

## **Proposed plan for 1 Lansdowne Close Angmering, BN16 4JN**

### **Extension & Velux Conversion for current family member (son of the owner) residing at current address.**

The client has a pre-existing outhouse/ workshop in the rear of the garden measuring 3690mm x 5515mm. The outhouse has a double skinned cavity wall that extends up 2.2m before hitting the 4x2 wall plate that has 4x2 joists spanning 3690mm. It has a flat roof with a pitch of 6 degrees and is sitting on 1000mm x 450mm footings. .

The proposed plan is to extend the outhouse by 1500mm x 3690mm with a cavity wall for a bathroom and to add a small bedroom upstairs with x2 front facing velux overlooking the back garden.

The foundation we propose to use for the extension is a minimum depth of 1000mm x 450mm, this is due to the land being clay soilscape 6. As a result, footings will need to reach the depth of the blue clay or until solid ground is reached. Furthermore, We will be working closely with total building control Ltd to make sure our footing adheres to the correct depth needed. We will use a 1:2:4 ratio of cement, sand and aggregates for strength. We are also considering using rebar to further strengthen the foundations, however, we will work with Total building control to find the correct solution.

The cavity wall will be built on solid concrete blocks for the first course on both leaves then the wall will consist of engineering bricks for the outerwall and an inner leaf of aircrete thermal blocks. We will place the dpc 150mm above ground level and air bricks every 2000mm, 75mm above ground level. Wall ties with a biscuit will be placed with a maximum horizontal distance of 900mm per wall tie with a vertical spacing of 450mm. We will have a cavity void of 125mm to allow for use of 115mm cavity wall insulation. The cavity will then be insulated with 115mm Celotex Thermaclass Cavity Wall Insulation.

The finished floor of the extension will be level with the pre-existing floor in the outhouse. Prior to our self-levelling screed we will start with 150mm of hardcore, then add sharp sand to create a level surface, we will put a radon barrier down then we will then add 100-150mm of concrete, then place 100mm Celotex with DPM over the top and then add 70mm of self-levelling screed. The oversight will end the finished floor level below the datum point (the current floor level in the outhouse).

Between the extension and current useable internal area, we will have a door opening into the bathroom, the door size will be 1981mm x762 mm, meaning the opening will be 812mm thus the need for a lintel 842mm in length (allowing 150mm either side of the opening for the lintel. Due to the cavity being 125mm and the fact joists and rafters will be going above we will use a heavy duty L1/HD 130 cavity wall lintel from iglintels.com.

We will replace the existing ceiling/roof joists with 9x2 c24 treated joists that would sit on a new treated c24 wall plate that is tied to the wall using plate straps every 1.2m / either side of windows. The joists will not exceed 400mm centres with noggin every 1200mm. We will triple up the trimming joists of our stairwell (using timberlocks and M16 bolts with washers and nuts starting 83mm in from the ends of the timbers and a maximum of 1000mm centres from the first bolt) then attach the double trimmer joists (joined the same way as stated prior)

using double joist hangers and twisted (PPN) nails. Our trimmed joist will then sit on our wall plate then be attached to the trimmer joist using joist hangers and twisted nails.

Between the joists we will use 120mm of rockwool acoustic joist insulation with noggin's every 1200mm.

We calculated the joists to be 9x2 treated c24. We calculated this by using the equation (span divided by 20) + 20mm = depth of joist. (3690mm divided by 20 = 184.5mm) + 20mm =204.5mm (8.18inch) we then rounded this up to get 9x2 as our floor joists.

We will use 18mm t&g chipboard flooring.

We will then tie our cut and pitch rafters into the joists by sitting the rafters at a maximum of 400 centres next to the joists; they will then be joined using 100mm timber locks.

We will use 6x2 c24 treated timber for the rafters at 400mm intervals to tie in with the joists. There will be two Sk08 velux's fitted to provide the ingress of natural light and fresh air. Where we fit the velux's we will double up the rafters either side of the velux's and have double trimmers to house the window.

We will support the roof using an ashlar wall and collars. The collars will sit 1800mm from finished floor level. The collars will consist of either 6x2 treated timber or 6x2 seasoned oak or azobe. There will be a collar either side of the rafters bolted together through the rafters using m16 bolts.

There will be an ashlar either side of the roof to help support the roof. The ashlar wall will be made from c24 4x2 timbers and will sit on a 5x2 lintel to transfer the weight evenly.

The gable ends will be made from treated 6x2 timbers sitting on a double joist to distribute the weight evenly. The frame will then have 22mm osb on the outer skin with felt, batten and cladding, then internally it will be insulated with 150mm celotex then actis h-control hybrid over the stud prior to batten and cladding. The visible gable end will be timber framed then infilled with brickwork. The timber frame will use variations of mortise and tenon joints with heart-of-oak dowles to tie the structure together.

We will use 150mm celotex in the rafters and ashlar wall with foil tape to seal it, then use actis h-control hybrid over the insulation and rafters for the vapour barrier. Finally, the internal area will be finished with batten and cladding.

Due to us having a rise of 2225mm and run of 1825mm the roof we will have a 51 degree pitch roof. We will felt, batton and tile the roof. We will use concrete redland tiles to match the colour of the houses tiles.

We will keep the existing system for rainwater - guttering running into a waterbutt to be recycled for use in the garden.

The client has a manhole on their driveway in which their waste and water waste currently runs to, due to this we can tap directly into it.. We will use a 4-inch brown soil pipe for the waste and connect it underground to the existing soil pipe. Water waste will also connect into the pre-existing waste pipes.

Water supply will come from the water mains in the building, we will run it from the house and run it 800mm underground, wrapped in insulation to avoid frosting.

There is sufficient power in the outhouse that was brought in from the house by a reputable electrical firm, this will be used to run the power points, the lights, electric shower and electric heating systems. The kitchen will have an electric hob with a built in extractor fan.

Upstairs and downstairs will be fitted with fire and smoke detectors. There will be appropriate ventilation and extraction in the toilet, kitchen and bedroom.

All plumbing and electrical work will be carried out by a qualified professional.

Although this proposed plan is near to the neighbours fence, we have verbal and also written permission/ consent (on request) to build the small extension on the outhouse to avoid the inconvenience on the neighbours property.

The build will be carried out by Moffatt carpentry alongside the home owners. We will be working within the daily permitted working hours. Close neighbours have also been pre warned about the potential build and consent has been given by all.

We will arrange deliveries to avoid rush hour and guide the delivery near to the drive or potentially onto the drive. If the delivery is curbside we will make sure the delivery is loaded onto the property grounds when delivered to avoid blocking or disturbing traffic. We will have a skip on the drive to avoid blocking up the street with waste materials.

Whilst working on site there will be safety measures in place and full PPE will be worn whilst safely adhering to strict health and safety standards.

All participants will be considerate to the neighbours by driving safely around the site, parking in the agreed upon areas and keep noise pollution as low as possible. We do have permission from neighbours to complete the work so they will be expecting construction noise in the permitted hours and we have asked the neighbours to inform us of their needs as and when the events occur. We will also pre inform neighbours of days when noise pollution may be slightly louder.