



The Scottish Ecological Design Association Magazine

Summer 2014



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METHODS OF MAKING





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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

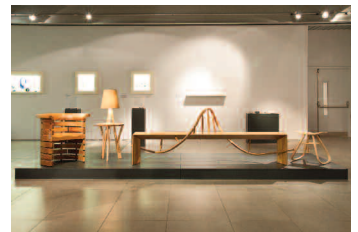
or interest is concerned with design for a sustainable future.

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 by emailing 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 and follow the links to 'Become a SEDA member'. Alternatively please email membership@seda.uk.net with the subject heading 'New Membership'

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David Seel



David Seel

Making ecological design tactile: the importance of getting hands-on

In this edition of the magazine, we are going to look at the beauty and nitty-gritty of how we make the objects we design, focussing in on the smaller scale often ignored in the green design debate, and how we can approach this ecologically. So much of what we use is not at the urban / rural scales examined in the past two editions, so we are looking at all kinds of making and design, including the products we use and wear, as well as the places we employ them.

Making is becoming quite cool in case you haven't noticed, from cake and beer to carpentry and 3D printing, all of which can seem much more immediate than engineering or architecture. A 'materials based' approach can be dismissed as decorative, but the surface properties, felt, smelt and seen, are the reality of what people are faced with daily. If we don't consider this worthy of as much thought as the technical performance then we are repeating past mistakes, like pursuing mass production as an end, with many of the resulting schemes ending up abandoned by their users over the poor quality of their environments. Equally, putting fancy finishes onto a cheaply built product is nothing positive.

In the commercial world, designers can be divorced from both the product and the people who make what they have drawn or specified. Increasing specialisation magnifies this, but some design roles retain more immediate control of material and method: foremost the work- and craftsmen, but also product and landscape designers, who often base their whole design around the nature or crafting of the materials they use and aim to speak to the users through this, whether with a swathe of planting or the shiny metalwork of a car.

Blind concentration on materials and methods is not in itself ecological. An emphasis on sourcing of materials should focus minds on what a project is made of, but can in fact distance designers from the end product, illustrated by the paperwork demands of BREEAM qualifications that leave a less time to design anything, however well specified. Just as important is how a project is put together as from what, and this is very hard to reflect in standards, but is so often crucial in whether it lasts a long time or is an inflexible, disposable product.

There are a host of considerations in developing a sensibility in the assembly of what we design. Such issues have been discussed in recent Greendrinks talks, like Bruce Newlands' presentation on the Maklab, and how that is giving mass access to digital workshop resources, or Chris Stewart's talk on the perceived importance of seeing 'the past life' of recycled materials. These sparked a range of responses, including Calum Duncan's initial opinion piece on how he approaches issues of materiality.

We then present a range of 'Makers' of different types and specialisms, all of who explain their attitudes to their ecological issues in their work. As well as architects and product designers, we have articles from architect-builders, ecologist-builders, carpenter-designers, artist-craftspeople, each with their own approaches. Some look for ways that could be scaled up for wider application, others make the case for directly getting hands-on to understand the objects they make, or look to enable others to do this through virtual or educational methods. Special thanks have to go to Fi Scott of Makeworks for suggesting so many interesting people active in the field, and who has a list of suggestions for designers on how best to work with the product makers and craftsmen we have all over Scotland. We hope the approaches presented can spark ideas for other projects, and can encourage further thought and debate on how we to make richer and better projects in depth, for both the hand and the eye.

[Dave Seel is an architect and a director at SEDA](#)

RIGHT: Sensory construction: Peter Zumthor's Soundbox Pavillion, Hannover world fair 2000
Courtesy: Thomas Flechtner, Dezeen



This issue of the magazine has been put together by David Seel, Paul Gilligan and Oliver Goddard. Our sincere thanks go to the contributors - all of whom have given their time freely and willingly - and to the various businesses whose advertising helps to support the magazine. While we hope you find the articles and features of interest we would point out that they do not always represent the opinions of SEDA.-

Front cover photos courtesy of: 1: Kathy Beckett 2: Makeworks/Studio Roro 3: Bernard Planterose 4: Martin Campbell 5: Kathy Beckett 6: Angus Ross.





