

Design Statement

New Build Passivhaus Architectural Office
49 Potterne Wick, Potterne





Figure 1: PKA Architects office, Whistley Road, Potterne

Background to the Practice

PKA Architects, originally established as Peter Kent Architect, was founded by Peter Kent in 1988 and has been based in Potterne since 1991. The practice initially operated from a spare room at Brandon House, Brownleaze Lane, before moving to its current premises at Featherbrook House on Whistley Road.

The practice has remained a family business throughout this period, with Peter's wife, Clare, supporting the business as financial manager and their son, Tom Kent, joining initially as an architectural assistant before qualifying as an architect and becoming a Chartered Member of the Royal Institute of British Architects. Peter and Clare have now retired, with Peter also intending to step down as a director in the coming months, and Tom now running the practice.

The current office is a building linked to Featherbrook House (opposite), Peter and Clare's home. Its use as an architect's office is subject to a planning condition restricting its use to that purpose. In view of Peter and Clare's retirement, the practice is now seeking to relocate from the family property to a purpose-designed office on land owned by Tom opposite his home at 49 Potterne Wick.

A separate application is being submitted to enable the existing office building at Featherbrook House to revert to ancillary domestic use.



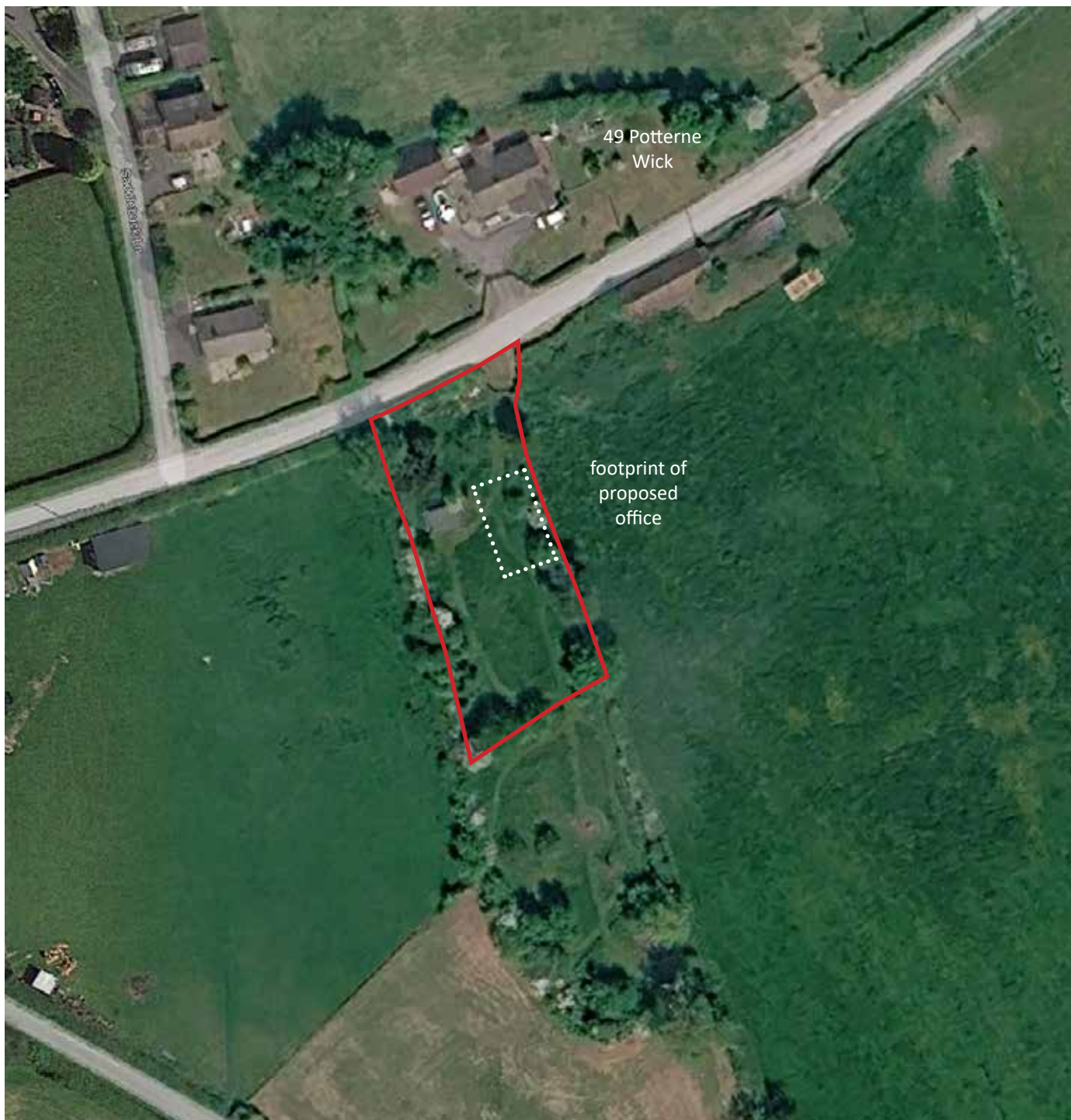
The practice has a longstanding commitment to the local community. It has regularly provided work experience and training opportunities for architectural students, including Part I and Part II assistants, and employs local architects. The practice has now developed into a team of four architects, two of whom, including Tom, live in Potterne and two in nearby Market Lavington.

