

SUSTAINABILITY STATEMENT

Hodder Grange

Chipping Road, Chaigley, Clitheroe, Lancashire, BB7 3LS

Planning application for a new dwelling house under Paragraph 80

15 September 2021

*Hodder Grange will be **the first classically designed Passivhaus Plus property in the world**. The first Passivhaus Plus New Build property in the north-west, and a 'True' Zero Energy / Zero Carbon House. This exemplary home will employ a petrochemical-free building fabric and concrete free foundations setting a new low carbon standard for the rural built environment.*



This document is a statement in support of an application for planning permission for the above development. It contains the Sustainability Statement and has been prepared by Ecospheric Ltd (Architecture, Engineering and Sustainability), on behalf of the applicant Michael and Liz Bell of Manor Farm, Hodder Bridge.

About Ecospheric

Ecospheric focus on pioneering eco developments that save carbon and drive technological change. It's not only what excites us, but also offers valuable case studies to progress the field of sustainable construction. Over the last decade we have helped hundreds of home and business owners form holistic renovation and development plans collapsing running costs, whilst improving the comfort and health of their internal environment. Today, our team and expertise has grown to include our own experimental development firm, constructing true pilot projects across all use classes of the built environment. This development leads to the creation of intellectual property which enables us to support architects and developers in delivering specialist sustainable projects, such as paragraph 80 applications and international award winning certified passive house projects. We work hard to keep at the cutting edge of sustainability in the built environment and our integrated approach creates fantastic environments to live and work for years to come.

Ecospheric has considerable experience specifically with Para 79 (now 80) applications having consulted on 13 para 55/79/80 projects with no refusals to date, and three projects built. Sitting on the other side of the table Ecospheric have also provided technical input on three para 55/79/80 county council cases, successfully defending planning and appeal refusals, one of which going to the high court for judgement. This experience places us uniquely to support the technical needs for projects at this level with the research networks and scientific backing to deliver true innovation across the country.

In our role as Passivhaus retrofit developer, Ecospheric has a reputation for pushing performance boundaries, having just completed the **world's highest retrofit performance standard** for the first time with a pair of Victorian townhouses which Passive House Plus magazine called the greenest retrofit ever and the international PassivHaus Institut of Germany awarded for excellence. Current development programs include what should be the World's First Zero Energy and Zero Waste Foodhall called the Sorting Office and the Zero Energy historic renovation of a grade II* listed manor house called Lymm Hall.



The Proposal

Sustainability in the built environment is a complex and wide ranging subject. Liable for more than 40% of the global carbon crisis, the built environment has a lot to answer for and is in desperate need of viable sustainable solutions. Second to the built environment comes agriculture taking a 30% slice of the carbon pie. This project offers a unique opportunity to deliver repeatable sustainable solutions, benefitting future generations of designers, landowners and farmers.

Very few projects truly attempt to embrace all aspects of sustainability. Hodder Grange will contribute to all areas of embodied and operational carbon, setting new standards for rural dwelling houses. Building performance, renewable generation, waste, transportation, biodiversity, occupancy health and water. This project will demonstrate truly outstanding and innovative sustainability principles, and will certify as such, with the world's highest certification standard, PassivHaus. This standard has added a certification layer to incorporate renewable energy generation called **PassivHaus Plus**, which Hodder Grange will achieve. In addition, this site will aim to deliver a **Zero Energy and Zero Carbon** performance not only for the main house but for the whole site including ancillary building. To our knowledge this has never been attempted on any project before anywhere in the world.

The design team wishes to reflect the highest standards in architecture and interiors, rooted deeply within local and classical building traditions incorporating core sustainability principles. The final product will be functional, healthy, low maintenance accommodation, capable of producing enough energy onsite to power all household and site needs, appliances, lighting, space heating/cooling, domestic hot water and ventilation resulting in over 100% reduced carbon footprint over an equivalent new build. True innovation will be necessary in order to deliver this ambitious goal, especially in a classically designed country house setting.

Building modelling and performance claims

The Passivhaus Planning Package (PHPP) is one of the most powerful and comprehensive building physics engines and calculation tools developed by the International **Passivhaus Institute of Germany**. The Passivhaus approach is an internationally recognised standard for the design and construction of low energy buildings and has been shown to have the smallest performance gap in reality of all building standards. The Passivhaus modelling software, Passivhaus Planning Package (PHPP), is the first step that Ecospheric takes with every building project, at any scale, to get a solid foundation for all future decisions. In preparation for the full planning application, Ecospheric has produced a comprehensive thermal analysis using PHPP to ensure that the proposed design and fabric specification is properly considered and the resulting performance specification can be **trusted**.

With the results attained the design team are confident we can deliver not only a **Zero Energy and Zero Carbon** Dwelling but also **PassivHaus Plus** Certification (the first PH plus new build in the North West and the first classically designed in the world at the time of writing). An exact definition for what is meant by 'Carbon Neutral' or 'Zero Carbon' and the like, is a constant source of debate. A strong argument put forward by [John Palmer of the Passivhaus Trust](#), clearly demonstrates why SAP based, BRE specified definitions clearly avoid the hard realities of 'True Zero Carbon'; avoiding large energy demands such as unregulated energy (any energy demands that do not fall under lighting, heating, hot water), ignoring elements such as, basic household appliances, cooking, spa/swimming pools and relies upon averaged climate datasets with many assumptions made to speed up the modelling. All this results in large performance gaps averaging 40% greater energy consumption in reality and in some cases over 200%, putting our national carbon targets at risk. Conversely PHPP has been shown to range between 0-10% performance gap, typically less than 5%.

