

# Lammas: Community Hub Building

## a proposal from Dil Green Architect

in response to the briefing document issued by Lammas

Dec 2006

### Introduction

This document is in support of a proposal for architectural services for the planned Community Hub building at the Lammas low impact village. As architects based in London, we cannot offer the full design/build package envisaged in the briefing document. We spoke with Simon Dale before commencing work, and received his opinion that an interesting proposal would certainly be given consideration. As we felt excited by the project, and that we had some good ideas, we have prepared this submission, in the hope that it will be of interest.

We consider it far-sighted and positive that the founding group of the Lammas village intend to build a communal building as part of the first stage of the project. Within such a space, all sorts of activities and functions become possible, and the community itself has a home and a recognisable public 'face' in the surrounding country. We envisage the building we propose acting as an extra 'living room' for each dwelling of the village - in regular, day-to-day use, unlike so many 'community halls'.

For this to happen, the building must offer itself as a robust and accessible place, capable of operation in many modes, from the more obvious, 'formal' community events - celebrations, dinners and so on, to the perhaps more important informal uses (all sorts of possibilities come to mind: a large space available for particular projects that need shelter; a wet weather play room; 'cooling off' space when your house gets too small; collection point for shared bulk purchases, 'jumping off point' for excursions, picnics, rambles, skills exchange space...).

We believe that the arrangement of spaces in our scheme and their relationships with the proposed site-plan allow for and encourage this character.

### Summary

The proposed Community Hub building comprises two enclosed volumes under a single roof. The primary space is proportioned for use as a multi-purpose room, with a relatively high ceiling (2.65 metres at the eaves), and designed so that it can later be extended by the addition of one or more structural bays if desired. The secondary volume contains the office and the WC facilities.

The sheltered porch between the two volumes provides access to both, and places for

notice-boards, post-boxes, goods exchange etc., as well as a small tea-making cupboard.

The arrangement of the volumes and the space between is responsive to the site, opening itself to arrival, and on the other side, to the south and the village green, providing shelter from the west, where most of the heavy weather comes from, the aim being to make the sheltered porch the favoured meeting place of the village.

Provision for a future kitchen extension is allowed for to the north of the main hall, where it can be used as a 'stand-alone' kitchen for produce processing, or as a catering kitchen/bar/servery for the hall.

The main hall is provided with large glazed doors to the southern side, opening onto a sheltered timber deck at the same level. Ramps down from the deck produce informal stepped seating along the deck, facing the village green.

Construction materials have been selected to make use of local resources as detailed in the briefing, to minimise embodied energy in the building fabric. The energy design strategy has been to produce thermally lightweight, highly insulated spaces, suitable for occasional occupancy, rather than permanent use.

Services provision will be very simple, and largely passive, open to user control.

Despite the aim to produce a low budget, affordable building, the construction materials and detailing are considered with the aim of producing a durable, long life building.

The building can be built in stages, should budget/time availability dictate.

## **Character**

### **The Whole Building**

Arriving along the track, the volume of the building rises from the ground' the curve of its side and the gentle upward incline of the earthen ramp lead you up to the sheltered space between the hillock, which contains the office and wcs, and the main hall. Beyond the hillock, the red/brown stepped roof of the main hall appears. Within the sheltered entrance porch, standing on a timber floor; you are presented with the main doors to the hall, flanked by community notice-boards; looking to the right, another door opens into a small lobby, giving access to the office and wcs. There is a cupboard set into the wall, with a kettle and cups. There is ample space between the buildings for goods offered for exchange to be displayed.

We have designed the building to be beautifully and softly integrated with its setting. All the approaches to the building are in consolidated earth, with soft shapes and natural profiles. The curved western end rises like a steep, grassy hillock out of the ground, and over time, its massive earth roof will weather with softer contours.

The cruck frames' exposed outer legs support the layered roof of the main hall, it's earthy red signalling human habitation, warmth and shelter, set firmly on a grassy bank.

## **Main Hall**

Entering through the wide double doors, you are in the centre of one end of a well proportioned hall, with three double sets of glazed doors down one side. The floor is timber, the walls and ceiling softly plastered, the openings to the doors generously splayed. A small window high in the far wall lets in the early sun. The ceiling rises gently along the centre of the room for a feeling of spaciousness, while two timber pole beams spanning across remind you of the trees which hold up the roof above. Going over to the southern doors, you see that these open onto a covered timber deck, which faces onto the village green.

In the future, there will be a central door/serverly in the north wall, leading to a small 'galley' type kitchen, with its own door to the main track.

From the deck, ramps take you gently down to the green, or you can walk along back to the covered porch.

## **Covered Porch**

This is perhaps the most important part of the building - where simple, day-to-day things happen. This area (already imagined by yourselves as a site for notice-boards, post-boxes, goods exchange etc), must be so comfortable that a two minute visit to pin up a notice can easily turn into a ten minute chat with someone in the office, or simply a short breather in the sun. The aim for this space is, quite simply, that it should be everybody's favourite spot to hang out, away from their own home.

To meet this aim, things are arranged so that it is naturally at the heart of things - all journeys pass through the space - it is open to the main arrival axis along the track, and opens up to the village green on the other - this will bring people to the spot. It is then important that they feel comfortable enough to linger, so the space is sheltered by the roof and the office from the wind and rain (largely from the west), and opens itself wide to the south and the sun, with a small bench to encourage longer stays. We also suggest a small tea-making cupboard (which serves the office as well), let into the wall here.

