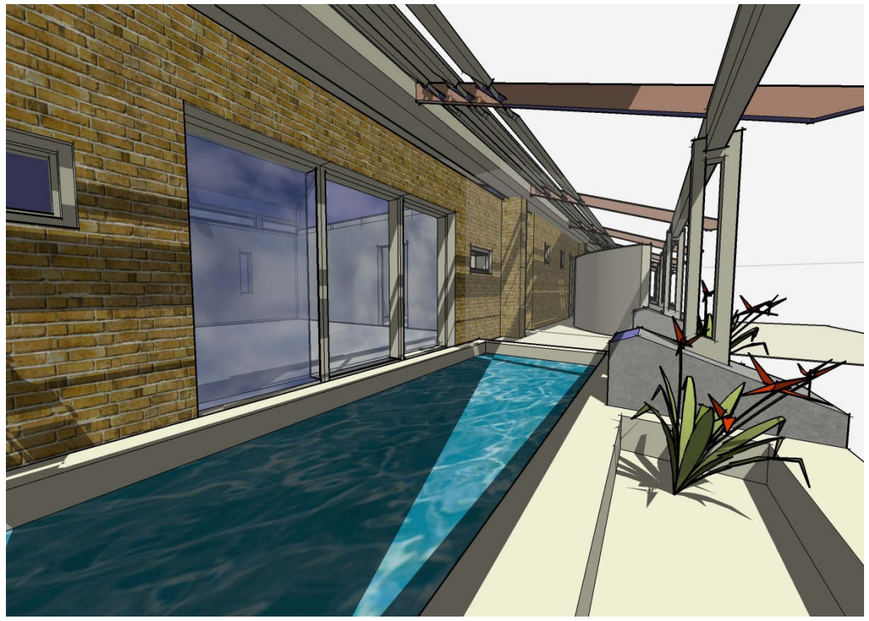
ST ANN'S ALLOTMENT CENTRE FEE BID

Boden Associates



ST ANN'S ALLOTMENT CENTRE FEE BID

Design Team

Architect: David Boden at Boden Associates, Nottingham.

CDM Co-ordinator

Boden Associates was established in 1997 and has worked regularly with the following consultants. David designed the following 'green' buildings: Trowell multipurpose school and the University of Nottingham's Adult Education link building. The latter earned us a Civic Society award.

Quantity Surveyor: Paul Harvey at Appleyard & Trew, Nottingham.