For this project, the design team has taken the comprehensive approach to define scientifically which aspects of Energy and Carbon are included in order to create the most accurate embodied and operational carbon calculation. The following list covers all of the standards, certifications and claims that Hodder Grange intends to achieve in prioritised order of increasing difficulty, with associated definitions:

- **NZEB or Zero Energy** - UK Government approved SAP based definition accounting for predicted energy generated on site in kWh and predicted energy consumption in kWh performing a net calculation on a 1 for 1 basis i.e. building demand of 10,000kWh excluding unregulated energy and grid based energy



wastage offset by a predicted annual site energy generation of 10,000kWh, all based on a simplified thermal model (SAP). Note: this is not a certification and there is no official body tasked with overseeing the process of calculation, making the claim open to abuse.

- **Zero Carbon** - UK Government approved SAP based definition accounting for predicted CO₂e emissions associated with building offset against predicted carbon saved through installed onsite generation in kg CO₂e, a net calculation basis. This excludes unregulated energy and grid based energy wastage, and also does not account for the high carbon energy associated with the grid used to balance supply on demand on site. All based on a simplified thermal model (SAP). Note: this is not a certification and there is no official body tasked with overseeing the process of calculation.
- **PassivHaus Classic Certified** - Passivhaus is the most scientifically ratified, internationally recognised standard and is very much focused on performance. When it comes to the combined operational energy predictions of a building; considering the building services, thermal comfort, hygiene, and thermal bridging, it is unsurpassed. At a Classic certification level a certified PassivHaus will consume 90% less energy for space heating when compared to a typical new build. In real terms a classic passivhaus is closer to zero carbon than the SAP based definition.
- **'True' NZEB or Zero Energy** - As per the SAP definition of Zero Energy, only modelled using PHPP and including both unregulated energy and grid based inefficiencies.
- **PassivHaus Plus Certified** - As per Classic with a further reduction in energy consumption levels and combined with onsite renewable generation roughly comparable to a True Zero Energy performance standard. With the rigorous certification process the resultant buildings will have less than 10% performance gap against modelled expectations.
- **'True' Zero Carbon** - As per the SAP definition of Zero Carbon, only modelled using PHPP and including both unregulated energy, grid based inefficiencies and grid carbon factor for imported energy.
- **'True' Zero Carbon site** - As per 'True Zero Carbon', however includes the whole site demand. All external lighting and pumps, annex buildings, staff accommodation, workshops etc.

We believe so strongly in the strength of our claims, the depth of analysis so far and accuracy of the PHPP model that we would accept Ribble Valley applying a condition on this performance level.

In addition to the already exceptional number of claims and extreme depth of decarbonisation intended for Hodder Grange, the truly unique aspect of this project relates to the classical 'Country House Tradition' which the design embodies and adopts the latest in building technologies. True innovation will be necessary in order to deliver this ambitious goal in conservation of energy, energy generation and energy management. Hodder Grange will be one of, if not the most, sustainable houses built in the classically designed tradition, and an exemplar in how classical design can respond to the challenges of the 21st century.

These ambitions look to take the next steps for sustainability in a rural environment, a hybrid approach acting as an essential component for modern outstanding architectural design, perfectly aligned with the aims of Paragraph 80. A building designed in the 21st century cannot be considered truly outstanding without also being sustainable!

Comparison studies

In order to achieve the standards defined above, a deep dive into the available technologies and fabric options resulted in the production of six comparison studies looking at the following:

- **Initial Thermal and Energy Modelling** - A classical house form requires a great deal of analysis and optimisation. A long list of [passive design](#) considerations are modelled within PHPP to help refine the building's massing. In order to scope out possible claims, for the site energy generation potential is also assessed. This balances suitable areas for energy generation with visual impact, to maximise onsite renewables. Given the specifics of the site and scale/typology of building, an initial assessment of energy consumption and overheating is also necessary to ensure occupant comfort and degree of future climate resilience.
- **Further Passive Design** - Consideration given to passive lighting and shading solutions. Possible use of sun pipes and optic fibre for lighting and for external shading solutions such as Loggias. Verandas and suitable reveal depths.



- **Possible construction build-ups** - Full review of suitable fabric options, given considerations such as thermal performance, wall thickness, airtightness, ease of installation, cost, embodied carbon, aesthetics and compatibility with masonry exteriors.
- **Foundation and ground floor options** - Comparison of 20 different floor and foundation options, including an embodied carbon assessment and compatibility assessment when considering the preselected fabric.
- **Preliminary M&E selection assessment** - In order to further refine the embodied and operational carbon calculations an assessment of suitable M&E technologies and equipment was undertaken. This is an exercise typically left until RIBA stage 4, detailed design, but due to the performance standards aimed for with this project, this work was brought forward for greater confidence.
- **Renewable Energy Generation Potential** - Balancing the need for significant onsite energy generation with the subtlety and quality of design, required a comparison study of new PV tile technologies which allow for seamless, near invisible installation of renewable energy generation. Once the technology was selected detailed generation statistics could be produced and integrated in the PHPP model. This exercise also considered energy management options maximising the value of the onsite generation.