Scottish Ecological Design and Build School

Love Milton and SEDA engage with the community

Hannah Buss

SEDA has recently received funding from the Big Lottery Fund Investing in Ideas, to develop a Scottish Ecological Design and Build School.

The grant application was submitted in partnership with LoveMilton who are building new community facilities in Milton as a community selfbuild. The new buildings will be constructed through a series of courses that will form a pilot for the SEDA School.

The key ideas for the school are as follows:

- To develop a network of building projects teaching short courses in ecological construction techniques. Enabling ecological buildings to be constructed cost effectively while providing a stimulating learning environment.
- To supplement these practical hands on sessions with focused design courses helping people to develop their design skills.
- To train both builders and designers how to build using sustainable building techniques. Exposing designers to practical building skills and builders to design skills.
- Building a base of expertise and trained professionals that will be able to influence industry.
- Grounding this educational programme within communities empowering people to improve their own environment and exposing different people to new ideas and ways of life.
- Mixing those who are able to afford to contribute financially to a course with those who are not.

The Pilot

The Big Lottery- Investing in Ideas have awarded SEDA £10,000. This funding will go towards employing a development officer for two days a week for 43 weeks, the money will also be used to begin to develop a technical library for the project. It will be the role of the development officer to work alongside the LoveMilton team to develop the courses they are already running in sustainable construction techniques, identifying and bringing in expertise from the SEDA network and elsewhere and bringing the courses up to a standard where people from outside Milton would be prepared to pay to attend the courses. As this project is a pilot, part of the role will be to monitor and evaluate the courses as they run and propose how the project could develop and continue identifying possible funding streams.

Love Milton:

LoveMilton are a local community organisation working hard to improve their community. Milton is a post war social housing estate within the North of Glasgow, it is an area that has been identified as having some of the greatest levels of multiple deprivation though out Scotland. Over the last five years LoveMilton have developed plans for a new community centre that they intend to deliver as a community self-build project.

BELOW: Work starting at Milton
Courtesy: Hannah Buss

Building a base of expertise and trained professionals that will be able to influence industry

By delivering these new facilities in this way LoveMilton hopes to encourage community ownership and identity while creating a lasting legacy of training, expertise and employability.

Over the next year, LoveMilton plan to deliver the first phase of this project that will consist of building itself and the SEDA School a new headquarters next to the proposed development site for the community centre on GHA land. This will provide Lovemilton with a new office, café, teaching space, storage facilities and workshop to allow LoveMilton to develop a presence on the site. These facilities will be appropriately located for when we source funding and reach an agreement on the land to where we will develop our larger community centre project. We aim to be on site by November 2014, where in the run up, LoveMilton will run an 8 week training course in the local primary school to enhance their garden and build an outdoor shelter and classroom. This summer, LoveMilton also plan to complete a timber framing course to provide the local community garden with an outdoor work shelter.

Hannah Buss is the Sustainable Build Manager for Love Milton and pioneer for the SEDA Design and Build School.





Changing our methods to change our housing.

Makar brings house design and timber construction together

Neil Sutherland

MAKAR exists to deliver wonderful buildings and places to our customers. The organizations methods have been evolving over the last 25 years. MAKAR itself was initiated in 2002 to offer construction support to my design consultancy, Neil Sutherland Architects (NSA) LLP. In the early days it operated as a construction management organization, without physical or employee resources. In late 2003 we moved to Clachandreggy, a ten acre smallholding on the western edge of Inverness, and began a steady and continued growth in both businesses. In 2002, it was me and one assistant. We now have an ever expanding team of 20+ people. In 2013, NSA was formerly incorporated into MAKAR, so we now operate as one stronger organization.

The work all began, however, in the early 1990's when I was based in Glenelg. There I was involved in designing and building numerous projects in the western Highlands. During this time we developed our understanding of the utilization of local timber. In about 1996, for example, we did little else apart from cut, dry, machine and supply timber products such as flooring and large section framing. In remote rural locations one has to be resourceful and pragmatic, particularly if your goal includes a step change in the quality of buildings.

