

# The Scottish Ecological Design Association Magazine

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## SEDA NEEDS YOU!

SEDA is incorporated as a Company Limited by Guarantee and has Charitable status. Decision-making for SEDA lies with the Directors, who meet regularly throughout the year for discussion and to plan a programme of topical and lively events to help stimulate the progress of ecological design thinking and action.

Planning of these events has previously been managed by a grant-funded Development Officer. Unfortunately this funding has now lapsed and SEDA is now solely reliant upon the generosity of individuals, organisations and companies in order to achieve our objectives and contribute to running events.

To ensure we can continue to inspire and lead the way in ecological design thinking in Scotland we have created a Development Fund and need generous donations.

To DONATE please get in touch at  
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Thank you.



SEDA was formed in 1991. Our primary aim is to share knowledge, skills and experience of ecological design. SEDA is a network and links those seeking information and services with those providing them.

SEDA has currently around 400 members predominantly in Scotland. Members include academics, architects, artists, builders, planners, students, ecologists, landscape designers, materials suppliers, woodworkers, and many more whose work or interest is concerned with design for a sustainable future.

SEDA is a charity run by a Board of Directors who are elected at Annual General Meetings and who meet every second month. SEDA is made up of a series of groups, each with a separate objective.

All of these groups are run by SEDA members - if you would like to be part of a group please get in touch.

Email: [info@seda.uk.net](mailto:info@seda.uk.net)

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## HOW TO JOIN SEDA

The simplest way to become a member of SEDA is to go to our website [www.seda.uk.net](http://www.seda.uk.net) and follow the links to 'Become a SEDA member'.

Alternatively please email: [membership@seda.uk.net](mailto:membership@seda.uk.net) with the subject heading 'New Membership'

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Dave Seel



## Building, Research and 'Do-Tanks'

### Dave Seel

It's good to be back in touch with SEDA membership after an overly long break, and we've chosen to highlight another aspect of design that has come to the fore in recent years: that of ways in which the act of building can be used as way to develop the builders' knowledge, to 'carry out research' into how you build, to develop new ways to put things together by individual or collaborative effort, to make projects that are more uniquely marked by their makers and users. It's self-build as the self - and community-empowerment.

This really came to the fore last year when the country's biggest arts prize, the Turner, was awarded to Assemble, a collaborative of young architects and builders, whose output and ideas were seen pretty universally as the clear winner in terms of artistic achievement over the 'regular' artists. This all happened about the time that Assemble's Amica Dall and Baxendale's Lee Ivett presented their work in England and Scotland at the 2015 SEDA Conference in Creetown. In this issue they update us on what they have been doing. Like many we were delighted for their victory, for rewarding people who work 'in the real world' and whose projects only come into being through collaboration and gives the resulting work some real integrity. Similarly, the 2016 Pritzker went to Chilean Alejandro Avarena, co-founder of ELEMENTAL, a self declared 'Do Tank' that most famously created cheap, attractive and self-adaptable housing for slum dwellers in Chile.

In the last few editions of the Magazine we have included several others already trialing this approach: Bruce Newland at the MAKLab encouraging us all to become builders through modern technology, and Invisible Studio and Studio Tog who use self-building in architectural education as a tool to develop new architecture as well as the understanding of the students as to how things are made, following on from the pioneering work of Rural Studio in the southern USA. In this edition we have Jamie McCullum's diary of being a participant in TOG's 2016 Summer Build on Tiree, to say how the experience works for those doing the building.

Image right;  
Courtesy: Assemble

The benefits of 'doing your own research', of forming your own 'Do Tank', has a good tradition in the many self-builders who get engaged and build to their own rules, often having to working against the proscribed ways of doing things from the authorities. This can deliver something truly unique, like Ally Dawson's Earthships near Kinross featured in the Building Study, or John Kinsley's buildgroup in Edinburgh. If anything, the success of this approach is more recognized in other fields of design, as Remo Pedresci outlines in how he has started running a University material science course based on the workshops of 'innovative disruptors' like Jean Prouvé.

Lee Ivett has had a hand in the setting up of SEDA's own BuildSchool, which has started to work in other parts of the country from it's original base in Milton, Glasgow. You can read about how we are now on the cusp of another build, at Bridgend on Edinburgh's southside, where our unique model of courses and training will deliver an 'bothy' for the volunteers for outdoor teaching, socialising and events. This has been developed with support from the Festival of Architecture, with a further bothy planned to follow on from it in a primary school back in Milton. We hope the model can develop and reach many more groups round the country, building up communities as much as buildings.

It all goes to prove that learning or designing something new does not have to be limited to the young, universities or the formally educated, but can be started by anyone, and achieve more than many conventional projects, if you give people the chance and look beyond the tried and tested, to challenge what has gone before.



*'I would like to offer thanks to all our Directors; Heather Harbison our membership secretary; Mary Kelly our event organiser; Paul Gilligan and Jamie McCallum for their help with the magazine; Sam Foster for looking after the web site; Arleen Sinclair, Gloria Lo, Gillies MacPhail, Finola Singleton and Tsvetomila Duncheva for all their work with SEDAbuild; Emily Stevens and Carlos Campos for their help with the 100 Sustainable Buildings Publication; Sandy Halliday for her work with the HL Memorial Lecture; and Matt Bridgestock who cannot quite escape, acts as our Company Secretary and his work on Urban Expeditions' Chris Stewart*  
Front Cover image courtesy: David McKenna



# Why We Love Workshops

Rowland Keable

Below Image  
Courtesy: Rowland Keable

The quickest way to understand how rammed earth works is by building something. Earth building of all kinds is a kind of alchemy, taking the most basic of materials, those under your feet, and transforming them into shapes we recognise as human, utilitarian or highly sculpted, structural or decorative. A workshop is an easy way to cover the basic points of material selection, formwork, different ways of ramming, detailing, building.

Teaching rammed earth needs to happen at all levels, although the technology is not patented and there are now plenty of resources to show 'how to do it', still many people working in construction or those who have never built anything have never seen it done, far less experienced the particular thrill of taking their first formwork off from a piece they have worked all day to make, not really understanding quite what they were doing before it was done.

Working with others and learning by doing show how rapidly you can build something in earth, the types of forms which work easily and what sort soil you can use. It's a big subject and there are lots of soil types

not all of which work. But a workshop starts with the basic principles, whether you are building in temperate or tropical climates, with clay or chalk, with site materials or adding others. It isn't always possible to build something 'real', often we build a test piece and show a detail like an arch or corner.

Looking at different soils, thinking about clay, sand, stones and water are all things, which are intuitive and can be shown. Touching and feeling, using your senses, tell you more than any amount of theory. Simple tests can show very fast what you could discuss all day in a classroom. Often building something is a better way to test a material than many of the tests that can be done, getting material to stand under its own weight.

In the case of the project shown, for the back walls of a greenhouse, the group of builders were mainly architects, more familiar with computer screens than shovels. We spent most of the first day going through the principles and practice of mixing soils and assembling formwork, in this case we used scaffold planks and threaded bolts. This allowed us to build up

rapidly after the initial setting out. Once the formwork and soil are prepared we start building, first with lime in the footing, up to the damp proof course, (there was no foundation to the structure). We started ramming mid-afternoon on the first day, and by the end of the day we had put up the second set of boards, up to 1.2m high.

Everyone felt exhausted but the next morning everyone was amazed to have survived the ordeal and realised they had plenty more energy: like a hot curry the work feels hot and hard initially but it doesn't get worse, your body able to produce enough energy to keep going.

So the second day was pure building, soil preparation, placing and ramming. With nine willing hands progress was quick. By the end of the day the wall was 2.3m high and the formwork was removed, about 12m<sup>2</sup> of wall built. This was the first moment that anyone had been able to see what they had been doing for the past two days!

On the last morning the group assembled the second corner setup on their own, with minimum advice, that's how fast you learn when you are practically led.



# Prototyping Public Space

Using the collaborative act of making to create both place and programme

Lee Ivett

At the SEDA annual conference in 2015 myself and Amica Dall described the role of participation and the means of engagement that has become an inherent part of the work which our two practices (Baxendale and Assemble) deliver. We positioned our work as being distinct from an emerging profession of community engagement consultants whose work often patronises and demeans the input of both practitioner and participant. Our initial engagements with community or stakeholders are focused on identifying need rather than merely asking what people want; the process is one of rigorous research through an active participation in the lives of people and place in order that ideas for the physical, social, economic, cultural and environmental enhancement of an area can be made. The second mode of mutual participation is to actively test potential scenarios through the act of making; also a device for building the capacity of people, as individuals or a collective within a specific community.