Summary of specific points of innovation

A classically designed '**True**' NZEB and Zero Energy Country House sets a new blueprint for the rural built environment. Whilst the truly innovative aspect of the project is the holistically selected plethora of technologies and strategies seamlessly integrated within the outstanding architecture, the following list outlines the major individual points of innovation currently proposed for the site:

- **World first** example of a **Passivhaus Plus** Certified classically designed country house
 - Lowest possible operational carbon footprint leading the industry in the low carbon transition
- To the best of our knowledge the **world's first** example of '**True**' **Zero Carbon Site** covering the carbon demands for all outbuildings and staff accommodation
 - Highlighting the true cost of carbon - Holistic design should incorporate all on-site built elements not just the main house,
- Hybridisation of **organic fabric** with a traditional **stone facade** achieving U-Values that surpass even Passive House performance levels.
 - Stone and brick buildings make for very durable solutions and are a key part of the heritage of buildings here in the UK. Hybridisation with modern low embodied carbon, high performance fabric types offer the best of both worlds.
- Completely **breathable** construction build-up, to be moisture **modelled** in industry leading 3D Dynamic moisture package, **WUFI**.
 - Essential for creating durable healthy buildings, breathability provides a resilience that results in a long standing high performance structure. A key ingredient for future solutions to the climate challenge.
- Building bulk fabric to be **completely petrochemical free** avoiding the environmental damage and health effects associated with oil based products.
 - The high environmental damage of extraction and processing of petrochemicals combined with the significant negative health impacts arising from incorporation within the built environment make this a vital piece of the puzzle for the future.
- **Concrete free foundations** - Adoption of foamed glass and limecrete raft detail assuming geotechnical survey allows.
 - Concrete represents 12% of total global carbon emissions, with a desperate need to find alternative solutions. Limecrete is often used in heritage buildings alongside the existing foundations, however this project intends to make this foundation format suitable for new build projects. This high thermal mass product will also assist with management of heat flows within the building, helping smooth out temperature fluctuations.

The Detail

In addition to the truly innovative aspects associated with Hodder Grange, the following list describes many of the other technologies and strategies employed to deliver combined extraordinary performance results.

Building Fabric and Energy Conservation Principles



- The energy use of the house is 18% lower than that of a Passivhaus Classic. Passivhaus limiting criteria is 15kWh/m²a for space heating, whereas this house is at **12.3 kWh/m²a**.
- Roof - The traditionally finished roof is to be constructed with I-Joist materials sourced with the lowest possible Cradle to Cradle environmental certification. The insulation upgrade will result in a U-value of 0.14 W/m²K or better, down from 0.16 W/m²K as specified by building regulations, a 12.5% improvement.
- Walls - The proposed hybrid JUWO Evolved SmartWall construction will take the U-value to 0.14 W/m²K down from 0.28 W/m²K as specified by building regulations, a 50% improvement.



- Floors - The bulk fabric of the slab is to be petrochemical free, constructed from limecrete and Glapor Foamed Glass, achieving a U-value of 0.15 W/m²K down from 0.22 W/m²K as specified by building regulations, a 32% improvement.
- The PHPP model shows the overheating frequency of 0%, where internal temperatures rise above 25°C, demonstrating this property's resilience to overheating, future proofing the project against climatic warming potential. Details can be found in the next section of this report.



- Windows and Doors - All glazed elements in the property will achieve between 0.63 and 0.8W/m²k, 65-50% better performance than building regulations requirement. Glazing units will be designed to maximise installation performance as well as for maximum authenticity.