BELOW: Workshop construction
Courtesy: Makar

Quality for us has always meant ecological, economic and equitable approaches to living and working environments. We have not invented the healthy reprioritization of better places in the north of Scotland, but we have been here to respond to and deliver the desire.

In 1999, my wife, three young boys and I moved to Inverness. I was offered a part time teaching position by Robin Webster at RGU, Aberdeen, and we had some larger design opportunities such as the offices for Natural Power Consultants in Dumfries and Galloway.

It has always been and remains difficult to find construction businesses motivated by the values of sustainable design, construction and place-making. We understood early on that if one was intent on avoiding the compromise of such values it would be necessary to take a different approach. If things are not taking the form you judge is necessary in the delivery of architecture as in life its necessary to change your approach - its necessary to figure out how to get things done.

House delivery in this country is in a state of crisis; a crisis of quality, quantity and aspiration. The construction sector generally suffers from a low profile, is continually underachieving and is prone to boom and bust cycles, doing little for the wider macro economy. Yet we are fundamentally dependent on housing and other buildings for

our collective wellbeing and in Europe they contribute 50% of total greenhouse emissions.

Misconceptions are common in relation to different approaches such as off-site construction. For instance, it is suggested that such practices will contribute to the continued deskilling of workers, tie up investment in machinery rather than people and leads to repetitive boring buildings and bored workers. Such misconceptions are similar to the large misunderstandings as to the forces shaping our built environment and what needs to change to allow better outcomes. For instance the bigger is better and cheaper fable in relation to volume housing, or at the other extreme the only way to acquire an alternative 'eco-house' is by a somewhat elitist neo intellectual architectural profession engaging whacky individuals and large budgets, which is often open to criticism and ridicule, with design competition winning 'alternative' housing at £4000 / square metre, for example.

The architectural profession seems stuck in the superstitious belief that design alone is the root of all future solutions in housing. A recent example: Rural housing on islands can and should be solved by way of yet another design competition. The inherently wasteful fact that fifty hopeful practices contributing perhaps around two thousand pounds value each in solving the theoretical £100k house challenge on some distant island is bizarrely lost in the collective enthusiasm. More disturbingly the fact that the real challenges of island delivery; lack of access to land, an increasing regulatory burden, lack of financial options for effective and economic house delivery systems, are left unaddressed.

Our experience is quite different from these extremes and unhelpful positions.

The key to our own approach is the integration of what are normally disparate elements; we control the whole process from project concept through design development including detailed technical and cost information for sub assembly manufacture, site assembly and management to completion. The MAKAR team is responsible for entire project delivery and our customers receive certainty over design quality, workmanship, program and cost. Mass customization and lean processes, involving repeat element relationships and endless patterns, anticipate variation in manufacture along with production efficiencies. Random



The architectural profession seems stuck in the superstitious belief that design alone is the root of all future solutions in housing

innovation is avoided in favour of an empirical evolutionary process; experience informing future refinement and practice.

Variation of task and outcome guarantee a skilled team engaged in meaningful work. Our workshop facilities, utilized 16 hours per day, on value adding manufacture guarantees good working conditions and high wages; our average salary before performance related profit sharing is in excess of £25k across office, workshop and site.

Well made buildings, which align design and actual performance, are the result of excellent making practices; so much of air tightness, for example, is down to focus and proficiency of those undertaking the assembly operations.

At MAKAR we can undertake the design, manufacture and erection of around twenty buildings per year in a mix of private homes and houses commissioned by the likes of the Highland Small Communities Housing Trust. With cost benchmarks squeezed as they are with affordable housing it would not be possible for us to deliver Building Regulation Silver Active standard units, as we are doing, if we did not employ our integrated off-site processes.

In recent years we have worked closely with higher education institutions such as Edinburgh Napier's Centre for Off-site Construction and Innovative Structures. It's important to recognize that regional timber product development needs to progress in association with its use, and I find it alarming that some regard the uptake of Cross Laminated Timber and Dowel-Lam

(Scottish version of Brettstapel) without a similar uptake in progressive methods of use and delivery. In our work we recognise that the means are closely related to the ends.