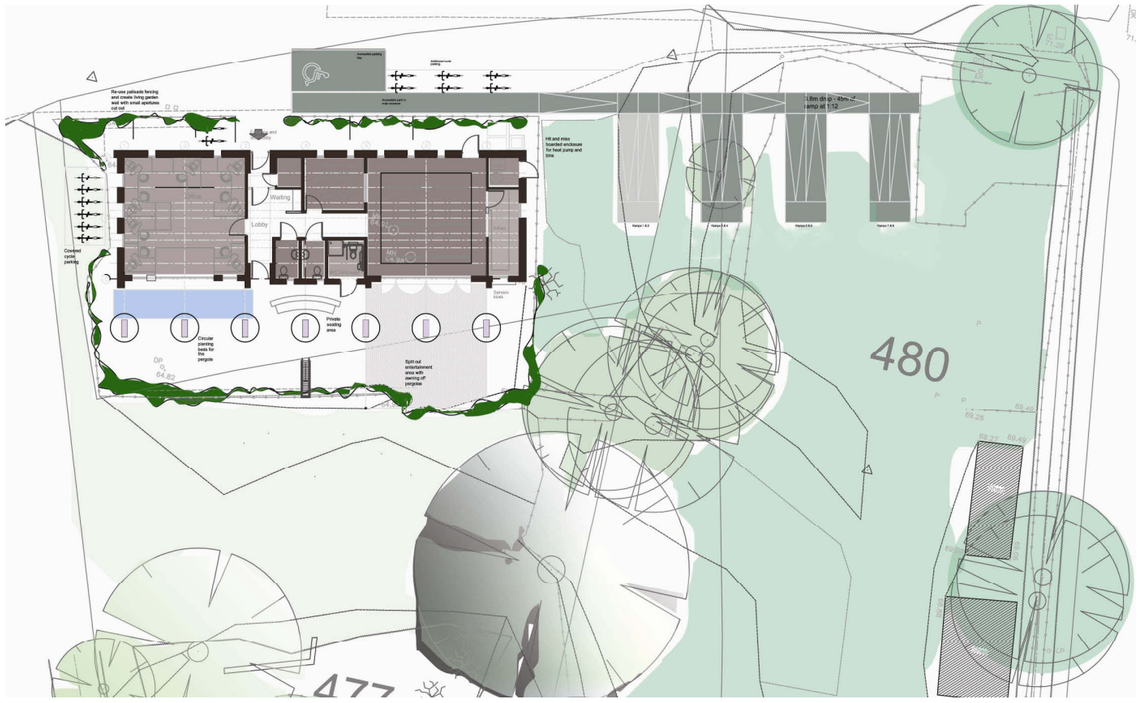
Boden Associates has worked with Paul for more than a decade and has used Appleyard & Trew on every project that needed a quantity surveyor. It is a small, hands-on, practical firm that carries out a lot of work in the charities sector. Paul is also familiar with this project, its history and its aims so will have a firm understanding of the budgetary constraints. His involvement underlines our confidence that the proposal is deliverable within budget.

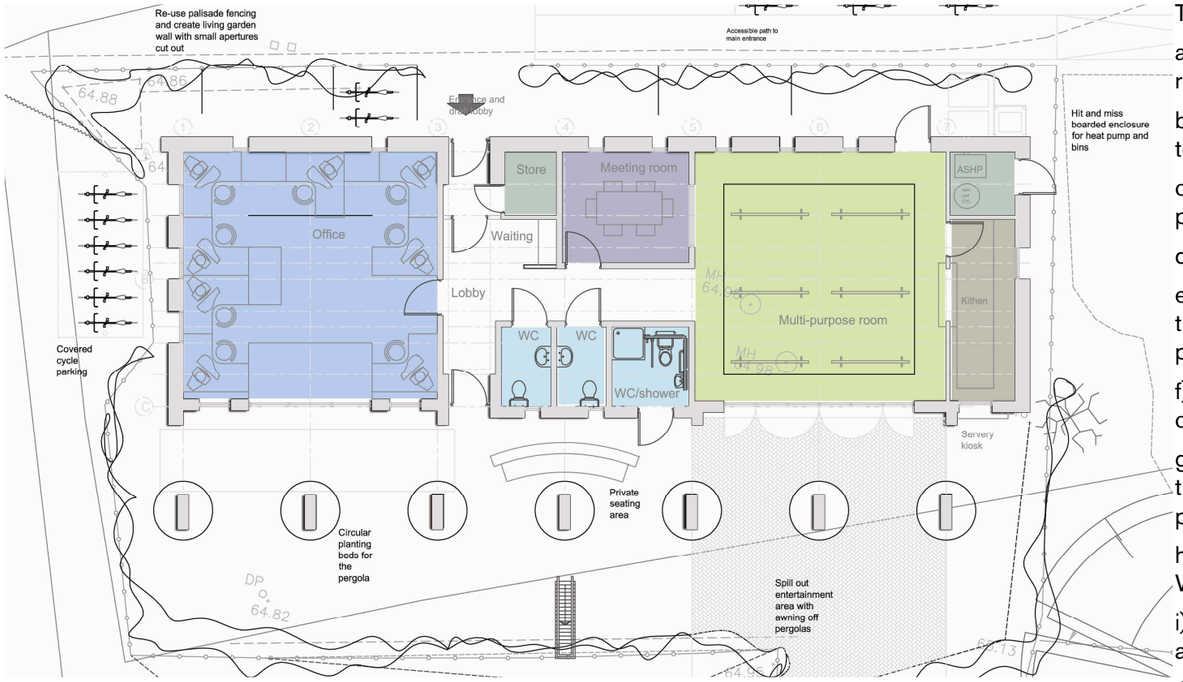
Structural Engineer: Nicola Millward at The Millward Partnership, Nottingham.