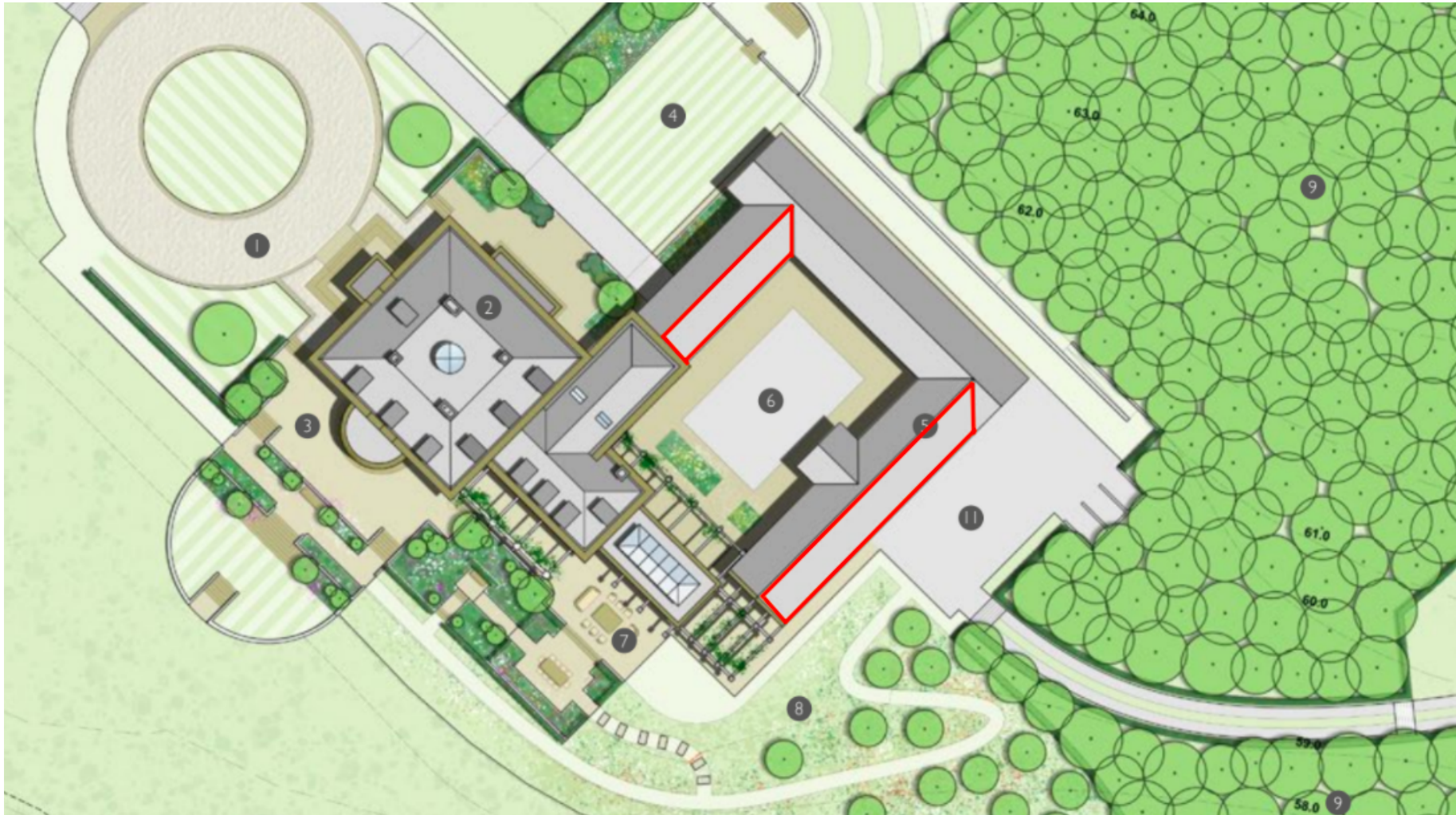
- A+ or better appliances throughout the site all designed to run from the onsite generated renewable energy.
- New LED Lighting throughout (with greater than 75lm/W efficiency)
- Thermographic identification of air leakage points throughout property, using longterm air tightness strategies applied in order to greatly improve the air tightness of the building to achieve the necessary PassivHaus performance standard of 0.6 ach, which is an extreme 94% improvement down from 10 m³/m²/hr as specified by building control.
- The design and orientation of the building aims to take advantage of passive solar gains in the colder months whilst resisting overheating potential through the adoption of solar shading through the adoption of specifically designed window reveals. The attached conservatory acts as a solar heated buffer zone to reduce heat loss from this area of the building. It is currently being considered as an air supply source for the ASHP in order to double the performance, however there are many technical hurdles around acoustics and space comfort that may prevent this approach. As such it has not been allowed for in the model to date. This approach would also be completely novel.



Renewable and Efficient Energy Generation

Holistically designed new Mechanical and Electrical (M&E) systems to include new renewably driven DHW (Domestic Hot Water) and space heating systems for all buildings. The following energy generation strategies and technologies are being employed:

- Export scale, Photovoltaic, site wide solution integrated across multiple buildings sized to cover all site energy demands. The primary array is to be sited on the SE facing roof of the gym and stables. A 99m² Solecco Solar Slate array, generating 14.5kW peak and a predicted annual 13,500kWh. The second roof mounted system is to be located on the SE roof of the courtyard buildings. A 52m² Solecco Solar Slate array, generating 7.8kW peak and a predicted annual 7,000kWh. Combined site generation of 20,500kWh more than covers the total projected annual site demand of 17,000kWh (including gym, external lighting, security etc).



- Neither array is visible from any publicly accessible area, nor the entrance to the estate. In addition rather than specify the typical large panel solution Solecco solar slates are to be specified, offering **unparalleled aesthetics**, blending into the slate roofs seamlessly.



- The combined renewable generation produces enough energy for the house to certify as a **Passivhaus Plus**. The scale of the total site energy generation is large enough to provide significant export potential which will work in combination with a PV energy divert system, acting as a site energy management solution, ensuring excess site generated energy is used to produce hot water via the ASHP. This more than covers all net space heating and DWH demands for the site with self generated energy. The site qualifies for true Net Zero Energy (Operational Energy) and Carbon with this level of generation.