We are also close to completing a whole house carbon accounting methodology which we have been progressing with the assistance of a team at the University of East Anglia. We feel its time to more fully understand the embodied and other carbon issues surrounding project delivery. This work will both inform our own decision making; and allow our customers and others developing policy in this area to be better informed.

The context of our collective work in Scotland is a draconian regulatory system and a largely disengaged public. If we are to address the policy and economic issue headwind which shows little sign of abating, we need to reach out co operatively and make possible sustainable approaches which capture public opinion, support and prioritisation. The wide ranging, economic, social and community advantages of an ecological and contemporary approach to construction are not adequately recognized or rewarded for the range of environmental and public goods they deliver. Until these challenges are addressed including supportive policy frameworks and general investment in progressive best practice, mainstreaming will not happen and we will receive the housing we deserve.

Twenty five years ago while as an exchange student at IIT Chicago, 83 year old Professor Alfred Caldwell shared with us fresh faced students his experience of discussions with



Frank Lloyd Wright, Mies van der Rohe and Pier Luigi Nervi. The repeated question was – do your customers have you because you're a great artist? The answer and its similarity in all occasions which came back would have startled most art historians, Wright for instance answered hell no, my customers have me cause I give them more space for less money, if there's any art in the building its smuggled in.

I believe that in order to move forward purposefully and truly address the present house and place-making crisis in our country we need to be open to changing our approach. Crucially we need to engage more widely with forces of co operation and change across a more open minded built environment sector and informed public in order to deliver the inspired places we will then deserve.

Neil Sutherland is principal of Neil Sutherland Architects and founder of Makar

BELOW: Dunsmore House, Ardrross
Courtesy: Makar

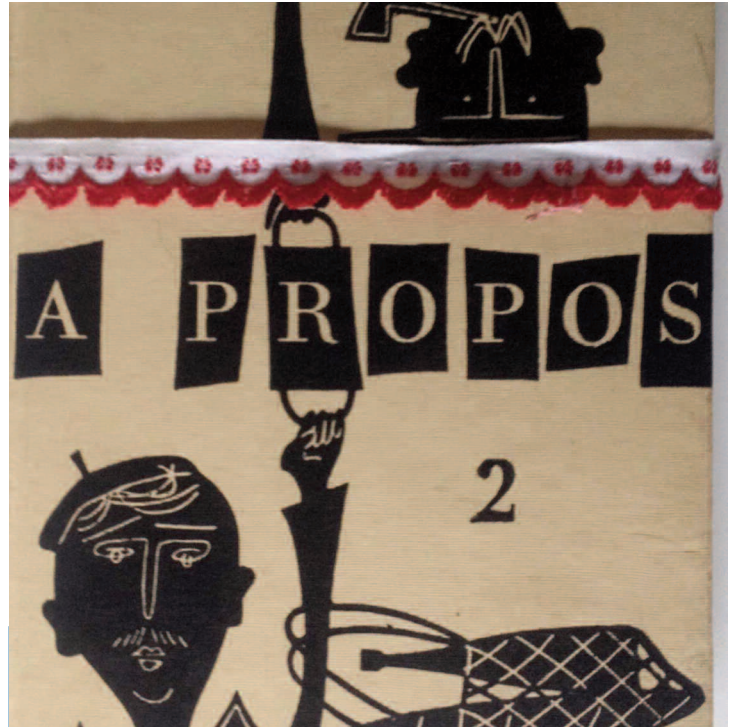


Make the best you can.