Environmental sustainability is an important part of the practice's work, with a particular focus on energy efficiency, low-energy design and reducing embodied environmental impact. Three members of the current team are certified Passivhaus Designers, reflecting the practice's experience and commitment in this area.

The proposed relocation represents the next stage in the development of a long-established local business. It would allow PKA Architects to remain based in Potterne while providing a purpose-designed workplace for its small, locally based team, independent of the family home from which the practice has operated for many years. The proposal would therefore provide a suitable long-term home for the practice while maintaining its established connection with the village and wider local community.



Figure 2: Compilation of local PKA Architects projects, PKA Architects



Site Location and Context

The proposed site is located at 49 Potterne Wick, within the existing agricultural landscape. Its position, orientation and relationship to the surrounding landform have been carefully considered to ensure that the new building sits comfortably within its rural setting and has a limited visual presence.

Tom and his wife Hollie's home at 49 Potterne Wick is located immediately to the north of the site, on the opposite side of the road. The house and road sit slightly higher than the application site, with the road running approximately east-west between the two.

An existing 11kV overhead electricity line crosses the site and represents a significant constraint to the developable area.

The existing field entrance will be retained to provide access to the office. The remainder of the site will remain undeveloped agricultural land and will be managed as a combination of wildflower meadow and orchard. This will retain the predominantly open character of the site while creating an attractive landscape setting for the building and providing additional opportunities for biodiversity.