Other mechanical device specifications are as follows:

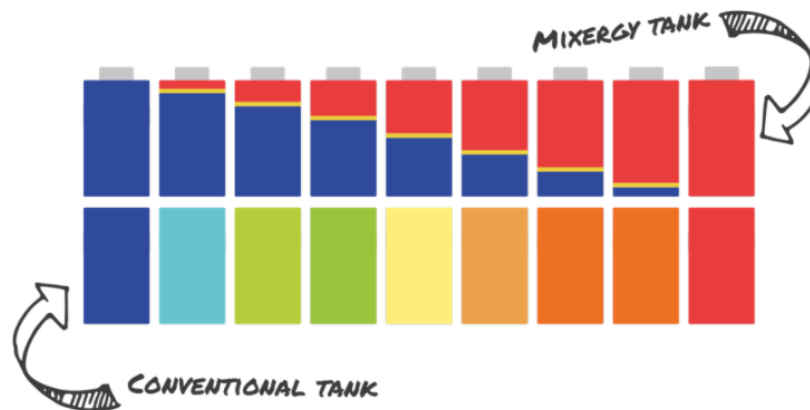
- An air source heat pump will provide the necessary domestic hot water and space heating for the main building. The combined peak space heating and DHW demand for the property is low at approx 5kW. The intention is to install a Mitsubishi Ecodan PUAH-WM112VAA with an average COP of 3 and a max output 11.2kW.
- It is located in a concealed location within a slatted container designed for minimal visual and acoustic impact, whilst optimised for pipe run minimisation.





- The unique plant room design proposed, aims to blend into a traditional utility whilst taking advantage of the waste heat from other plant/household equipment and draw it into the ventilation system for recovery and redistribution around the building.
- Hodder Grange also conforms to the PassivHaus limits for overheating, ensuring comfort for occupants both in the immediate term and with a future warming climate. For Passivhaus certification the frequency of overheating must be less than 10%. This is defined as the number of days per year that the internal temperature is predicted to exceed 25°C. This is still in excess of 1 month per year, so we try to target less than 5% after passive and active cooling strategies are applied. Orientation of the building, amount of glazing, shading and wall U-values have all been optimised.



- The **innate overheating** frequency for Hodder Grange is **7.0 %**, which is within PH set criteria. The following shows the impact of a future warming climate on overheating: +0.5°C = 10.7% = 39 days a year, +1°C = 14.9% = 55 days a year. These figures however do not account for manual purge and night time ventilation, With three small windows opened on either side of the building the overheating comes down to just 2.1%. With a small amount of night time ventilation overheating drops to 0%.
- To make absolutely sure that comfort is maintained at all times, in all rooms of the building delivering a **0% overheating chance**, in both the current and future climate conditions. a PassivHaus certified comfocool air tempering device is to be installed atop each of the MVHR devices. These are low energy components, helping to temper incoming air, guaranteeing comfort.
- New DHW purging technologies developed by Ecospheric and Mixergy enable Hodder Grange to adopt a truly low temperature distribution system maintaining hot water at just 45°C without any risk of Legionella. This allows for a single main hot water store to provide all the household DHW and space heating demands with two additional small 120l tanks to reduce hot water to tap times, without the need for energy intensive circulation loops, which can also lead to additional overheating in the summer. This greatly simplifies the plant set up and reduces future maintenance. Additionally the Mixergy tanks adopt a world first thermocline control, further halving the DHW standing losses through the careful management of the temperature profile of the stored hot water.