Calum Duncan

I was once given a second hand French book, carefully wrapped with only a ribbon. The hardback (*A Propos 2*) from the 1960's has a beautifully patterned cover of mute tones. It has a wonderful presence. I have probably ignored similar books hundreds of times. Now it has been framed by a ribbon and presented with great care, I am sold by its poetic presence. This book has not been recycled or upcycled. It is the same, but loved. Suddenly, this book is valuable. How we deal with the large scale things (the built environment) informs how we deal with the small scale, and experience of how we deal with our existing things has informed how we approach the new: Unfortunately we can't simply tie a ribbon around the limpest of buildings to make it valuable, but if we tune our senses to understand the value of the stuff of our built environment, then we will understand better the assets and opportunities that exist. We should be materialistic in the sense that we see the value in stuff. At the recently completed Edinburgh Centre for Carbon Innovation, I greatly enjoyed the consideration of stone repairs. How little can be done to make good the existing stone facades? After scanning every piece of stone by scaffold (after much cement render was removed), the stone takes on a new appreciation for the hard work it is doing. Similarly, I admire the example that I once found, somewhere within the SPAB website, for an approach to repairing a front door. There is no apology for removing a chunk of rotten timber from this historic door, and inserting a new piece, new to the door, but not new to the world. The door is well repaired and loved all the more for the existing patina that door handle retains. It is well loved and well used (I would present it with a ribbon).

The process of negotiating and agreeing how a building is to be made or altered could be described as managing the grey. Through this process I make a conscious effort to be guided by the philosophy of 'it depends'. The exercise of adapting and altering can as a process provide a motive for the material choices within



the new. In fact there is really no such thing as new, but always an alteration of something. My imagined philosophy of 'it depends' is as follows: Make the best you can with the material possibilities. Treat material with value, consider its weight, thickness, presence, texture and colour and use it how you feel it would wish. As far as embodied energy and locally sourcing; it depends how long it may be useful. As far as recycling; I think we should abandon the term and remember that every material has been somewhere previously, usually in an altered shape or form. While innovation and experimentation can be enlightening, the idea of sameness and backgroundness can be poetic and sublime. As far as quality and lifespan is concerned; I struggle. If we are certain a building will be usable and suitably adaptable, then lifespan is everything, but I equally admire the approach found in Danish housing (eg. Tinggarden, Denmark by Vandkunsten 1977-79) where the culture is not to be overly concerned with the detail, and construction is simple. There are greater, more important issues of social interaction and a sense of community with a lack of preciousness, allowing homes to be altered by quite simple means. Maybe by themselves, whether owner or tenant. These homes expend less energy in building capital terms as well as by the users, without the need for building more complicated stuff in order to use less energy. Equally important, this place will be loved and so maintained (efficiently).

All of the above is quite pragmatic, but amongst material choices we can thread poetry. Let's call it practicing the use of instinct and sensitivity. If we acknowledge our senses, we will find inspiration we did not know existed. A poetic language of materials is not reserved for an architectural elite. Most of all, see the value in little things and make the best you can.

Calum Duncan is a senior architect at Malcolm Fraser Architects and project architect for the Edinburgh Carbon Innovation Centre



Photos courtesy of Calum Duncan



Thinking and Making

Moving from 'exclusive designer' to 'village maker'

Roy Shearer

We live in a society that, knowing or not, all too often works to remove us from the act of making. I think that through addressing this shortcoming we can address the wider problems of sustainability that face the world today. My design work to this point has generally sought to tackle people's relationship with making, in various small ways. Small, because this aim can often be at odds with the values of the markets that designers, engineers or architects need to interact with in order to survive.

Despite every theory humanity might have constructed alongside it, matter is the medium through which the world is synthesised, and the means by which we interact with it, whether it be in the metallic mangle of a road accident, or the electrons congregating and scurrying from your fingertips as you tap in yet another text message onto the dormant glass of your phone. We need to get more intimate with materials, to touch, taste and recognise them, know where they originate, and what transformations we force them through in the pursuit of industry, and convenience.

I favour found items due to something of a personal obsession with resourcefulness and locality. And provenance - materials having had a life before, and continuing to have a life beyond the transient project I might be concerned with. Observable scars and marks are part of an ongoing story that often need not be hidden, and tends to enhance people's relationship with the object. There is also the fact that our material resources are (for now at least) limited, so design that avoids using virgin or energy intensive mass-recycled materials, and designing for disassembly, seem like sensible approaches. A product that can easily come apart also generally means a product that can easily be understood and maintained by anyone.