Figure 3: Aerial view of 49 Potterne Wick and the surrounding site, Google Earth



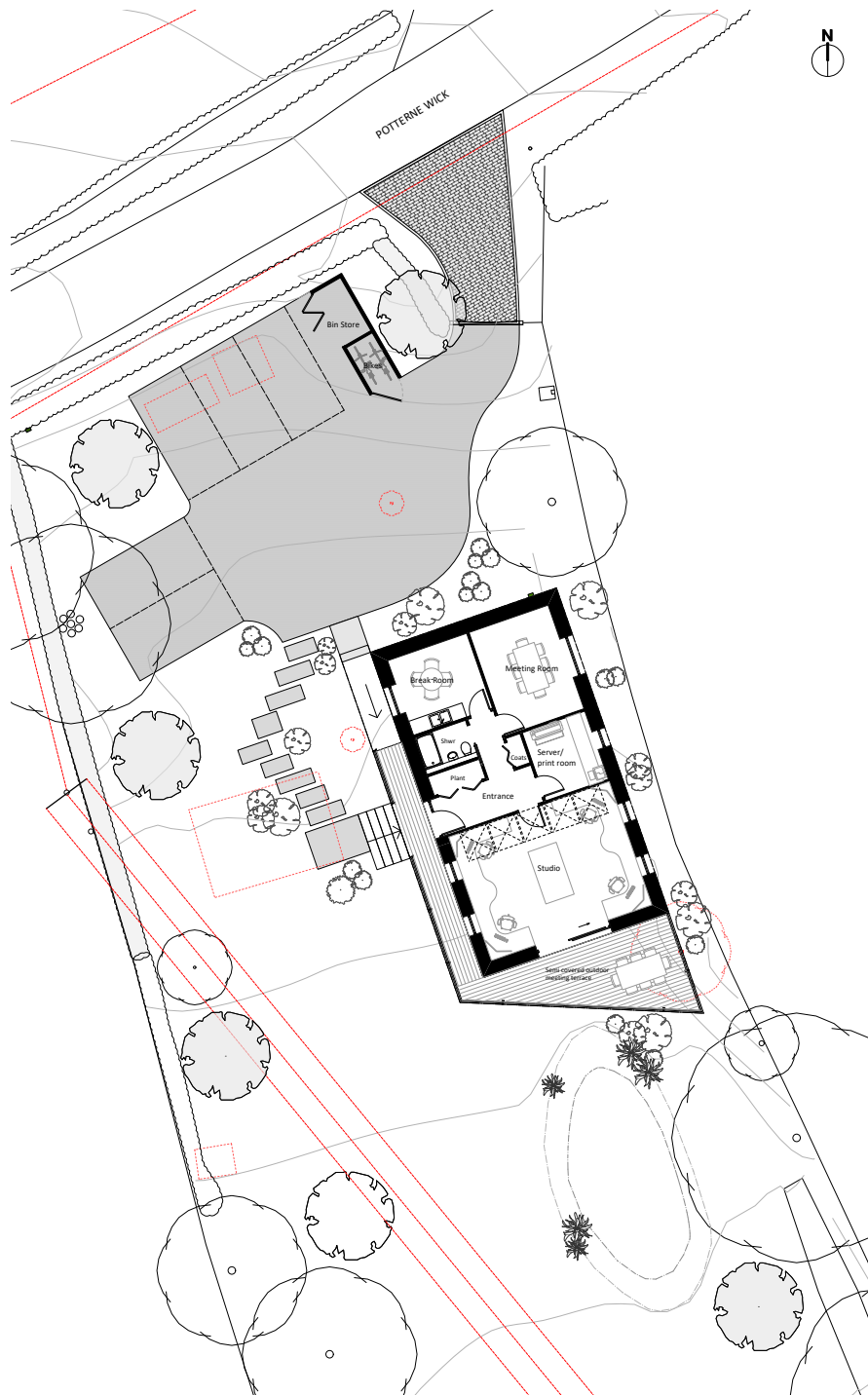
Existing Site and Landscape

The site currently forms part of the surrounding agricultural landscape and is characterised by its open, undeveloped nature. The gently falling land, existing vegetation and relationship with the surrounding countryside give the site a distinctly rural character.

The existing photographs illustrate the site's relationship with the road, Tom and Hollie's home, and the wider landscape, as well as the changing levels across the site. The views from the road and neighbouring property have been an important consideration in developing the form and position of the proposed office.



Figure 4: Existing site photographs



Design Approach

The design of the proposed office has been carefully considered in response to the character, topography and constraints of the site, with particular emphasis placed on minimising its visual impact while creating a high-quality, sustainable working environment.

Rather than imposing a standalone object within the landscape, the design seeks to work with the existing qualities of the site. The position and orientation of the building respond to the change in level between the road, neighbouring property and application site, helping to reduce its visual prominence from the surrounding area. The location of the existing 11kV overhead electricity line has also directly informed the building's position and linear form.

The relatively narrow footprint allows the building to occupy a limited proportion of the site, retaining the majority of the land as open space. The existing field entrance will be retained, providing a simple and established approach to the office.