This is a long-established, small practice with experience in 'green' and sustainable buildings. It has been involved with Blueprint on the Green Street, Meadows project for the last 18 months, which is a proposed development of CSH level 5 residential affordable homes. It has assisted Nottingham Regeneration Ltd with assessments of their existing buildings in terms of energy/ 'green' factors and Nicola has been involved with the allotment site for three years.

Services Engineers: Haleys RAP, Nottingham.

This is another well-established, small consultancy that has a wealth of experience of `green' technologies and implementation, and we have been working with them for 12 years.





Design approach

Our design approach is one driven by strict cost constraints of a net building cost of £235,000. We have the requisite design skills to design a simple but beautiful building through well ordered elevations and eye pleasing shapes that can be constructed from everyday hard-wearing materials. Our simple, cost effective, elegant rectangular building will be embedded in the landscape, its gently curving roof entirely covered with living plants. By extending the building's roof structure through the south elevation we can hang timber solar shades off cantilevered beams. We can also encourage plants to grow up and over these beams to provide further summer shading. Our building will lose little heat since it will be highly insulated by 400mm- thick walls and a thick roof. It will therefore require little energy to heat but it will also be naturally ventilated and lit.

Procurement route

In July 1998 the report of the Government's Construction Task Force, chaired by Sir John Egan, was published. This report, Rethinking Construction, recommended new approaches to the commissioning of construction projects and emphasised the benefits of partnering. This aims at avoiding the adversarial approach to dealing with contracts for construction works and achieving substantial savings in both cost and time.

There are many potential advantages of negotiating a contract:

a) The client is aware of the quality of work that Crestra will deliver and already has a good working relationship with that contractor.

b) Crestra is already fully aware of the standards expected by the Renewal Trust and therefore will not have to go through a learning curve to develop this.

c) Value for money can be achieved by avoiding the costs and delays attributable to the retendering process. This will impact upon the costs of the contract itself.

d) Competition can be added in the subcontractor packages which typically represent 40% of the works.

e) Crestra is a third sector organisation and has a training regime to get people back into work. They have a time-served, skilled workforce and an experienced management structure that will ensure the quality of the project will not be compromised by the on-site trainees.

f) Negotiation, it could be argued, saves a lot of wasted industry resources in tendering to six main contractors.

g) Because the contract will be negotiated it allows the entire design team to assist the contractor in getting the best solution for the project and also to get the most cost efficient solutions for individual subcontractor packages of works.

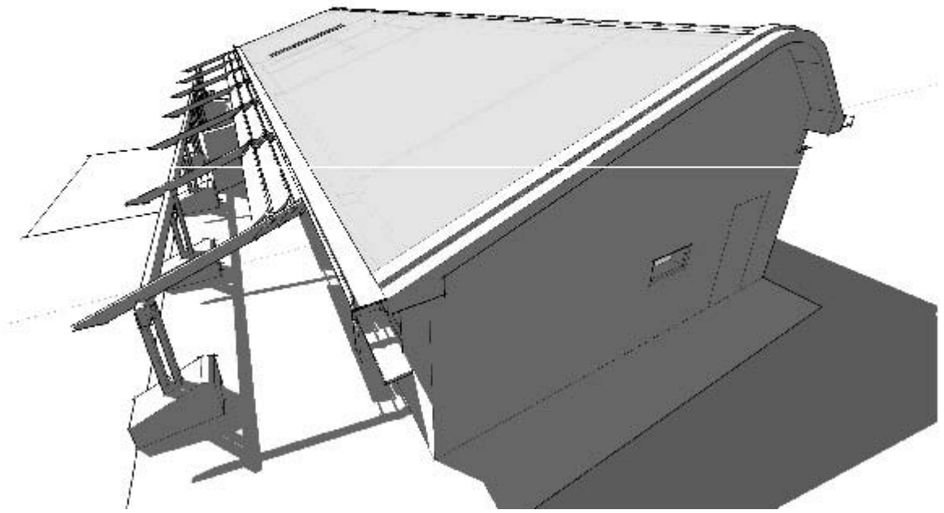
h) The design team and contractor will be working together to bring the building in for £270,000 plus VAT. We are assuming that since the client is a charity then the VAT will be reclaimed.