The prototype or a proof of concept is a fundamental component of the development process within the fields of industrial, digital and product design. Its primary purpose is testing the intended functionality, robustness and usefulness of the design in relation to human behaviour. Within architecture ideas relating to the role of buildings in changing behaviour and the use of the word 'prototype' are increasingly rare. When we discuss a

prototype it is usually in relation to material testing to ascertain the potential resistance of the material against external forces or to test new technologies.

There is an increasing and welcome realisation that the mere beautification of a physical environment does not, on its own, create a sustainable or an active, vibrant place. What most communities desire is a physical environment that provides an invitation to do things; people want to experience and participate in the productivity, creativity and activity of others whilst also developing their own agency. This realisation has caused me to see that no place can be successful without the consideration of programme. The programme of a place can be facilitated by the activity associated with buildings and environments, or it can be formally arranged and organised. A truly sustainable and successful place will often be enlivened and activated through a combination of both.

Over the last 10 years there has been an increase in the number of young architects delivering and developing self-initiated projects, often low cost, small scale and aim to communicate some form of societal concern. This growing form of practice has often been described as the 'activist architect' or as 'socially engaged' when described in progressive terms but has also been criticised for being a catalyst for the 'pavilionisation of

architecture' whereby the temporal nature of some of this work is actually of little consequence and degrades the potential role of architecture in its ability to create a permanent, meaningful structure for life.

There is however in my experience and my opinion no reason why the temporal cannot be a useful mechanism for conceiving and ensuring the longevity of that which is intended as permanent. The temporary project can become a prototype through which a range of possibilities within a community can be tested at a scale and degree of complexity that is relatable to the skills and capacity of the local people. The role of the architect and designer in this instance is to develop a beautiful, useable and well considered object that is able to facilitate the type of activity that the community wishes to test. The potential for participation in the creation of the object opens up other opportunities to share knowledge and build skills and confidence.

Three recent projects that I have been involved in have created conditions from which future possibilities can be tested and explored over different timescales. These projects demonstrate how the use of the behavioural architectural prototype becomes a useful device for generating permanent, sustainable and robust ideas, places and/or programme. The Test Unit summer school was delivered over a single week, The Pollokshields Playhouse has been delivered over a year and Baltic Street Adventure Playground is a permanent piece of social and cultural infrastructure for young people in Dalrnock.

Test Unit 2016 was initiated and developed by Agile City, a platform for research and events exploring grass-roots approaches to city development; founded by TAKTAL in April 2015. The project delivered a week-long intensive art, design and architecture summer school, transforming a derelict site in north Glasgow into a public space. The ambitions of the project were to prototype ideas in public space, build local capacity to initiate grass-roots projects and to place culture and education at the heart of regeneration. A blend of private and public, individuals and institutions the partnerships included; A Feral Studio, BAXENDALE, The Glasgow School of Art, Scottish Canals, Creative Scotland, EventScotland as part of the Year of



*“the results were affordable, sustainable and communicated just how rapidly an idea can be tested at 1:1”*

#### Images

**Fig 1:** Kids

Courtesy: Baltic Street Adventure Playground

**Fig 2:** Party

Courtesy: Jessie Earl

**Fig 3:** Girl with Hammer

Courtesy: Jessie Earl

Innovation, Architecture and Design, and Glasgow City Council’s Stalled Spaces programme.

The participants were split into groups and each team led by facilitators from varying disciplines (designer, architects, artists). Each devised a theme that explored a different aspect of the site (Occupation, Connection and Alternate Reality) and each then devised responses and interventions in relation to the site and its location. The aim of this project was not to create a permanent place but to demonstrate the value of this way of exploring and conceiving ideas for development. The results were affordable, sustainable and communicated just how rapidly an idea can be tested at a scale of 1:1.



Initiated to generate discussion about the form of public spaces within a community, Pollokshields Playhouse is a grassroots project that seeks to connect people with under-used public space through the temporary animation of a redundant site. A local steering group was created to conceive ideas that are tested on the site to create place and programme. The site exists as a laboratory for local people to take ownership of the future development of the community. My own role is to inspire and facilitate the construction of public art works and practical interventions in response to the ideas emerging from the community. Like the Test Unit project this does not seek to create something permanent or even suggest future possibilities for physical regeneration but instead creates a space for enacting scenarios that could be developed further, as their viability is proven and capacity is developed to find a permanent place within the life of the wider community.

well-being. This approach puts children at the heart of decision-making, growing their confidence, capacity for independent action and ability to affect change. The children choose what to do and can get involved in everything from the day-to-day management to the development of the site. Specially trained play-workers keep children safe, cook food on the campfire and support them to pursue their own play, from make-believe to construction projects. Throughout this process, the organisation has invested in relationships with families and neighbours. The collaborative culture and community spirit which has grown out of this has an enormous embedded value and it has the potential to be an active and critical part of the area’s future growth for years to come.

These three projects all work in different ways to create a scenario where professional practitioners and community participant

come together to collaboratively explore the value of their own ideas through their own agency. Whilst people are increasingly over consulted it is extremely rare to find situations that allow people to test their own ideas, to identify and manage their own risk and to self-generate their own environments. We live in a society that is becoming increasingly professionalised and bureaucratic; where most people feel unable to take any kind of action, no matter how seemingly simple or mundane it might appear. As agents of change within the built environment architects have a unique opportunity to utilise the delivery of physical change as a vehicle for improving place, but also as a vehicle for improving the lives of people. Inviting and enabling participation in the act of making in a manner that prototypes both place and programme as a sustainable mode of development so that capacity is created and knowledge is exchanged in a way that is genuinely empowering.

Baltic Street Adventure Playground has been designed, delivered and facilitated by Tuner Prize winning Assemble. The project is a supervised adventure playground for children from 6 to 12 years. Younger children are welcome with a carer or guardian. It was developed as an immediate activation of the site through play, allowing the children’s response to the site to inform the introduction of an environment that would invite curiosity rather than dictate activity. It is free to enter, children are free to come and go and play as they choose. It aims to address the child as a part of the community they are growing up in, and actively support and nurture physical as well as social, emotional and developmental



# Bath Street, Portabello

## A communal self build project - the story so far...

John Kinsley

The site was the starting point. I'd walked past it many times, it being in the street next to where I lived. I'd helped out a local community organisation who had looked at buying it a couple of years previously (their interest stopped when their lottery bid was unsuccessful) and as a consequence I knew who owned it and how much he would sell for. There had been some topical articles in the architectural press about collective self build and it had been an ambition of mine ever since working on a Walter Segal project at the Centre of Alternative Technology in Wales some years earlier.

I approached a builder friend to test the idea out. The site already had planning approval so it was relatively straightforward to decide what would work accommodation-wise and from that put some initial thoughts together on cost and programme. We posted a note on the Portobello community website inviting anyone interested to come along to an evening meeting in a local café and I put together a small presentation. In August 2013 a group of around 18 people convened to listen to our ideas. We talked about what the site could accommodate – I produced a set of very diagrammatic plans showing how a range of flat sizes could work within a four storey Scottish tenement format. We saw the building working similarly to a 'shell and core' office, with the exterior and shared interior circulation spaces being completed as part

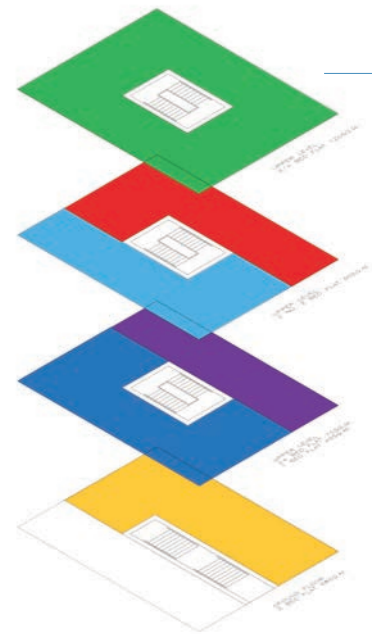
of the build, and interior flats being left as bare shells so owners could fit them out. We talked about character and quality, and in particular our aspirations for a sustainable build. We talked about cost, about programme and about how we could constitute ourselves as a group. By the end of the evening we had a couple of people who were very keen to take things further. A good start!

Over the course of the next few months the conversation extended to include other interested parties. A verbal agreement was made with the existing landowner for a sale price subject to us achieving planning permission. We talked to funding organisations about borrowing, and lawyers about setting up a organisation that would act as client. We discussed different models of flat ownership and approached the planners about the design.

By the spring of 2014 our group had coalesced into 4 participants. My wife and I were keen on the top floor space, which worked well as a three bedroom flat for ourselves and our two boys. The other group members wanted flats 2-3 bed flats for them and their families, which still left us with a 1 bed flat sized hole to fill, but by this stage we were confident that there was sufficient interest that we could bring someone else into the project in due course. So in September 2014 we made our planning application, which was achieved without much fuss in December, as we'd drummed up support for our proposals, and the planners were supportive of the modern approach, over the previously 'pastiche' proposal.