The landscape surrounding the building will be managed as a combination of wildflower meadow and orchard. This will reinforce the site's rural character, provide a natural setting for the building and introduce additional opportunities for biodiversity.

The proposed office is therefore conceived as a considered addition to the existing landscape, with the building, access and surrounding landscape working together to create a sensitive and distinctive place to work.

Figure 5: Proposed site plan (NTS), PKA Architects

Scale, Form and Appearance

The proposed building has been deliberately kept modest in scale, reflecting the requirements of a small architectural practice rather than seeking to maximise the development potential of the site. The total gross internal area is approximately 86m².

The building is single storey, with a simple gently sloping roof. Its maximum height is approximately 4.0m, reducing to approximately 3.1m at the elevation closest to the road. The combination of its single-storey form, relatively narrow footprint and position within the existing topography is intended to minimise its visual impact.

A contrasting flat-roofed loggia extends along the principal elevation. This provides solar shading to the building while also creating a sheltered external space for meetings and informal working.

The rural setting is considered an important part of the character of the proposal, and the design seeks to make positive use of this relationship. The loggia will provide opportunities for meetings, telephone calls and periods of informal work to take place outside when weather conditions permit, providing staff with regular access to the surrounding landscape and natural environment. It will also provide opportunities for informal outdoor meetings and breaks, supporting staff wellbeing and creating a positive connection between the workplace and its rural setting.

The material palette is intentionally restrained. The walls will be clad in black-stained vertical timber boarding, allowing the building to sit comfortably within the rural setting, while the principal roof will incorporate a green roof. The simple form and limited material palette are intended to give the building a quiet and recessive character within the landscape.