## **Office/WC**

These supporting spaces are accessed from a small lobby (acts as a draught lobby to the office), fitted with a wash-hand basin for easy general access to water: three unisex cubicles, one suitable for disabled and baby changing use, give adequate provision for the maximum numbers envisaged. It would be possible to fit out one at a time if needed.

## **Construction**

The construction of the scheme is tailored to the materials described as available close to the site, and to lowest possible embodied energy (including transportation considerations)

## Foundations

These will need to be designed to suit ground conditions (unknown to us), but the principle will be to minimise digging by using wide, shallow, consolidated earth/earth bag type construction to construct dwarf walls which support the light superstructure of the building. These raise the timber structure and straw bale insulation well away from the damp earth, and allow good ventilation.

The low walls are topped with a coping of local stone, both to shed water and to spread loads from the framing. This uses a small amount of stone where its properties and character will be put to best use.

## Frame

The wall and roof frames of both enclosed blocks are to be framed in round larch poles, using those available on site first, and other local sources as necessary. Round pole beams also support the suspended floors.

## Roofs

The roof of the main hall and over the porch area is finished with 'Onduline' corrugated sheeting (<http://www.slecladding.co.uk/onduosheet.htm>), an environmentally sensible and economical roofing material, as it comprises organic fibres with bitumen impregnation. This is arranged as a series of lapped layers, with the joints expressed as staggered steps. The roof void is ventilated above the insulation at ceiling level, so that it provides a valuable potential nesting site for birds, bats, wasps etc., at the same time as maximising the life of the timber structure.

The roof over the curved western end of the building is an 'intensive' green roof - it supports meadow type plants. This generally requires a relatively low roof slope, while the slope of the roof timbers here is quite steep. The roof is arranged as stepped 'terraces', each around 400mm wide, which spiral gently around the roof toward the south, where they feed into a water barrel via a gutter. The spiral terraces are formed by chestnut paling fence roll and chicken wire mesh, tied off to the ridge with stainless steel wire (the chestnut palings will probably not last beyond 10/15 years, but by this time the roof will be stabilised by root systems).

## Floors

The floor level of all the spaces will be approx. 4-600mm above local ground levels. Internally, larch planking will be used over two layers of OSB boarding with staggered joints, to ensure minimal leakage. A cavity formed with OSB board beneath these suspended floors will be insulated with 150mm Warmcell or similar blown fill cellulose insulation.

The porch and external decking will be in sawn larch planking with open joints.

External ramps will be in rammed earth with consolidated gravel topping.

## Walls

Infill walling within the frames will be built off the floor framing, using straw bale

construction, with earth/lime plaster finishes. Externally, lightweight pole screens will be finished with earth/lime plaster onto lathing. These walls are generally well sheltered.

The west facing end of the building has low walls built in compacted earth - either traditional 'cob' construction, or quicker and simpler earth sack courses, with straw bale internal insulation; the terraced green roof meets these dwarf walls.

## **Servicing**

### **Primary energy source**

It is certainly possible to mount up to 20 sq. metres of PV solar cells on the south facing roof of the main hall. It is suggested that this is not possible within the imagined budgetary constraints. It is further suggested that, due to the irregular occupation of the building, this would not be a good investment, even in energy terms.

Accordingly, we have assumed that the local energy grid will provide electricity. Of course, any future PV array on the roof could feed back into this grid.

## **Heating**

### **Main Hall**

Heating requirements of the main hall will be minimal, due to its lack of thermal mass, and high insulation levels. East and south facing glass will provide a level of passive solar gain. Two radiant electric panel heaters will be mounted onto the roof beams crossing the space for boost / initial warmup heat.

### **Office**

A small electric oil filled radiator will be more than adequate to heat this space quickly. High levels of insulation will retain heat. The draught lobby will retain warmth even with some level of coming and going.

### **WCs**

Require frost guard heating only.

## **Lighting**

### **Main Hall**

Good day-lighting is available. Eight low energy up-lighters, switched in pairs will provide bright light when required.

### **Office and WCs**

All have natural daylight, with low energy lamps when required.

## **Ventilation**

### **Main Hall**

Ventilation will be a key element to making this space comfortable in a variety of modes. Heat recovery is inappropriate in this single volume. A passive stack system will provide constant free background ventilation, and two simple domestic extract fans will be provided, with switched operation, to the ceiling. Assuming doors are all closed, these will create a negative pressure within the space, which will draw air in through ducts positioned under the floor, at the centre of the plan. This air will be relatively cool in summer, and relatively warm in winter.

### **Office and WCs**

Ventilation provided by opening windows and doors if cross ventilation required.

### **Drainage**

It is assumed that a reed bed treatment approach is available on the site, and that foul water drainage will be routed to this. Alternatively, with extra excavation, composting WCs such as the Clivus Multrum type M1 could be installed.

### **Rainwater**

Rainwater from the whole roof is collected. This can be pumped to a roof-level tank for WC flushing and handwashing, or simply used for irrigation.

### **Costings**

No detailed costings are provided at this stage. We consider that this could be an extremely low-cost building if community labour could be given toward the labour intensive rammed/ consolidated earth sack parts of the construction.

### **Conclusion**

While, as architects, we have not been able to provide a full design/build solution as you have wished, we believe that we have identified and resolved in an integrated and beautiful building, many of the the important issues that this brief raises.

We would be more than happy to discuss with you a variety of ways to bring these ideas to fruition, from a full architectural appointment, to providing basic drawings and support to a local contractor who could take the construction forward without our detailed involvement. We wish the Lammas project well, and would be very happy to be of use.