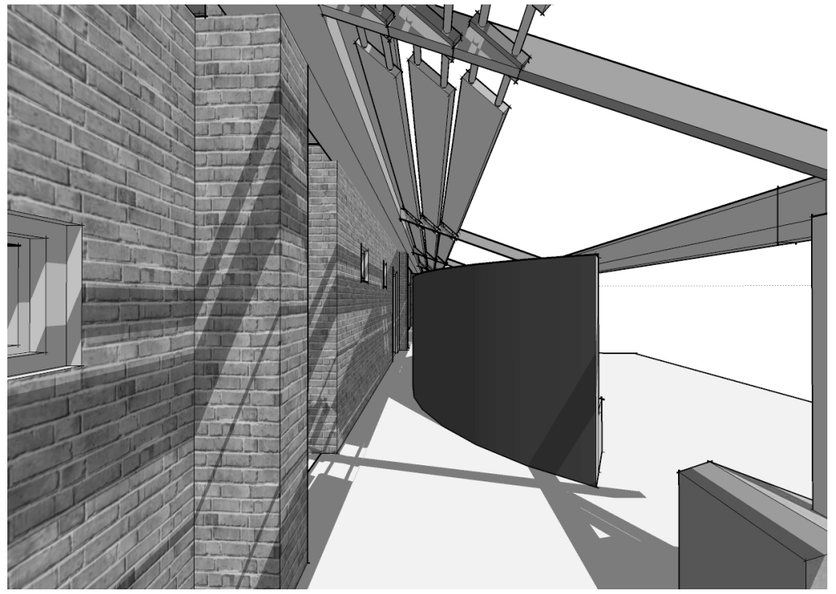
i) The negotiation process will need to be an open book arrangement which will be fully transparent and will also be overseen by the QS.

As a footnote to this we would have to advise, as would our quantity surveyor, that if we wanted the most competitive quote for the works then a traditional full design and tender document procurement route would probably yield the lowest tender given the current economic climate. There is also an issue over transparency and accountability which the design and client team would need to be comfortable with in issuing a contract that wasn't competitively tendered in the open market. However, the down side of this traditional route is that a project could be awarded to an adversarial contractor who could win with a low tender but who could be very claims conscious and make the whole construction phase difficult and unrewarding for all concerned.

We have worked on many design and build contracts and often on quite difficult and challenging schemes. The success of these is dependent on the level of detail in the employers' requirements tender package. It could however be argued that since the building is relatively small then a fully detailed and specified project is not much more work than a well worked up employers' requirements pack which leads us back to a traditional procurement route.

If we were to opt for a negotiated route on the basis of the benefits outlined above then it must be with the caveat to Crestra that if we cannot reach the target construction budget of £270,000 net, for whatever reason, or are unhappy with their or their subcontractors' prices, then we have the right to bring the negotiated route to a close. We would then pursue a traditionally tendered procurement route to six contractors and Crestra would be welcome to tender if they wanted to.





Budget tracking process – cost assurety

The following stages will need to be adhered to if we pursue a negotiated tender route as it will keep the design team focussed and will make best use of the contractor negotiating the price for the works

Architect works up his scheme with some strategic input from the mechanical and electrical engineers regarding services the building.