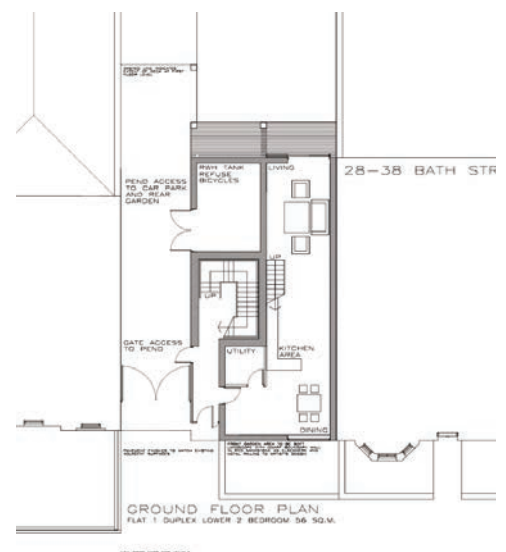
The configuration of the flats around a central stair provided a great deal of flexibility in flat size options, but fitting the owners' preferred size and shape of flat into the volume defined between the two adjoining buildings was a lot like playing the computer game 'tetris' and it was with some relief that a match was found that utilized the full volume of available space!

A high level of sustainability is a key driver for us. The scheme is designed to Passivhaus equivalent levels of energy use and uses a Cross Laminated Timber structural frame to deliver exemplary levels of embodied energy. The growth of timber for the frame absorbs 114 tonnes of carbon emissions – an average UK resident's



emissions for approximately 12 years. High levels of insulation render a central heating system unnecessary and power will be generated via a combination of photovoltaic panels on site and electricity procured from 100% renewable energy.

Whilst the project was being approved we had pressed on with talking to lenders and finalising how we were to constitute ourselves. After taking advice from both the Ecology Building Society (who had emerged as our preferred lender) and our lawyer we had agreed to set up a limited company 'Bath Street Collective Custom Build' which would act as the client. This company would borrow the necessary funding required for the construction and when the build was complete each of the individual participants would then buy





*“getting to know each other as a group is vital. Socialising together is just as important (if not more so) as business meetings”*

#### Images

**Fig 1:** Bath Street Collective

Courtesy: John Kinsley

**Fig 2:** Flat Plan Volumes

Courtesy: John Kinsley

**Fig 3:** Ground Floor Plan

Courtesy: John Kinsley

**FIG 4:** Front Elevation

Courtesy: John Kinsley

**Fig 5:** Front View in Context

Courtesy: John Kinsley



their flat from BCCB to allow the funding to be repaid. We spent quite some time working through the necessary Shareholders Agreement and Articles of Association trying to foresee all the potential pitfalls we might come across – what would happen if one of the parties defaulted on their borrowing repayments, etc. This proved to be time well spent when one colleague pulled out of the project, but he was immediately replaced with another local family who took over the interest not only in his 2 bedroom flat and the adjacent 1 bedroom flat, and when it was redesigned into one large 4 bed flat we had a full complement again!

Now it was now ‘squeaky bum time’ in terms of committing to the project and buying the site. A number of us had already sold up and moved into rented accommodation in order to raise the funding we needed to buy the land, which was eventually purchased in June 2015. The next few months were spent finalising the design prior to going out to tender. We had a couple of main contractors prepare outline costings to review against our budget. We engaged a former colleague of mine, Paul Jenkins of Create Engineering to provide structural engineering support and we selected a Spanish company, Egoin, to supply the CLT frame. We met with materials suppliers, Reglit (who supplied the cast glass we were proposing to use), and services subcontractors and potential suppliers. When we went to tender with three local main contractors in the Autumn the best tender return was from H.M. Raitt and Sons, a family run contractor only a couple of miles down the road. As this was about 5% higher than our budget we spent the next weeks fine tuning the design and retendering some elements to bring the costs into line. We still had to finalise the loan from the Building Society and despite

having been in close contact with them for the last year or so, there was a lot to be resolved. But eventually, by April, we were at last ready to start building!

**What have we learnt as a group from the project so far?**

1. Things take longer than you think (especially if they involve the council)
2. Getting to know each other as a group is vital. Socialising together is just as important (if not more so) as business meetings. You need to be comfortable being frank in each other's company.
3. Celebrate the good things. There will be enough difficulties and problems to contend with. Holding a long term vision of what it will be like when you are finished will keep you going through the hard times.

4. You will spend more money on accountants and solicitors than you think you ever should.

5. You will need to put more of your own money into the project than you expect. Three quarters of our participants have sold their homes and moved into rented accommodation to make this work.

6. It might not feel like it sometimes, but there is a lot of support ‘out there’ for the project.

7. As we move onto site (piling is now completed as of mid September) we are conscious that we face the most challenging period for the project and our ability to deal timeously with issues arising on site will be critical. At the same time we can now see the physical embodiment of our aspirations taking shape before us. An exciting few months are ahead of us!





# In Near the Deep End

## Taking on a Scenic routes project

Sean Douglas & Gavin Murray (with Oliver Chapman Architects)

The project at Laggan Locks is a collaborative work by Sean Douglas & Gavin Murray (SD-GM) and Oliver Chapman Architects (OCA). It forms the second phase of Scotland's Scenic Routes initiative, originally launched in 2013, which aims to enhance visitor experiences of Scotland's landscape, enhance rural economies and in particular to showcase young design talent. The Initiative focussed on existing tourist routes with successful Phase 1 projects located in Loch Lomond and the Trossachs.

Following the success of the first phase, Scottish Canals were offered the opportunity to propose sites for Phase 2, building on their previous work with OCA to establish a network of camping pods offering accommodation for tourists at a series of their spectacular locations. The site at Laggan Locks on the Caledonian Canal was identified as a potential visitor hub and the brief for facilities to complement the pods was presented under the Scenic Routes open competition.

Canals were keen to create a unique 'stopping off' opportunity at Laggan Locks for visitors travelling by car or bus along the busy A82 and also for the 30,000 visitors travelling the Great Glen Way by boat, on foot or by bike. The two spits of land protruding into Loch Lochy, particularly the southern one, allow visitors to engage with the Loch and its surroundings in an interesting way, offering stunning views to the south west. The client saw an opportunity to celebrate this with an installation providing shelter with additional facilities such as café, toilets and shower for campers.

SD-GM won the 2014 competition to design the structure following two rounds



of submissions and interviews. The process required a detailed design, analysing both the construction method and the likely costs of the project within a tight budget. The competition judges were also keen for designs to have a sustainable outlook, whether through materiality or ability to make structures that could be efficiently constructed through prefabrication. This would assist with building in what are often remote and isolated sites.

The winning design provides a seasonal café/kiosk that could be securely shut down during the winter months while still providing a sheltered viewpoint down the Great Glen. Toilet and shower facilities are available for visitors and campers using the new Camping Pods. The structure creates a simple sheltered space that can be used all year round. The key elements of the programme, café/kiosk and toilet/shower facilities are separated but unified by one roof to create a covered platform within the structure. This space forms a passage

through which visitors can catch a glimpse of the Great Glen as they approach and pass through into the covered view point.

In high season the Café will open up to the sheltered space. The use of monochrome materials echoes traditional Canal infrastructure and architecture. Charred larch cladding provides a robust envelope to the external environment while bright white timber boarding encourages visitors through the structure to the viewpoint. The design of OCA's camping pods share silhouette-like forms with the café, eroded and sculpted from cubic volumes and clad in the same charred timber to create an architectural family on the canal side. Sized for modular construction and transportation, the pods represent an evolution of prototypes that the client has commissioned and used at other sites along the Canals network.

The brief also called for a 'sculpture' to draw attention further down towards the end of the stretch of land jutting out into Loch Lochy. Part of the winning submission included a viewing tower 'folly' in this location, unfortunately budget constraints and concerns that the project may be seen to be overdeveloping what is a stretch of Scheduled Ancient Monument resulted in the project being scaled back to focus purely on the cafe/facilities building.

Following the competition stage SD-GM were invited to meet the client and OCA who would be operating as a 'mentor' under



*“the initiative is structured in such a way that it actively encourages competition winners to be involved as possible from design stage through to completion”*

## Images All Images

Courtesy: :David McKenna

the Scenic Routes Initiative, providing guidance and expertise where needed. The Initiative is structured in such a way that it actively encourages competition winners to be as involved as possible from design stage through to completion.