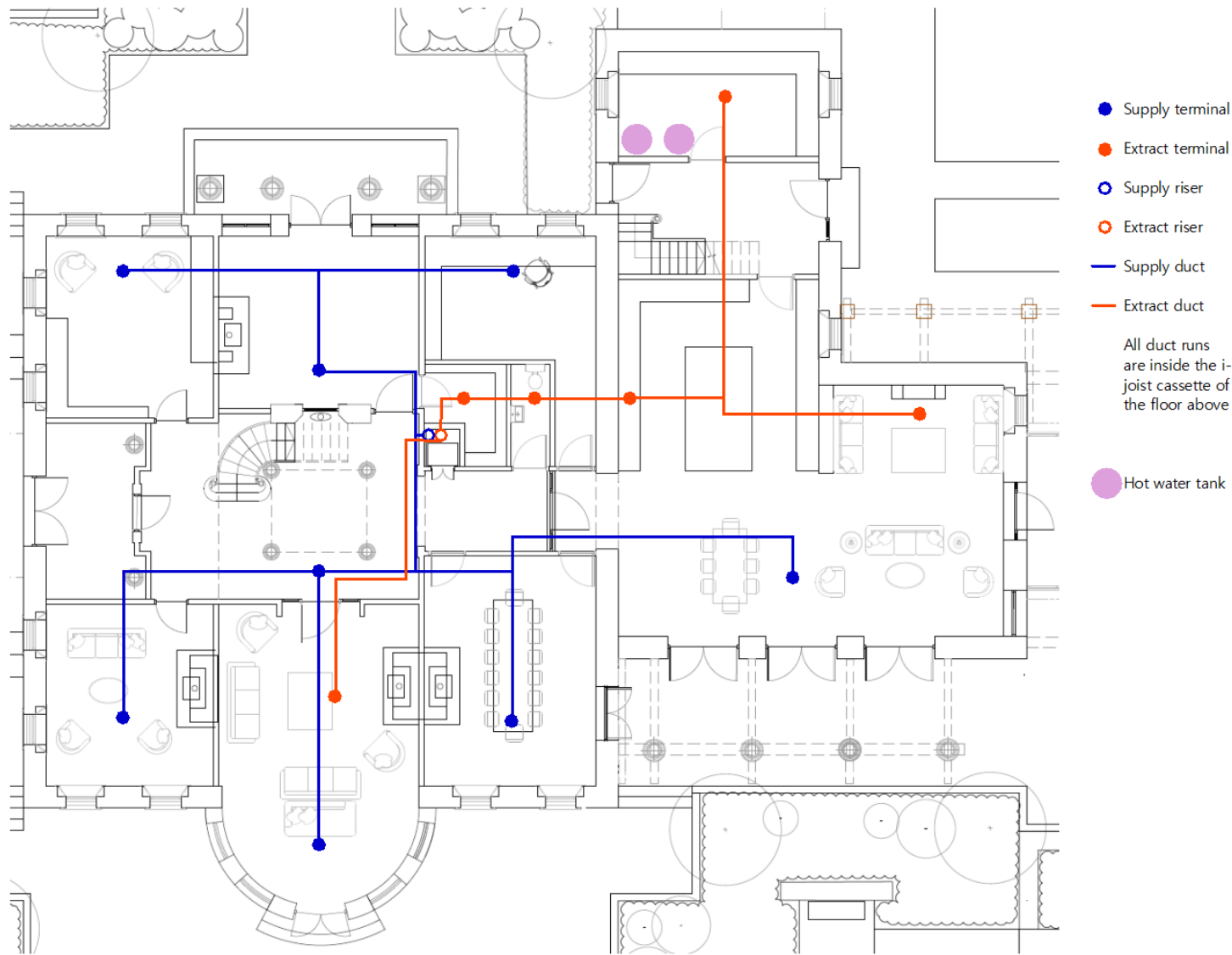
- Space heating for the property will be delivered using predominantly hydronic underfloor heating (UFH) offering the best mix for efficiency when coupled with the ASHP. Offering reduced cycling of the HP, outlay, maintenance, redundancy and comfort.
- Renewably driven heat recovery ventilation solutions are to be applied throughout the property to achieve a 80-96% heat recovery efficiency. This is the single biggest energy saving strategy alongside airtightness. The long term health of both the buildings and occupants depend upon this ventilation solution. Zehnder comfoair Q600 offers a nominal flow rate of 450m³/hr @ 70% output (optimal for cost, acoustics and specific fan power).

| Picture | Component name | Manufacturer | Country | Air flow range from... /m ³ /h | To... /m ³ /h | Heat re-cov-ery rate | Specific elec-tric power/Wh/m ³ > | Effi-ciency ratio | Hu-mid-ity re-cov-ery | Sound level of unit/dB(A) | Climate zones |
|-------------------------------------------------------------------------------------|------------------------------------------|---------------------------|---------|-------------------------------------------|--------------------------|----------------------|----------------------------------------------|-------------------|-----------------------|---------------------------|-----------------|
|  | ComfoAir Q350 HRV, Comfort Vent Q350 HRV | Zehnder Group Zwolle B.V. | NL | 70 | 270 | 90% | 0.24 | 0.73 | 0% | 43.0 | Cool, temperate |
|  | ComfoAir Q600 HRV, Comfort Vent Q600 HRV | Zehnder Group Zwolle B.V. | NL | 70 | 460 | 87% | 0.24 | 0.7 | 0% | 50.9 | Cool, temperate |

This sizing is to be confirmed, however a pair of these devices is suspected to cover what is required for the main house and staff accommodation and includes 18



supply points and 17 extract points, to conform to building regs. The following are indicative layouts showing M&E equipment positions and associated duct layouts.



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All duct runs
 are inside the i-
 joint cassette of
 the floor above