The structural engineer proposes his stick diagram engineering solution to identify any abnormal engineering elements that could have a cost input.

The architect modifies his design proposals and works up an outline employers' requirement document

Architect submits this document to the QS for an initial cost check.

The design and outline strategies are amended to ensure we are on budget.

The revised drawings are then issued to Crestra for their detailed cost input.

Designs and specifications are adjusted accordingly.

Detail designs and proposals are worked up so the contractor can fine tune his tender bid.

If this is agreed then the contractor and client should enter into a simple JCT contract either Minor Works or IFC 2005.

Planning and building regulation submissions are made on a scheme we know we can afford; further detail design work takes place and we gear up for a start.

Timescale

June: fee bid analysis

July: design team appointed and scheme proposal worked up

August: contract negotiations

September: detail design and planning and building regulations submissions

October: Ground clearance

December: Start ground works taking advantage of mild winters

Environmental strategy

To build a simple but highly insulated building.

400mm walls with lots of thermal mass to the north, east and west elevations which have reduced window sizes and a building envelope that will be air tight.

Use of a thick concrete ground floor slab and concrete block internal walls to create extra thermal mass which will work in conjunction with an underfloor heating system. We have had floor insulation and an under-floor heating system costed at £4500.

Low E glazing to reduce heat loss from inside the building.

Efficient air to water heat source pumps for under-floor heating. We have received a quote for £8000 to supply the cylinder and air to water heating unit.

We are familiar with the Altherm Daikin air source heat pump which can be used in conjunction with Kingspan solar thermal panels for hot water or any other system. Depending on the heating load calculations we may need an alternative heating supply for peak demand heating and on winter days but service engineers think this system should be sufficient for heating and providing hot water for an anticipated 15KW total load. We are also advised that these systems have a five-year payback, but an external heat dump unit is required and will need to be placed in a secure cage or hit and miss boarded shelter.

It may be possible that additional hot water heating could be generated from a solar heating system, possibly roof mounted either with flat plate collectors, or evacuated tubes which are more efficient but most costly and these are easily integrated into other heating systems. These combined dual systems would need to be connected to a solar twin coil cylinder, one feeding from the solar collector and one from the other heating source (air to water) which we have located in a small plant room adjacent the kitchen.

There is also the potential for some on site micro electricity generation by using solar photovoltaic panels which can sometimes attract grants of up to 50%. This aside, the site already has a mains power supply so we would ordinarily use this for the power demands of lights, computers and plant room gear.

For on-site water conservation we are proposing to use composting WCs as mains sewer drainage cannot be guaranteed in this location. The topographical plan does, however, indicate that there are manholes on site, but this would need further investigation.

We are familiar with the benefits that the Nottingham City District Heating system can bring and have used this on some projects. However, given the high infrastructure costs likely to get it on to site we have discounted this as a viable option, that is until someone at Nottingham City Council can advise us to the contrary. We are awaiting their comments.

Construction materials

Internal walls painted and exposed brickwork – high thermal mass.

Exposed screed floors throughout – black sections where the sun falls and white elsewhere to reflect light.

Recycled crushed glass for a hard core base for bedding external slabs.

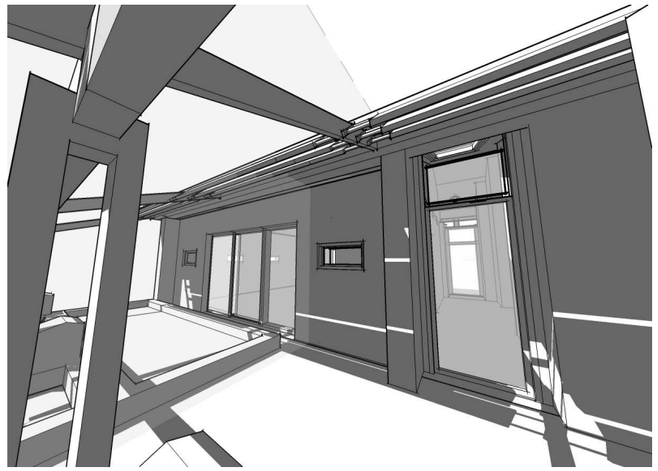
Brickwork external leaf, 100mm dense warmcell insulation and 200mm high thermal mass concrete blocks.