This approach to running a competition is unusual, particularly in the UK as there are few opportunities for young and untested architects to explore their ideas beyond the drawing board. While both of us are in full time employment with architectural practices and have seen numerous buildings constructed, this offered the first opportunity to see our own ideas through to fruition. As a competition structure this requires quite brave clients and mentors who are willing to trust young designers based purely on their design ability at competition stage.

We developed Planning and Warrant drawings and Tender information in tandem with OCA who were producing their own information for the camping pods. During this period we undertook a review of the design to adhere to Historic Scotland's concerns about building on a

Scheduled Ancient Monument and adapted the design to suit SEPA flooding concerns. While we have both worked on projects at varying stages in the Plan of Work this provided us with numerous challenges that had to be addressed in a short time frame on a delicate site. Generally we have been involved in larger projects where there are perhaps teams of people working on them. Having to deal with each issue in turn while still maintaining a full time job with another practice created a pressurised situation that was eased perhaps due to the fact that there were two of us to share the workload but also through OCA's overarching management of the project, ensuring each issue was addressed as appropriate.

Due to the nature of the NEC contract used by Canals for their construction projects our role (and that of OCA) was diminished once site works commenced but regular site visits and meeting still took place offering the opportunity to comment on construction and detailing as it progressed. The site's remote location meant that visits were carefully programmed to coincide with key stages in

the construction process; the pouring of foundation slab, arrival of prefabricated timber cassette panels and roof, the charring of larch cladding etc. This allowed us to gain a real understanding of the construction process on a small and manageable scale.

Having OCA on hand in a mentoring role allowed us to develop the design in the knowledge that we could benefit from the past experience they had working with Scottish Canals on projects of a similar scale, delivered under similar contracts. OCA's presence obviously gave the client comfort that the project was both being delivered by young architects as per the aims of the Scenic Routes Initiative but under the watchful eye of an architect they had a close working relationship with.

Given the nature of the family of building we were able to share certain detailing principles and learn from OCA's previously constructed camping pods at the Kelpies, developing the design where necessary. Key details of certain elements that were common to both schemes such as the charred timber cladding were discussed at length for example with OCA keen to develop the detailing following on from previous projects. Having worked on projects at detailed design stage in our respective practices we were able to bring our own knowledge to the table and agree a detail that benefitted both projects.

The project has since opened to the public, with the camping pods also available for hire. Canals were pleased with the results and have since offered up sites for the third phase of the Scenic Routes Initiative following the success of this project.

Overall the experience has been an incredibly valuable one, offering us the opportunity to test our architectural ideas at full scale, independent from our respective practices. We frequently enter competitions with varying degrees of success but it's not very often that winning entries are constructed or that the designers are given a role through to completion. The initiative's third phase is currently under construction and we look forward to visiting the completed structures.



# Material Practices

*“Above all one should not sketch utopian projects because evolution can only result from practical experience, which speeds it on its way’ Jean Prouvé ”*

## Remo Pedreschi

Prouvé (1900-1984), the French designer trained as a blacksmith and was a highly skilled craftsman. He applied these skills to emerging metal forming techniques to create a unique workshop/factory that brought together both advanced technology and a craft approach to production. An enlightened employer he encouraged team-working, self-organisation, collective problem solving and design development through repeated prototyping. His output of buildings, facades, and furniture was prodigious, noted for both its design and innovation in materials and production technology.

‘For architecture to be truly constructed, the materials should not be used without a deep respect for their essence and consequently their possibilities’ Eladio Dieste

The Uruguayan engineer Eladio Dieste(1917-2000) designed and built a remarkable collection of contemporary structures and buildings that were highly expressive of contemporary architecture, minimal in use of material, economic and culturally appropriate, using traditional, indigenous bricks.

Both were disruptive innovators, embedded in design through making and challenged existing paradigms of design and construction. They sought for an elegance of form and efficiency through a deep understanding of process and materials.

The work of the Architectural Research Workshop, at the University of Edinburgh, adopts these ideas as its guiding principles, in programmes, encouraging ‘learning by making’ and promoting, through reflective

material practices, direct engagement with industry,

Practical construction workshops feature in many schools of architecture, where students work in teams to build. Usually it may be off-programme, i.e. not assessed and squeezed into a convenient week at the start of the semester, before the ‘real work begins’. Often the output is fairly crude or the designs have to be at least in part, prepared in advance by others. Generally there is no opportunity for reflection and development based on a nuanced understanding of material and process, in other words, material practice. At Edinburgh a 20 credit studio, located in the Architectural Research Workshop was introduced. It was based on use of flexible formwork for concrete - a rapidly growing area of research. Due to the inherent simplicity of its production: stone, sand, cement and water mixed at ambient temperatures, concrete is the most widely used and perhaps, misused material in construction.

It is easy to make poor quality concrete, more difficult to produce high quality. This makes it in excellent vehicle for the exploration of construction and material practice. The course was predicated on the use of textiles as formwork. To many builders and designers, used to the apparent control of rigid formwork, flexible is counter-intuitive. However it is not a substitute for rigid planar formwork –indeed the laws of physics dictate that flexible material can only resist pressure by deforming to a curved shape. Textile formwork requires a different way of thinking that challenges the conventional perception of concrete itself and is surprisingly effective.

Working in small groups over six weeks, students are introduced to both textiles and concrete, and their first outputs are usually quite crude. Through reflection and discussion, understanding and technique develops rapidly. After three weeks the group propose ideas for a large-scale piece. Through the remainder of the programme the students develop their design through repeated prototyping and testing: of form, mix design, textile material and construction detail. The students are required to submit a comprehensive report describing and evaluating their processes. These are then made available to students in subsequent years as a resource for techniques and ideas. The students become de-facto researchers. The knowledge base is now quite considerable. Parallel studies involve more explicitly scientific research with engineering students. These are organised differently and relate to masters and doctoral dissertations. However breaking with traditional engineering methodology, these projects also emphasise the importance making and production alongside rigorous experimentation and theoretical analysis.

Daniel Lee, a post graduate engineer, through iterative prototyping and testing, developed a structural beam whose complex geometry followed the flow of bending and shear. Extremely difficult to build with conventional formwork, construction is very simple. It uses less concrete, less steel reinforcement and less formwork materials than a structurally-comparable conventionally designed beam, leading to a reduction in carbon of around 35%.

The pedagogy has developed into a one-year master’s programme, not surprisingly called Material Practice. Students encounter a much wider range of materials, glass, metals and timber, and their associated processes. Following an initial semester in which the students spend time in a variety of workshops at Edinburgh College of Art, the programme then focuses on key issues such as the Circular Economy and the rapidly-changing relation between digital fabrication and craft.

The programme follows a similar process to Flash Research , short intense studies leading to full-scale prototypes:

research = design= construction.

Relating to the Circular Economy projects have work closely with users and suppliers to:



**Images**

**All Images**

Courtesy: :Remo Pedreschi

**Fig 1:** Concrete beam using fabric formwork

**Fig 2:** Doubly curved funicular shell

- Consider the effective utilisation of dredged material from Scottish Canals,
- up-cycle floor screeds that use ground and crushed glass into new and potential higher value applications
- develop effective applications for sisal fibres from East Africa.

A recent project focussed on the use of surplus or waste cross-laminated timber. Large pieces of CLT were provided by Edinburgh Napier University. How could the mass nature of the timber be utilised in a novel and practical way that minimises secondary processing? One idea was for a spiral staircase. The treads were cut directly from solid CLT. The treads are connected using a threaded steel rod providing pre-compression and forming a rigid column. The mass of the timber absorbs the pre-compression effectively. The design is not complete but the construction of the prototype establishes the key structural principle, gives a sense of the appearance and helps define the final design.

Students are currently constructing a timber roof using short pieces of plywood to minimise wastage in the standard sized sheet. The roof is assembled as an interlocking grid of repetitive components, locked in position using simple bolts for ease of assembly and disassembly. The design evolved through a series of smaller models and prototypes to examine overall form and joint details. Embedded in the design process was the use of digital fabrication. The roof consists of nearly 250 separate pieces, manufactured in under three days. The structure will be installed at the Tent Gallery in London for the London Design Fair.

Material practice also extends directly into construction applications.

In Edinburgh many recent buildings use stone in non-traditional ways. During a Knowledge Transfer Partnership with a Scottish contractor a novel concept for pre-fabricated stone was investigated . The proposal used the intrinsic compressive strength of natural stone in components 10 cm thick. Panels of bonded stone were assembled horizontally on tables and tensioned using steel rods passing through pre-drilled holes. They were anchored to the ends of the panel using specially developed details that also provided attachment to the primary structure. Once the tension had been



applied the panels could be lifted, transported and erected. The post-tensioning allows the panels to span floor to floor without additional supporting steel or concrete backing. The stone is easily recovered.