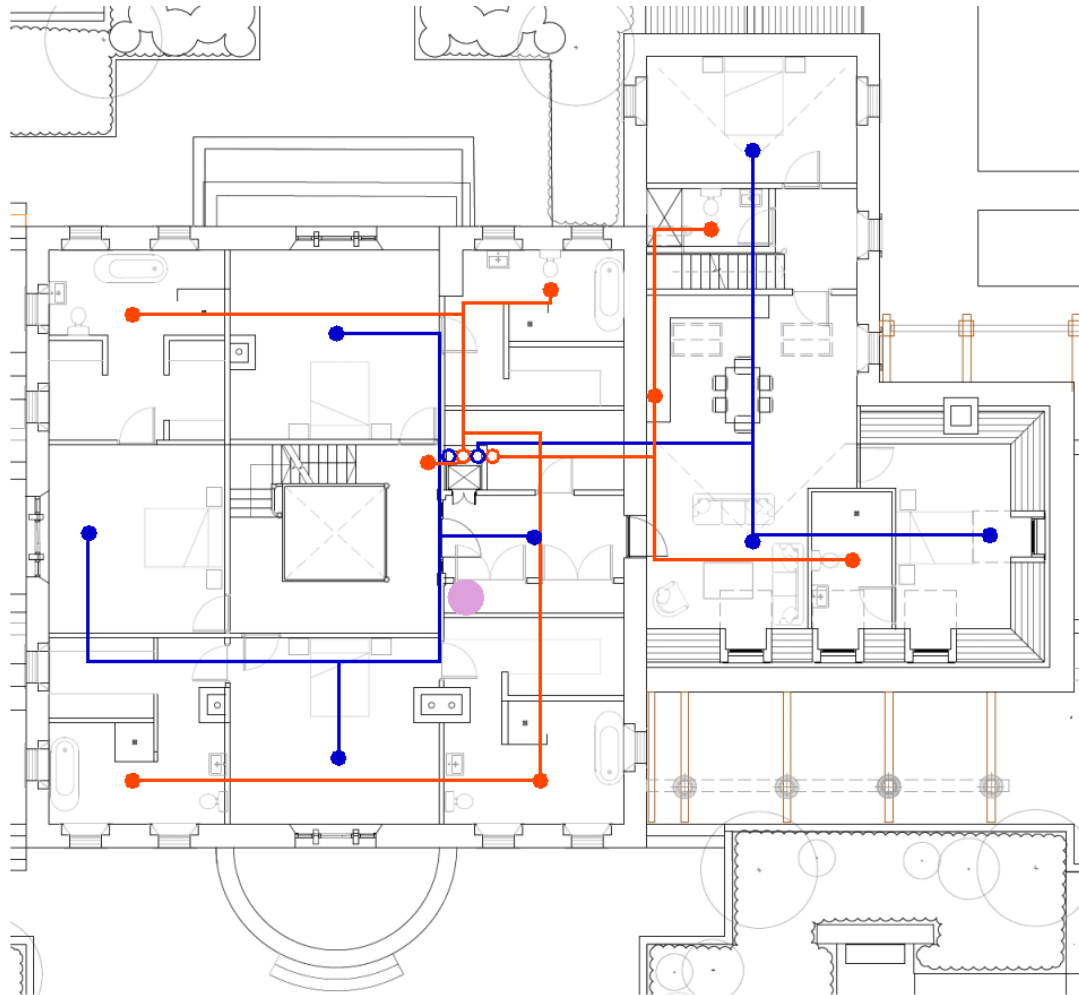
| Date | Rev. | Notes |
|----------|------|-------------------------------|
| Sep 2021 | 1 | Outline info for pre-planning |
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1.1 Ground Floor Plan

MVHR





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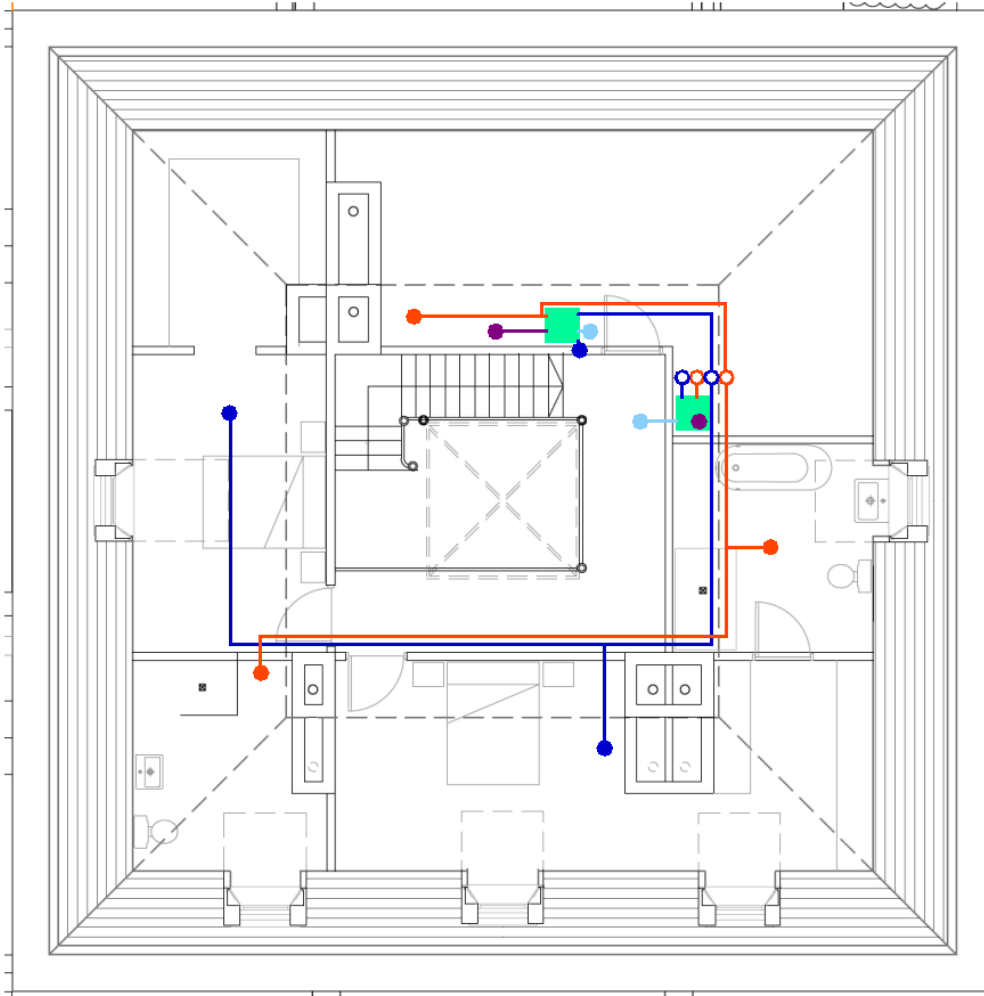
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2.1