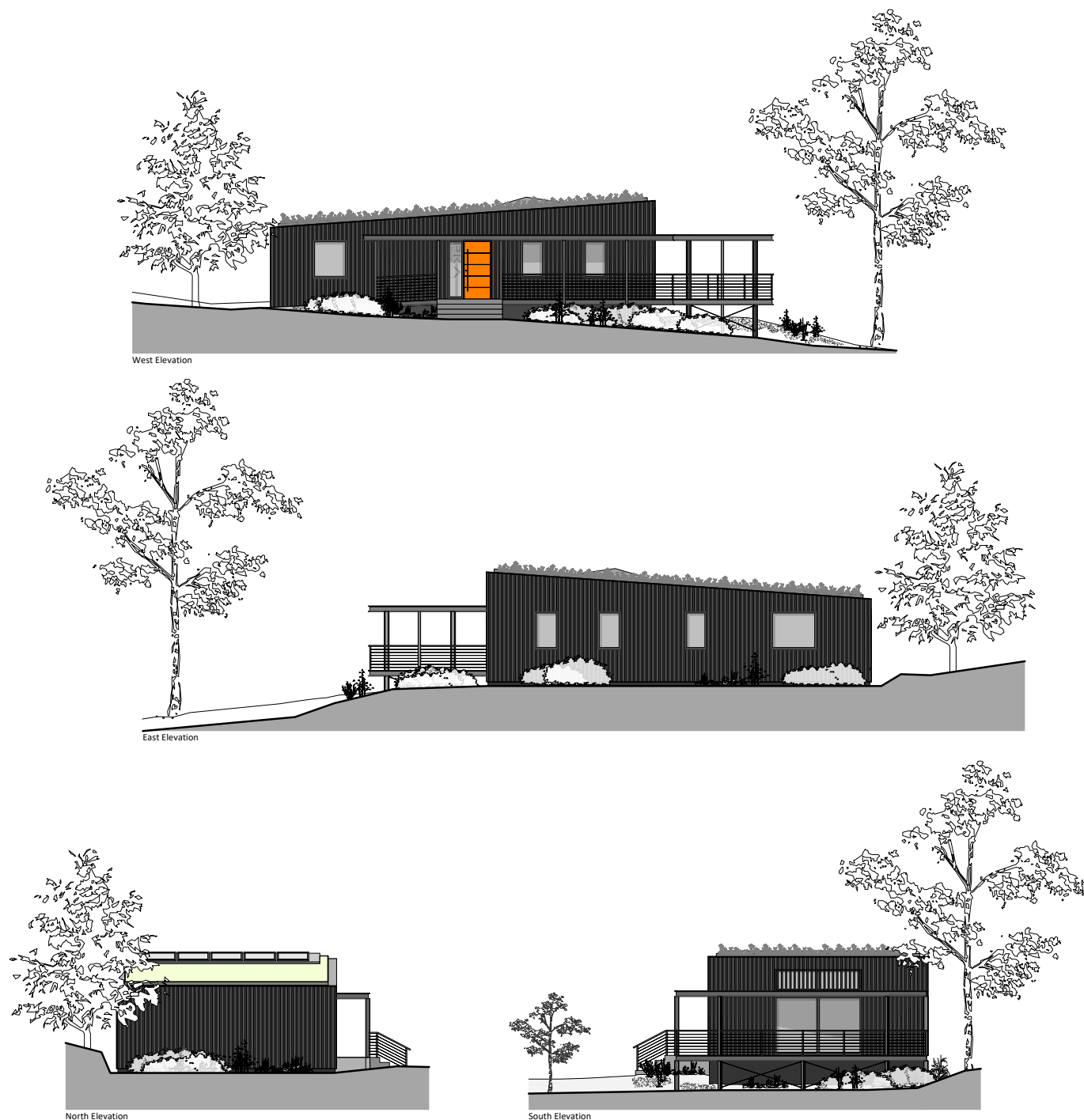


Figure 6: Proposed elevations, PKA Architects

Access, Parking and Movement

The existing field entrance will provide the access to the proposed office, avoiding the need to create a new access onto the highway.

The majority of visitors to the practice are expected to arrive by car and sufficient on-site parking is provided to meet the anticipated requirements of the small practice. The parking and manoeuvring area has been designed to allow vehicles to turn within the site, avoiding the need for vehicles to reverse onto the highway.

The site is also within cycling distance of all members of the practice, although currently only one member of staff regularly cycles to work. The location is particularly accessible for the practice director, whose home is immediately opposite the site and who will be able to walk to work, leaving his car at home.

The arrangement therefore provides appropriate on-site parking while also allowing the practice to make use of the site's proximity to the homes of its staff and the wider village.



Figure 7: Proposed site plan showing vehicular visibility splays, PFA Consulting drawing P1064/01



Construction and Embodied Carbon

The construction approach has been developed with the aim of minimising embodied carbon, reducing ground disturbance and allowing materials to be adapted or reused in the future.

Rather than conventional concrete foundations, the building will be supported on screw piles. This allows the building to be raised above the existing ground level with minimal excavation and without the use of concrete foundations. This approach significantly reduces the amount of material required below ground and avoids the embodied carbon associated with conventional concrete foundations. The screw piles can also be removed at the end of the building's life, with the potential for their reuse elsewhere. The ground floor structure will be suspended timber which will be highly insulated and detailed to eliminate cold bridges around the perimeter of the building.



The building will use a timber-framed construction with predominately blown cellulose fibre insulation. Cellulose insulation is manufactured largely from recycled paper fibre and has a comparatively low embodied carbon compared with most conventional insulation materials. The timber structure and highly insulated envelope provide an efficient construction system while supporting the wider low-carbon objectives of the project.

The loggia will be constructed using galvanised steel with bolted rather than welded connections. This approach allows the structural components to be dismantled more readily and potentially reused at the end of the building's life, supporting the principles of adaptability, disassembly and material reuse.



The design therefore seeks to consider embodied carbon not only through the choice of individual materials but also through the way the building is constructed and its potential to be adapted or dismantled in the future.

Figure 8: Material precedents illustrating the proposed construction techniques and material palette. Image sources: various online sources

Passivhaus and Energy Efficiency

The building has been designed to meet the Passivhaus standard and is intended to be certified on completion.