Through attention to process and careful consideration on the nature of materials as a

point of departure, as suggested by Dieste and Prouvè, coupled with physical experimentation opportunities for interesting routes to follow almost always emerge. It is perhaps not surprising then that an approach predicated on material practice leads to simplicity in process and efficiency in materials.



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# Lessons from live building

## A student's perspective

Jamie McCallum

Before moving into practice many students of architecture have never set foot on a building site let alone undertaken any work experience on site. This in my view creates a disjuncting between design and construction. Being eager to learn more about timber frames in housing, I decided to join the Tog Studio summer live build which offers an opportunity to learn first-hand how buildings are created. This year's event focussed on a contemporary extension to a traditional 'black top house', one located on the Isle of Tiree in the west of Scotland. Tiree is the most western of the Inner Hebrides, reached either by plane from Glasgow, or ferry from Oban. Featuring beautiful expansive beaches, low lying land and striking traditional black top houses. After arriving by plane for the second week of the build, we were whisked away to Kilmaluag. Alongside the partially constructed timber frame built by the first team the previous week, we caught our first glimpse of the existing half of the house named 'Four Winds'. Once on site we were joined by the other half of the team which arrived by ferry, it was then time to get on the tools!

### Peer learning isn't just for the studio.

Handshakes and introductions aside we were all issued with a high visibility waistcoat and a hard hat. A mandatory PPE requirement almost immediately unites our diverse group of individuals who each are at very different points in our architectural training. The hard hat and the high visibility jacket makes it feel real, and already a communal feeling, that no matter how experienced you were on site, everyone was together. My first task was working with the veterans of the first week, who decided one week of live building wasn't quite enough and opted for two weeks instead. Rather than being supervised constantly, participants were organised into teams, shown what to do then given a chance to get stuck into the challenge, with help nearby when required. Having only ever drawn a timber frame panel and never



actually assembled one, it was a rather daunting thought at first. Though working with participants who had built a few the previous week were able to demonstrate and lead the way without supervision. A change to the standard 'master and apprentice' process of learning that traditionally occurs on site. This is an empowering way of learning that exerts confidence in participants who have just learned skills. They then get the opportunity to pass on what they have learned, taking ownership and pride in their work.

*Figure 1: Learning from each other. Photo: Author*

### Wood is alive, it moves and twists

One of the main challenges about working on site is the change from drawing behind a computer screen to learning the characteristics about the materials. It is an easy task to draw a perfectly straight line on the computer but sawing wood straight can be challenging for the first time. It is worth noting that once the timber arrives to site, it has to be sorted for straightness. With the straightest timbers being used for the important sections in the building and the bowed timber to be used in less important roles such as dwangs. Wood is a living product, after being cut it continues to move because the moisture content inside the wood is always changing. This can change the size and shape of the timber so it is important to measure every piece of wood without just assuming it's a standard length. Under the traditional architecture curriculum it's rare to handle,

experience and work with materials you specify in your studio projects. By working with materials on site it can lead to a better understanding of designing with them.

*Figure 2: Checking the level. Photo: Tog Studio*

### Templates are not just for the drawing board.

The contemporary extension to the house featured a modern 'black top roof' framed with 19 roof trusses that are fixed on to the first floor. Due to the weight combined with the size of the trusses they were to be made in two parts, raised up to the first floor then fixed together in-situ. Each truss was made up of a wooden frame with two prefabricated plywood gusset plates at the bottom of each truss, filled with sheep's



*“having only ever drawn a timber frame panel and never actually assembled one, it was a rather daunting task at first”*

wool insulation between. The prefabrication created 38 (with some spare) gusset plates that were all identical. This would not have been achieved by cutting plywood traditionally on site. This repetitive task was made easily by a prefabrication from a CNC router in Edinburgh and then transported to site. Constructing trusses was a labour intense process involving many repeating elements. To avoid this becoming mundane, switching between different tasks on site allowed everyone to get the chance to create a truss. Instead of marking out each part individually, templates were created to speed up the building process and get a consistent fixing arrangement across each truss. This ultimately increased the speed that we could produce the parts at the same time freeing up participants to take part in other points of construction. Participants were encouraged to share ideas, identify potential problems and share better working practice. The idea of creating templates came from participants, the idea was then adopted. This empowered participants not there just to be educated but to develop and share ideas.

*Figure 3: Half of a roof truss being raised up. Photo: Tog Studio*

#### **The importance of a work life balance.**

Before we knew it, we were more than half way through the week and our half day on site had snuck up on us. This gave many of us the chance to explore Tiree in our afternoon off. From roaming around the island, surfing lessons and exploring the island with our cameras, we descended into groups and set about our various activities getting to know each other a little better in the process. With the weather luckily on our side and I set out to Balevullin beach to try surfing. The half day on site had given some much needed rest by this point, for another day on site the following morning. It also gave us a chance to get to know the place we were working in a little better. An important lesson to remember for later on in University and thereafter, working hard is important but enjoying yourself in downtime is just as important.

*Figure 4: Balevullin beach. Photo: Author*

#### **Teamwork**

Without the aid of a crane we were tasked to lift the trusses up to the first floor and once on the first floor. This required



teamwork and co-operation from all to ensure the safety while lifting them. Dividing into two teams, from people on the ground to people on the first floor we discussed how we planned to offer up the trusses. Once briefed, we were ready to offer them up. Once raised, they would have temporary timber bracing in place until it was fixed and could be safely removed. The first truss we raised up provided us with a great feeling of accomplishment that we managed to move this as a group. After raising the first few, we began to get into a routine, becoming quicker and easier each time. With teams on the ground assembling trusses and a team on the roof fixing and preparing bracing, the ‘Four Winds’ were behind us. Working with large parts where a slight breeze in the ground can become a strong gust of wind at height. It makes you consider safety for people working on site. A truly remarkable output on the final day.

*Figure 5: Photo: Week 2 team. Photo: Tog Studio*

On the Friday evening after the tools were stored away and we took off our hard hats off; it was time for a celebratory dinner over a job well done. The evening was spent reminiscing on fond moments which occurred through the week. Despite completing the timber frame over the course of the two weeks there is a sense of overwhelming accomplishment in doing so. There is now a well-established diverse network of likeminded individuals formed over a years of Tog live builds. Each member sharing a passion for learning from a hands on approach rather than just a textbook education. By being on site getting involved with the construction process it helps you understand the how it comes together on site more clearly which will ultimately help us become better designers. I now have a much stronger knowledge of timber frames and what is required to turn it from a drawing into a build reality. Personally think any architect in training should spend as much time on site, getting hands in if possible to experience this different type of learning. We eagerly await to see the finished house next year.



# SEDAbuild

## Ongoing Practical Learning

### Hannah Buss and Arlene Sinclair

**SEDAbuild: Ongoing Practical Learning**  
Following last year's extremely successful pilot conducted in partnership with LoveMilton SEDAbuild is moving forward into the next phase of its development. Having secured some initial funding from the Festival of Architecture SEDAbuild has embarked on two small scale sustainable builds for community projects, one in Glasgow and one in Edinburgh.

**Glasgow** – In Glasgow we are continuing our work with LoveMilton. LoveMilton are a community organisation set up to make Milton (a deprived area of Glasgow) a better place to live. We have been working with Chirnsyde Primary School in Milton to develop an outside shelter / learning environment where pupils can engage with the natural environment learning from all the things living and growing around them as well as each other. Designs have been developed with the help of pupils and staff, and is now nearly complete. We will be seeking the various permissions required over the winter with an intended build commencing in the spring.

**Edinburgh** – In Edinburgh we are working with Bridgend Inspiring Growth (BIG) - BIG is a community owned and run charitable organisation based in south Edinburgh. The building will be constructed by a timber frame with strawbale infill, lime rendered with a green roof. The entire process will be delivered by volunteers learning on-site in sustainable construction techniques. The bothy build is already underway and SEDAbuild Project Leader Arleen Sinclair highlights below how that is progressing, with associated Workshops you can join in on.

With all this new activity SEDAbuild has had to take a look at its organisational structure and is now in the process of setting up two SEDAbuild steering groups one based in Glasgow the other in Edinburgh these groups will be responsible for supporting projects in their region but will come together to further the vision for SEDAbuild as a whole. We are currently looking for people to join these groups if you are interested please contact Hannah on [sedabuild@gmail.com](mailto:sedabuild@gmail.com).

The Bridgend Bothy Building project,  
Edinburgh



SEDAbuild, with volunteers from BIG, will construct a community building using environmentally sustainable materials and techniques, to supply the community with much needed amenity space. Designed and built by and for the community, using low-impact materials whilst training volunteers in eco-construction and bringing innovative expertise to the area. Build participants learn by doing and experience a unique outdoor education experience.