First Floor Plan

MVHR





- MVHR unit
- Exhaust vent through roof
- Intake vent through roof



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3.1 **Second Floor Plan**

MVHR



Project Embodied Carbon

The materials intended for use on the project are natural, either organic (i.e wood fiber and blown cellulose) or mineral (i.e stone, slate, lime, foamed glass and magnesium board) and the main materials of construction will be completely petrochemical free. In general local sources for all building materials will be sought to greatly bring down the carbon footprint associated as well as contribute to the architectural vernacular.

Site Biodiversity

In conjunction with Rural solutions, we have managed an unbelievable biodiversity net gain across the new parkland, garden and approach to the house, significantly enhancing the immediate setting. Significant wider benefits for biodiversity net gain across the land holding are based upon proposed new woodland planting. This has been born from a developed, holistic, landscape led approach, in which the house and garden work in harmony with the wider estate, balancing food and energy production with water conservation, as well as restoring the natural balance of the land. Large-scale tree planting using native species and the enhancement of existing hedgerows and new watercourses will vastly enrich the ecology of the estate and in turn the wider environment. Extended and newly planted woodland managed under Continuous Cover Forestry offers the maximum biodiversity potential for the site. Transformation of part of the open field into parkland/woodland should see the direct sequestration of carbon and a newly introduced biome for the site.

Current national policy looks to 'Avoid areas at risk of flooding and is resilient and responsive to the impacts of climate change. As such Hodder Grange intends for all hard standing to have a SUDS solution specified, adopting SUDScape technology or similar. This solution will ensure full water penetration and percolation is designed in. This offers partial flood protection and more importantly in combination will protect the subground (up hill) sections of the property. Visually speaking, there will be minimum impact, and yet the parking requirements will be satisfied. This biological solution will also contain geotextiles that will work in combination with the grass to biologically degrade and consume any potential oil spills caused by the vehicular access, permanently protecting the site from contamination.

For more information and detail on the biodiversity aspects of the project please refer to Rural Solution's Hodder Grange P80 Landscape Design Statement.

Transportation

The diversification of the land use creates a new offering for the locality, providing jobs, supporting local service contracts.

The following directly addresses the need for sustainable transportation:

- Electric car fast charge port driven by the onsite renewables.
- Free charging will be offered to the users of Hodder Grange to encourage the use of electric vehicles

Foul Waste & Waste Collection, Servicing & Deliveries

Refuse will be collected and separated into general waste, food waste, recyclable waste and paper/card at source within each of the separate areas of the site.

It will then be taken to a bin store and collected on a weekly basis. The collection vehicles can access the site and have ample turning circle to exit in forward gear.

All green waste and paper/card waste from the site will be composted on site using technologies such as thermally accelerated composters or slurry digesters. Leachate and compost will be incorporated into estate operations



The site is not within 30m of a public sewer (or 30m x number of properties) as such effluent and wastewater will be processed on site using a carefully designed Package Sewage Treatment Plant that meets BS EN:12566. It is possible to draw out the necessary maintenance operations in these devices to as much as 5 years and to run the system without the need for electricity.

Occupancy and Building-Related Health

- Humidistat controlled ventilation for optimal air quality actuated by a networked air quality sensor system
- Networked fire alarm system throughout
- New build components use fully breathable building fabric (Wufi based hygroscopic based modelling to ensure optimal vapour diffusivity of building materials through construction detail). This will ensure no potential for sick building syndrome and other localised damp related issues.
- Organic based insulation materials used to ensure VOC off-gassing is minimised
- Lime based interiors capable of sequestering VOC's and CO2 with antimicrobial surfaces for the ultimate in hygienic interiors

Water-Saving Technologies

All new taps will be flow restricted (5 and 9l/m for bathroom and kitchen respectively) and aerated and low flush (4/2.6l) dual flush toilets. New showers will be flow restricted (9l/m) and aerated. These technologies should result in a considerable reduction in typical water usage.

Rainwater collection and use across the site will greatly reduce the need for potable water use for non consumption activities. Collecting rainwater off just the NE roof of the ancillary building would give an annual volume of approx 145,000L. This is significantly more than the estimated grey water requirements of the main house.

Conclusion

This project will see newly developed technologies and strategies brought into practice, offering a pilot for the future of the rural built environment.

As such, it is hoped that the Council will support and approve the application so that work on this important and exciting new project can commence.

Hodder Grange will be:

- A 'True' Zero Energy / Zero Carbon House
- The first Passivhaus Plus New Build property in the [north-west](#); and,
- The first classically designed Passivhaus Plus property [in the world](#).

There are no other known cases of other approved buildings which would meet the Passivhaus Plus standard.

Passivhaus Plus is a [higher standard of performance](#) than the standard Passivhaus accreditation (Passivhaus Classic)