Passivhaus is a rigorous, performance-based standard for energy-efficient buildings. The approach is based on reducing energy demand through a highly insulated and airtight building envelope, minimising thermal bridging, using high-performance windows, controlling solar gains, limiting overheating and providing mechanical ventilation with heat recovery.

Its orientation and fenestration have been carefully considered to provide useful solar gains during the winter months, while the external loggia provides shading during the summer when the sun is higher in the sky. This helps to reduce the risk of overheating while allowing useful passive solar heat to enter the building during colder periods.

The building envelope will be highly insulated and designed to achieve a very high level of airtightness, with thermal bridges carefully considered in the detailing. High-performance windows and doors will further contribute to the thermal performance of the building.

Fresh air will be provided through a mechanical ventilation with heat recovery (MVHR) system. The system will extract air from areas such as the shower room and server room and recover the heat contained within this air before transferring it to the incoming fresh air. The heat generated by the server equipment, computers and printers will therefore make a useful contribution to the building's heating requirements by recovering heat which would otherwise be lost.

Photovoltaic panels will also be incorporated into the roof design to generate renewable electricity on site. The intention is that the PV array will provide a significant proportion of the electricity required to operate the office, including the computers and other equipment required by the practice.

The combination of passive design, a highly insulated and airtight envelope, high-performance glazing, MVHR, renewable energy generation and careful control of solar gains is intended to result in a building with very low operational energy requirements.