The build is delivered via 3 ways - a training course with local volunteers trained in construction skills and completing a 10-week build program, plus a series of workshops/events delivered to school and community groups (Crisis, Skillspath) also through specialist weekend courses offered to the general public via Festival of Architecture 2016. Offering opportunities to a variety of demographics affords a rewarding and important mix of backgrounds, ages and abilities for learning and ideas development. The need for a building has arisen from 4 years of community consultation with input from around 500 people. The project benefits end users, builders and the environment. The bothy will be an open space utilized by all for classes, workshops, and gatherings also acting as the main meeting space whilst the 8-month renovation of the current space is carried out. There are also other environmental improvements alongside the main projects including renovation of derelict, overgrown, outbuildings by using healthy, natural, renewable, and local materials, so that the

ruins will be utilized and safe to use again.

Work started on site in the second week of August and we have done 17 build days to date. There are 2 paid employees on site at all times, 4 days a week with a maximum 6 volunteers a day. There are 17 volunteers who are coming on site on a regular basis - they have been recruited via a series of doorstepping, flyering in the local area and also via the Bridgend Inspiring Growth newsletter and other community organisations locally. We have recruited from the local community of benefit of Cragimillar, Niddrie, Moredun, Inch and Gilmerton area to solidify the already growing community, to create a sense of community ownership but also to prevent vandalism in the area. This has been very successful as the majority of volunteers live locally, and will hopefully continue to use the space long after the build is completed. The volunteers' age range and demographic is massively varied, creating an interesting mix of people for learning and skills sharing.

SEDAbuild has developed a relationship with Craigmillar based charity Action for Children who have provided the build team with 4 volunteers from the local area who are aged between 16-24 and are not in education, employment or training.

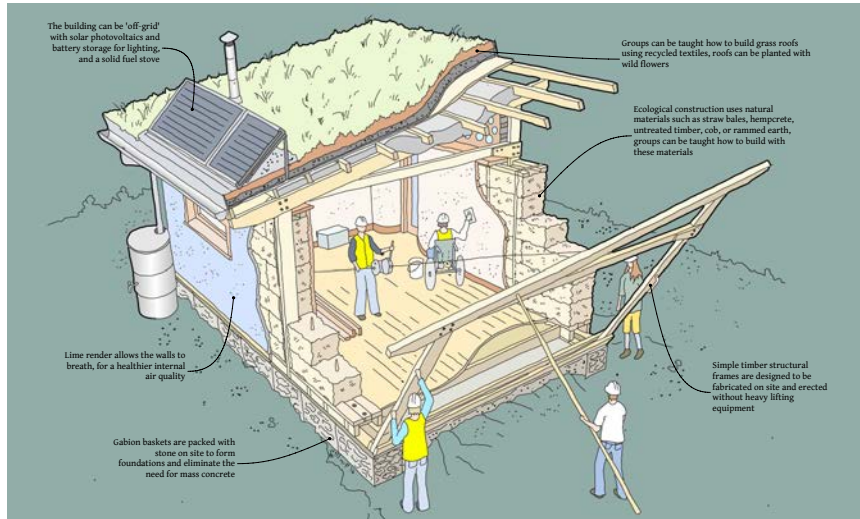
These recruits are learning about sustainable building but also basic life and social skills. They have shown real promise in their development in just a couple of weeks. The aim to find paid employment in



**Images:**  
**All Photos**  
 Courtesy: Arlene Sinclair  
**Infographic**  
 Courtesy: John Gilbert Architects

the construction industry for all involved. Other volunteers are taking part so they can gain confidence and to meet people and some are there because they want to build their own eco-homes.

As well as training in Health and Safety, Tool Use, and sustainable building systems, an external trainer has instructed the team about documentary film making and every day one volunteer is responsible for ensuring we are recording what is happening. Next week they will receive free training on Green Roofs from Dusty Gedge, and at the end of the month there will be a site visit to SEDAbuild's previous build in Glasgow. They will also get a free training course with Bee Rowan on Strawbale construction and will receive Construction skills cards to enable working in the construction industry.



**John Gilbert ARCHITECTS**

Ecological Construction for Community Self-Build Groups

All volunteers have made their own sawhorse and the team made a large work bench- invaluable for the timberwork we are embarking on now. Site signs were made by hand and hung around the area where needed. Reclaimed doors for use in the building have been sanded, and oiled. The volunteers have started prefabricating elements to form the timber structure of the new bothy. The large timber box beams are nearly complete and the large barn doors will be under construction soon.

So far we have cleared, weeded and prepared the site, which was previously an overgrown dumping ground in what were the old stables of the farmhouse. It all

required a lot of work, and there are still large tree stumps to be removed. As this site may have archaeological remains from the 15th century we have to excavate with a watching brief by an archaeologist, which will be happening (all going well) in September. After excavations have been done, the site will be leveled and purpose made gabion basket foundations will be formed. From there four timber trusses will be erected and the roof put on. The walls will be filled with straw bales and rendered internally and externally. The roof will be waterproofed, and a substrate for wild flowers added for a living roof.

The volunteers have learnt a lot so far. Just today I received an email stating this 'It was a fun week for me, I tried lots of new stuff. Happy to see the progress'. Another said... 'Thanks for all your work making all of this possible! We are very happy that we can be part of this project!' So not only is it good to receive positive feedback, but vital that we see the work is having the desired effect.

The aim is to complete by the third week in October, weather and archaeology dependent. There will be continued work on the existing byre walls with a series of lime mortar workshops and landscaping of the rest of the site will continue on in to next year.

Check out the courses on offer and sign up now at the link below, and check out our Facebook page for updates and opportunities, and get involved!

Recent courses have included;

Greenroof course – Led by Dusty Gedge from livingroofs – 1 day course on the 17th September

Strawbale course – Led by Bee Rowan from Strawbuild Ltd - 3 day course running on the 8th, 9th and 10th October. (Tickets for all our courses are on Eventbrite, search under SEDA)





# Building Review: Touchie Passive Solar 'Earthship' Lodges

## Designed and Built by Ally Dawson

### Ally Dawson in conversation with Dave Seel

A unique self build project for a pair of residential lodges, built by farmer Ally Dawson on his own land on the hills outside Kinross to his own designs, using a version of the American 'Earthship' model adapted to the Scottish climate and available materials,

Ally showed us round and answered questions on the various elements of the projects, and what it's like to try and work out and put together a building from low-impact techniques from scratch, all worked out through internet research, books and education on the job.

#### Design principles:

Passive solar design, built into the hillside using Earthship methods, with a green roof, rammed earth internal walls and as many recycled materials as possible.

'We wanted the Earthship to be designed that it would kind of hug the occupants and we felt that a curved fashion to the walls and roof would do that, and blend in with the surroundings as well.... The roof is designed as a curved timber diaphragm roof, which is inherently strong, [together] with the walls being curved... The underside curves to follow the top surface of the turf, it's a parallel profile over the roof...'

'My initial investigations were into an Earthship built of tyres, and I had some communications with Michael Reynolds [originator of the model] but what I realized was that what he was doing had plenty of merit, especially if you were close to big supply of tyres, and if you have a lot of cheap volunteer labour... but I got introduced to rammed earth which I thought is more aesthetically pleasing... and when you take the formwork off you're left with this monolithic wall...'

'We've got an old quarry on the farm, that's only 2 or 3 hundred meters away from where we placed the Earthship, as traditionally would have been the case, harvesting materials to that were local to you. I took a sample of the subsoil and sent it down to Professor Pete Walker at Bath University, he did his research, and the report came back saying ... its compressive strength was the strongest he had tested... there was a bit too much clay

within the matrix so he advised we added a bit of sharp sand.'

'I did some little tests first... ultimately you can do all the research but when you build the formwork and start ramming, that's when you get apprehensive, but the day has to come when you want to start building... The discovery comes when you take the formwork off, that's when you see if you've done a good job of ramming, you can be relatively confident as you go along that you're doing a good job... but when you take the formwork off then its displayed, that the team you're working with have done a good job.'

'We had one guy in the digger and two guys ramming using pneumatic tools, but it's long, laborious and monotonous work, and quite back breaking as well. The rammed earth wall is half a meter thick, which allowed us plenty of room to work and pack in more mass. It's a matter of putting earth to the front of the form because that's the only part that's going to be seen, any large particles will fall back and give you a nice fine face, and then you ram it'

'Initially you follow the books but eventually you get a feel for rammed earth, the amount of moisture that's required. You can add more, but then you



have to wait for that to migrate through the clay molecules and activate [them]. So you spray a bit of moisture on, especially if it's a sunny day and it dries out quite quick, and then you would wait and move it around with the digger, until you can see that it's ready to place into the formwork and ram'

#### Concrete internal columns

'Because rammed earth didn't have a British Standard the engineer required a bit of concrete in the structure... by this time in the build I was having to



*“drawings in themselves are not actually that useful. Ask any architect: in real life most buildings are designed in email inboxes”*

compromise significantly. ... I thought ‘we’re not building a multi-storey car park here, we’re building a lodge’ but we had to compromise, so rather than having a grey concrete pillar... we used white silica sand, and white architectural cement, and we also added a little bit of some oxides as we went up... Each of the pillars were done in one day, so there weren’t any cold joints, and we wanted to make them natural looking, maybe a bit like travertine.’

