural resources and considering the effect of construction on the environment is a priority. We recognise this responsibility and strive to reduce the environmental impact of our work. We are registered with the Green Register and are a Certified Code for Sustainable Homes Assessor, which allows us to both assess and design the construction of high performance sustainable architecture.

The practice has a good understanding of conservation

architecture:m

Planning Application for a new dwelling at Lakeside View, Penistone





# 14.2 About the Engineer

STL Projects Ltd was established in 2010 by Jonathan Hayes, a Chartered Structural Engineer who has over 20 years experience in the Construction Industry. Their expertise is in the appraisal and design of low rise structures of all types of building materials. It is for this reason that we have brought STL on board as they are able to realise stunning homes of all styles and designs. We have worked closely with Jonathan on numerous successful projects and we have the knowledge that together we can deliver a successful project.