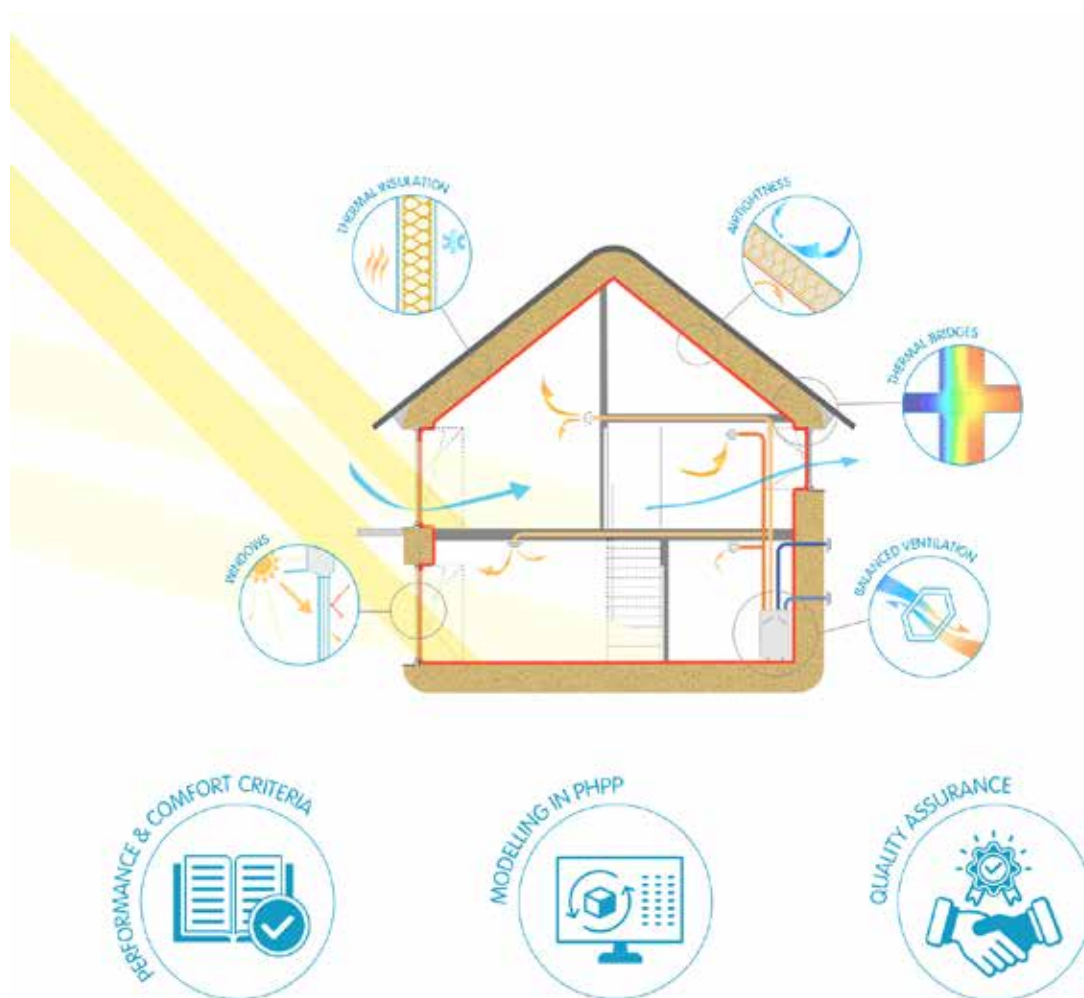


Figure 9: Passivhaus principles diagram, Passivhaus Trust

Biodiversity and Landscape

The landscaping strategy has been developed to retain the established character of the site while enhancing its ecological value and providing an appropriate setting for the proposed office.

The majority of the site will remain undeveloped and will be maintained as a wildflower meadow. This will retain the open character of the land while providing opportunities for a range of grasses, wildflowers and associated species.

The existing soft landscaping will be retained largely as it is, including the established mix of semi-mature coniferous and deciduous planting. This existing vegetation provides an important degree of screening and will help the proposed building integrate into its landscape setting.

The proposal will require the removal of one apple tree and one plum tree. Replacement trees are incorporated within the landscaping scheme to compensate for this loss and contribute to the longer-term landscape structure of the site.

New planting will adopt an informal character, incorporating a mixture of grasses and wildflower species rather than formal ornamental planting. This will complement the proposed wildflower meadow and provide additional opportunities for biodiversity while helping the development sit comfortably within the surrounding rural landscape.

The green roof will provide a further opportunity for biodiversity while helping visually soften the building when viewed from the surrounding landscape.

External Landscaping and Drainage

The external landscaping has been designed to minimise the extent of hard surfacing while providing appropriate access, parking and circulation.

The driveway and parking areas will be predominantly finished in gravel, with permeable block paving used for the approach to the highway. The permeable paving will allow rainfall to pass through the surface as part of the site's Sustainable Drainage System (SuDS), helping to reduce surface water runoff.

Gravel has been selected as a durable and relatively low embodied-carbon surface material compared with a number of more intensive hard-surfacing alternatives. Its informal appearance is also considered appropriate to the rural setting.

The green roof will provide additional surface-water attenuation and help reduce the rate at which rainfall leaves the building. The combination of the green roof and permeable external surfaces forms part of the overall approach to managing surface water within the site.

The detailed drainage strategy will ensure that surface and foul water are appropriately managed in accordance with the site's ground conditions and the recommendations of the relevant technical assessments.



Design Summary

The proposal has been developed as a small, purpose-designed workplace which responds directly to the characteristics and constraints of the site. Its single-storey form, restrained material palette and position within the existing topography are intended to minimise its visual impact, while the retention of existing planting and informal new landscaping will help integrate the building into its rural setting.

The use of screw piles, timber-framed construction, cellulose insulation, a green roof and bolted structural connections reflects an approach which seeks to minimise embodied environmental impact and allow materials and components to be reused where possible. Combined with Passivhaus design principles, MVHR and on-site renewable energy generation, the proposal provides a highly energy-efficient workplace designed around the long-term needs of the practice.

The overall approach is therefore to provide a modest, carefully integrated building which makes efficient use of the site while retaining its predominantly open character and providing a high-quality, sustainable working environment for the practice.



Figure 10: CGIs illustrating the proposed office within its landscape setting, PKA Architects