#### Re-used stone slabs to floor and timber flooring

‘You need to have your mass in the right places... out to the front, we have stone flags... they were lifted up from a bakery in Arbroath, and they were all sizes and depths, so they were difficult to lay, but they are really effective at absorbing radiation from the sun. They’re just bedded into quarry dust, and below that rammed hardcore, onto 200mm of insulation, a bit of cork, and a bit of foamglass.’

‘Rather than have stone all the way through we wanted to brake up the floor, and we used reclaimed gymnasium [flooring]... I think they came from a school in Glasgow. Initially when we were laying them we were going to sand them back to the lovely maple, but when people came to visit, we asked their advice, and we just left the little strips from the previous courts. It might not work in everybody’s house, but it tells a story’

#### Reused and green internal timber structure

‘The loadbearing posts are local larch and douglas fir, and the other timber are pitched pine beams, that have actually been reclaimed twice. They were taken from a jute mill in Dundee in the 70’s and were then used in agricultural building for the next 40 years, and then I managed to use them again. Pitch pine is very strong, but when you start to use uncertified timber or any material on a build that’s when the engineers start to get a bit nervous, so it was a bit of self certification, but have to identify that they are fit for purpose... it’s a bit over-dimensioned, and the grain from pitch pine is very strong, and [the columns] we just used the heartwood.’

‘... the connections for the timber were designed. They were over elaborate

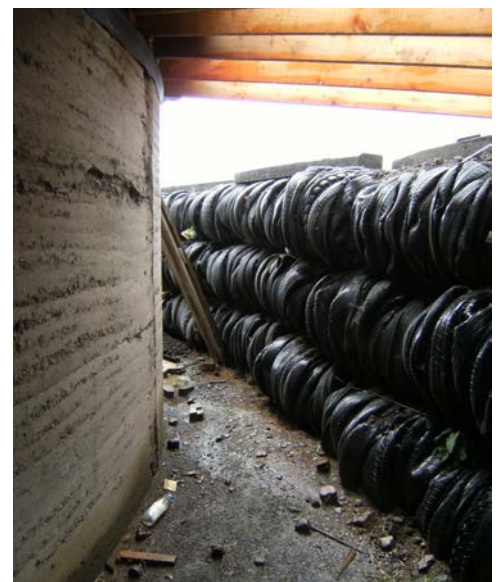


initially, and I suggested to [the engineers] this alternative design. It was just about the buildability issue, how when you’re site, how can you make it easier for you? And ultimately more cost effective.’

‘I had no experience whatsoever of building a house, far less an eco house... materials a lot of the time were reclaimed or recycled, but there were associated costs with processing these materials. They’re not always ready for their purpose and you might have to clean them up.’

‘You have to be motivated and have the inclination to learn new skills, as when you look at something as a whole it’s difficult to comprehend... but as soon as you start breaking it down into small parts, you develop a better understanding... If you have the tenacity to try and do it yourself, once you’ve completed, through all the blood sweat and tears, you feel different living in it. If

someone else came in and built it on your behalf, you wouldn’t feel the same way, your emotions wouldn’t be employed, because of the work involved to create it.’



# SEDA DOES...

100 Sustainable Scottish Buildings - Publication Update  
Richard Atkins

All Images Courtesy: Gill Smith

Firstly a big thank you to all those who have submitted nominations for inclusion in the 100 Sustainable Scottish Buildings publication planned for later this year, over 160 have been received.

The nominations are currently being sifted which is a tough task in the light of the high standard of submissions and the project team will soon be in touch with those who have nominated buildings – if your project hasn't been chosen please don't be disappointed.

The main aim of the book has always been to showcase the widest possible range of projects which include a more sustainable design approach. It is not a list of the top 100 as this would be an impossible task to decide. The aim is to demystify the belief that a sustainable approach can only be delivered by one type of aesthetic or one type of construction strategy.

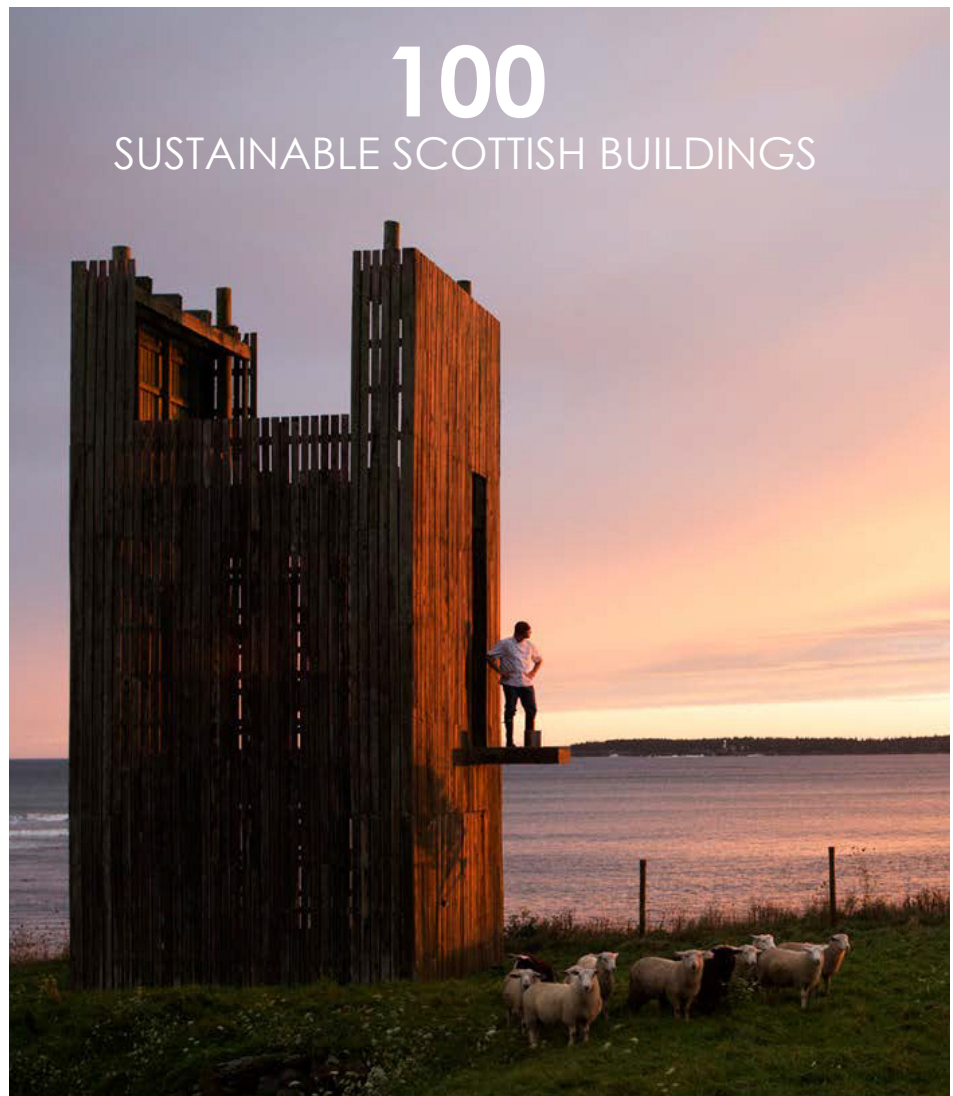
There are some categories of building where we have had a large number of entries, particularly but not unsurprisingly, with one off houses. Inevitably there will be some very good examples of housing which will be missed out to ensure we can include examples of as many other building types as possible. Those who have nominated projects will hear shortly whether we wish to include their nomination, we may well be asking for additional publication photographs and information in order to format the entry in order to publish before the end of the year.

Any queries please contact us on:  
[sustainablescothishbuildings@gmail.com](mailto:sustainablescothishbuildings@gmail.com)

Also please keep an eye on SEDA correspondence for notification on the launch of the 100 Sustainable Scottish Buildings this November.

For information on all our events and news please check our regularly updated website on

[www.seda.uk.net](http://www.seda.uk.net)



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## Living Building Challenge

Kirsty Cassells

Over the coming few months SEDA plan to host an 'Introduction to the Living Building Challenge'. The Living Building Challenge™ is an alternative building certification program, advocacy tool and philosophy that aims to measure the sustainability of the built environment, encouraging the creation of Living Buildings, Sites and Communities around the world while inspiring, educating and motivating transformative change.