Concrete slabs made with fly ash/ pulverised fuel ash (PFA or FBA) to replace 10-50% of the cement; or ground granulated blast furnace slag GGBS to replace up to 90% (need to confirm if project is too small for this product)

The roof is to be an Extensive Green Roof (75-150mm deep) using drought tolerant plants that do not require irrigation – moss, sedums, herbs and grasses.

All windows will be timber windows by Rationel or similar with low e glass (or Pilkington's equivalent k glass) which reflects radiant energy back into the room, or Solar glass that prevents overheating. In this instance we have designed sun shades to the external structure for this purpose.

All timber will need to be from PEFC managed softwood.



Security

The existing palisade fencing should be reused to the form of a secure perimeter to the site, but this should be used to create a planting wall. If planting beds are formed then some defensive planting can be strategically placed and ivy can be trained to grow over it. We should be able to form some port hole windows in the palisade fencing so that even if the vegetation becomes dense allotment holders will be able to see through it to the allotment centre building.

The front elevation has few windows on it since it is a north facing wall. The large folding sliding doors to the south elevation could have internal timber shutters for additional security especially to the office.

Ventilation and cooling strategy

Part of the strategy for the building's natural ventilation is to use passive cooling through the evaporation process from the small pond and fountain placed outside the office. With the low level windows or folding doors open, cooled air from the evaporation process is drawn into the building through natural passive air displacement. Hot air in the building rises and is either collected by the heat exchanger to provide hot water or is naturally vented through the five roof lights.

We could also exploit this phenomenon further by laying earth tubes under the slab which would then terminate inside the building which in turn will draw in air from outside which is cooled as it is drawn underground and into the building by the stack effect.

Natural light

North light is let into the building via the clerestorey windows and is reflected up towards the white reflective ceiling from a light shelf running along either inside or outside the building at high level. Five small rooflights provide natural light for all of the rooms and these will also play an active part in the passive cooling and ventilation of the building.

Materials

Tiled throughout for hard wearing and no maintenance, no skirtings and to increase thermal mass

Walls: exposed brick and painted blockwork

Ceiling: British gypsum pre-finished white acoustic ceilings

Windows: timber

Doors: timber

Solar shading: timber

Painted blockwork: by allotment holders

Planting

The solar shading is held in place by galvanised steel posts and beams and these terminate in raised beds. These can be planted up with appropriate climbers that will naturally temper the building, connect it to the ground and enhance the solar shading.

Landscaped patio rear

The building predominantly opens up to the south where the best views are. The landscaped open area to the rear allows for spill over at events and a place where staff can take breaks and meet with allotment-holders on an informal basis. There is a fixed, curved, private seating area which will be in a sun trap and this also acts to screen the WC windows as well as the access to the external WC. All of the WCs will be accessible and unisex.

We have designed an external area that can be put under cover, creating a second pergola over herringbone brickwork hard-standing.

Mobility access and parking

The difference in height from the entrance to the visitors' centre is 3.8m. A series of four double 1:12 ramps, 5m long each and set into the existing bank; could provide the unit and the site with a dedicated accessible pedestrian entrance. We envisage that the cost for this would need to be met outside the building project budget.

We indicated a dedicated accessible parking position that sits in front of the building and also alongside the accessible path route and leaves enough space for passing cars coming in and out of the site. Another space could be created in front of the office if required without compromising safety.

Cycle storage

We have formed three areas for cycle parking. One is covered and makes use of the unmade ground area along the west elevation. Two cycle stands can be placed near the entrance and another six can be placed behind the white-lined accessible parking position. In all we are proposing 14 cycle spaces.