The Challenge is comprised of seven performance categories called Petals: Place, Water, Energy, Health & Happiness, Materials, Equity and Beauty. Petals are subdivided into a total of twenty Imperatives, each of which focuses on a specific sphere of influence. This compilation of Imperatives can be applied to almost every conceivable building project, of any scale and any location—be it a new building or an existing structure.

The Living Building Challenge originates in the USA, with just over ten projects achieving Full Living Building Challenge certification to date and over fifty registered or receiving Petal Recognition or Net Zero Energy certification. There are only two registered projects in the UK & Ireland.

We are keen to promote the LBC here in Scotland as an alternative to BREEAM or LEED as it encourages more than just the building performance to be environmentally friendly. It promotes sourcing and use of local materials, consultants and workforce. It has a 'red list' of un-environmentally friendly materials that are not allowed in the build. It credits beautiful and engaging design, promoting the connection between indoors and out. It demands low energy use and onsite or shared community renewable energy production and storage. It encourages inspiration and education of environmentally friendly ways of building. It's an accreditation

that not only looks at how, where and what the building is made from, but also how the occupants will use the building and site, the lifestyle and habits of the occupants and the benefits to the environment from building to these ecological standards. It promotes projects that give back to the environment, and is a far more ecological design tool than those that look solely at the performance of buildings with no post occupancy evaluation.

We intend on introducing the Living Building Challenge, to encourage discussion and showcase examples of this alternative building accreditation scheme with the intention of launching a Scottish Living Building Challenge Collaborative in the New Year.

For more information, please check out the link and spread the word to those who might be interested.

[www.http://living-future.org/lbc](http://www.http://living-future.org/lbc)



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# SEDA REVIEWS...

## SEDA Urban Expeditions David Seel

Another strand of publications started through the Festival of Architecture are the Urban Expeditions that SEDA is putting together to map out routes round the contemporary sustainable design projects of three Scottish cities. Two are already up and running with more imminent.

The first tasters for this were two of the walking tours that took place during SEDA's Festival of Greendrinks in Edinburgh in May, as part of the Year of Architecture. If you were there, many thanks for coming, and you'll know what a great pair of afternoons these were.

First for the Colonies to Waterfront tour we led over forty people through the hinterland of Leith Walk to explore the various low and medium rise housing of varying densities that have been built there over the last 150 years, which described a fascinating story of social and urban change. There are special thanks to Port of Leith Housing for showing us the plans of the new Leith Fort site proposals just starting on site, and to the residents of Hawthronbank Colonies opposite who let us look into their well loved 150 year old versions. We got real insights on the day from Prof Richard Rodger (great social context from his MESH social history mapping project at Edinburgh University) and architect Gordon Duffy of Studio Dub (on how the housing works, and plenty of local colour). The tour took in prototype social housing, early modernist garden blocks, 70's mixed typologies, as well as the new and old colonies. And of course, the sun coming out for the first hot Saturday of the year really made it.



This was followed a couple of weeks later by Jim Johnson's tour to learn from the developments around the southside of Edinburgh of former City Architect and disciple of Patrick Geddes, Ebenezer MacRae. Again, we had a good crowd delving into areas between the Grassmarket and the University, and uncovering more little known gems of housing, greenspaces and infrastructure, with lots of input by Wendy Hebbard. This showed a whole other approach taken by the City to development of it's historic fabric a hundred years ago, in very different times but demonstrating how it could be done to be inclusive, as a prompt to what they could be doing today. A highlight was Julie Logan's gorgeous library in one of

MacRae's policeboxes on The Pleasance, cozy if not Tardis like.

Along with the Community Led Housing debate at Summerhall and the Bothy bus tour, the mini Greendrinks season was really enjoyable and well attended, and many thanks to Arleen Sinclair, Vivien Kitteringham, Mila Duncheva and Gloria Lo and more for helping on or leading things.

There were only so many tickets, but you haven't missed out completely if you couldn't be there. As said, you can still do these tours yourself by just going to the SEDA website where you can find the gorgeous plans to download, put together by DOTRun. These will be followed shortly by another set of tours covering larger areas of the cities of Edinburgh, Glasgow and Inverness, so you can jog and bike to the best projects in each town. In Edinburgh this will cover private houses, innovative University buildings, housing and chapel with lots of useful information. All will be available at the address below. So next time you have time in one of these towns, get running, walking or biking and take us with you, and discover something new.



[www.seda.uk.net/architectural-tours](http://www.seda.uk.net/architectural-tours)

All images courtesy Dave Seel & Paul Gilligan



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# SEDA CHAIR: The Chris Word



*How do you value the worth of SEDA?*

Chris Stewart

It is important to ask this question as it is all too easy to stray. Are we measured by our influence on the design community. Is it the number of members who pay their subscriptions. Do we help each other, offer support and enjoy ourselves. Can all our events promote SEDA. The answer lies in a mix of these, none of which can be measured without purpose, I remind us all of ours:

SEDA aims to promote the design of communities, environments, projects, systems, services, materials and products which enhance the quality of life of and are not harmful to living species and planetary ecology.

What is real value, for some it can be a large sum of money, fame or power. Having these can provide sustenance and even meaning but for the most part people hold value through dear things, whilst value should be based on our greatest need, life.

SEDA's purpose responds to life therefore our aims are important. These can be achieved by influence, in the main through events and activities, it is essential we are active and out there. This relies on vibrant contributors who have to be supported and encouraged. None of this can happen without the subscriptions of our membership. The sum of all these parts is an organisation of worth but each part has to be nurtured. Our strategy over the last few years has been an emphasis to increase awareness of SEDA through events. This has been very successful with a number of activities now becoming mainstream and entering the consciousness of Scotland's design community. We set out to develop four strong events, one for each season around which we could focus these are;

**Autumn** – Howard Liddell Memorial Lecture and KJ Award Exhibition: This year our lecture will consider the life and legacy of Rachel Carson. It will be held earlier this year on the 29th September at the Lighthouse in Glasgow. The KJ

Award exhibition will adapt to these new times and also benefit from an event in Dundee in November, details to follow.

**Winter** - Christmas Show and Tell: We intend to build on last years sell out event in Edinburgh using the same venue at A+DS.

**Spring** - Research Summit: Unfortunately this event floundered last year, huge efforts are being made to ensure it goes ahead this coming Spring.

**Summer** - SEDA conference and AGM: Last year Comrie was a great success, our team are currently hatching ideas to head further North this year.

Interspersed amongst our key events are individual activities centred around Green Drinks. This year we have also been fortunate to obtain funding from the Festival of Architecture 2016 and the Post Code Lottery to enable the following;

#### **Green Drinks Festival**

Walks and talks through Edinburgh considering subjects such as Colony Housing and the work of City Architect Ebenezer MacRae.

#### **100 Sustainable Buildings Publication**

Chosen from a list of member nominated projects.

#### **SEDAbuild Bothies Edinburgh & Glasgow**

The development and eventual construction of two learning structures.

#### **Urban Expeditions**

Cycling and jogging maps around sustainable points of interest in Glasgow, Edinburgh and Inverness.

This work has helped establish SEDA has a well known organisation in Scotland with greater opportunity to promote our raison d'être. To further progress our work we have strengthened our Board of Directors to include some dynamic

younger members. Each have agreed to take responsibility for the following groups;

*'we are a community'* is led by Emma Donnelly, Kirsty Cassells and Sue Manning. Their responsibility is for making SEDA an interesting lively organisation through events. This will include this years Summer conference.

*'we promote research and development'* is led by Hannah Buss and Richard Atkins. Their responsibility is for the dissemination of research together with fostering and developing research projects within SEDA. This will include the development of SEDAbuild

*'we inform the public'* to be led by David Seel and Josh Brown. Their responsibility is to inform the public of ecological issues and ideas. This will include the magazine and bulletins.

*'we influence policy'* to be led by Ann Nisbet and Paul Barham. Their responsibility is to promote SEDA's aims within the wider policy arenas and make connections with bodies who have similar aims. This group will become increasingly important as we aim to exert greater influence.

*'we are well managed'* to be led by myself and our treasurer Julio Bros-Williamson. Our primary responsibility to ensure SEDA is well run, membership lists maintained and finance accounted for.

None of this can happen without our membership and although financially we are as strong as ever our membership numbers are reducing. The focus for 2017 is to now capitalise on the great work carried out and increase our membership. We would like to ask that all members help and encourage others to join by understanding the importance of our purpose and explaining this to others.

**Please do this with a genuine smile, we have to enjoy our work.**