I delight in the peculiarities of sharing the design process with other makers, with the user, with the client, and with a public audience. All have their own particular needs and desires, and can bring a whole host of valuable experience and meaning to an object, way beyond any that 'superstar' designers might feel they bring alone. Through focussing on locality, I'm aiming to something towards the idea of a 'village maker', that is, someone known within my micro-community of residence, and able to respond appropriately and generously to the needs of my immediate community. Making use of local materials, processes, businesses and serving local clients,



all go hand in hand. Open design in particular, that is, the culture of sharing design 'source' code freely, without copyright restriction (or at least very permissive copyright), is very important to me. I'm a paid up member of that community, with existing open designs often forming the basis of my approach to a new project. This cooperative and philanthropic phenomenon is surely key in driving the collaborative approach to ecological problems we so desperately need.

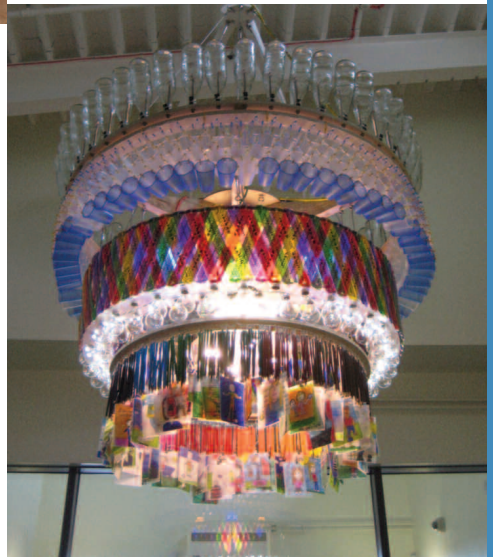
I use an open approach to widen participation in the design process, and this can also serve to improve people's understanding of the way our manufactured world functions. In this way my work has gravitated more and more towards education and facilitation.

BELOW LEFT: Timber ballustrade Glad Cafe
Courtesy: Patrick Jameson
BELOW: Ecochandalier
Courtesy: Roy Shearer

Engineering knowledge is often written off as the preserve of 'others' and it takes a cultural shift as well as the ongoing laudable educational shift, to counter. Meanwhile, on a practical level, through leaving the mechanisms at work in a device open to view, one can allow the user to better understand, and thus truly own, the thing.

We may be entering into a new definition of ownership, dictated less by economy or law, and more by familiarity with, and knowledge about, the things that we make. Along with the crusading march of the internet and the plummeting barriers to the means of manufacture, this might mean that we can finally move towards a world of abundance: abundant knowledge, giving rise to transient objects, using finite materials, intelligently.

Roy Mohan Shearer is an independent designer and maker. He tutors in prototyping



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Collaboration on Lindisfarne

The importance of how designs are made

Euan Miller

Many of Icosis Architects' projects embrace a clear attitude to the materials they use alongside an ecological sensibility. We have invited them to relate how this played out as joint projects with craftsmen in two different projects in contrasting materials. Firstly Euan Miller on a viewing shelter in Northumbria

We talk a lot about the sourcing of materials, but less about the quality and finish of the materials themselves. Not simply the durability, or even the tactile nature of the finished surface, but the attempt to imbue a richness to a material that might help raise the completed project beyond basic building. It is an objective that would be impossible without the input of talented craftsmen, but ever since reading the "Phoenix at Coventry", I have been inspired by the careful integration of different building and artistic elements that Basil Spence wove into the post-war rebuilding of Coventry Cathedral. The sculpture, the metalwork, the furniture, the glazed screens, the tapestries: all treated with the same considered attention and detailing. However it is the manner in



ABOVE: Entrance
BELOW: Detail
Courtesy: Keith Hunter

which Spence discussed, collaborated and ultimately placed his trust in the various artists and sculptors to create their own distinctive elements that makes the book's journey such an engaging story and the end result a thing of beauty on so many different levels.

So this approach to collaboration has become an integral part of our goal as a practice: to use local, natural materials and work closely with talented craftsmen to create a high quality product. Not always achieved, or achievable, but a goal nonetheless. With the knowledge that we will never get to work on anything as grand (or achieve the same results) as Spence did at Coventry, it is an approach that can and should still be applied to any scale of building project.

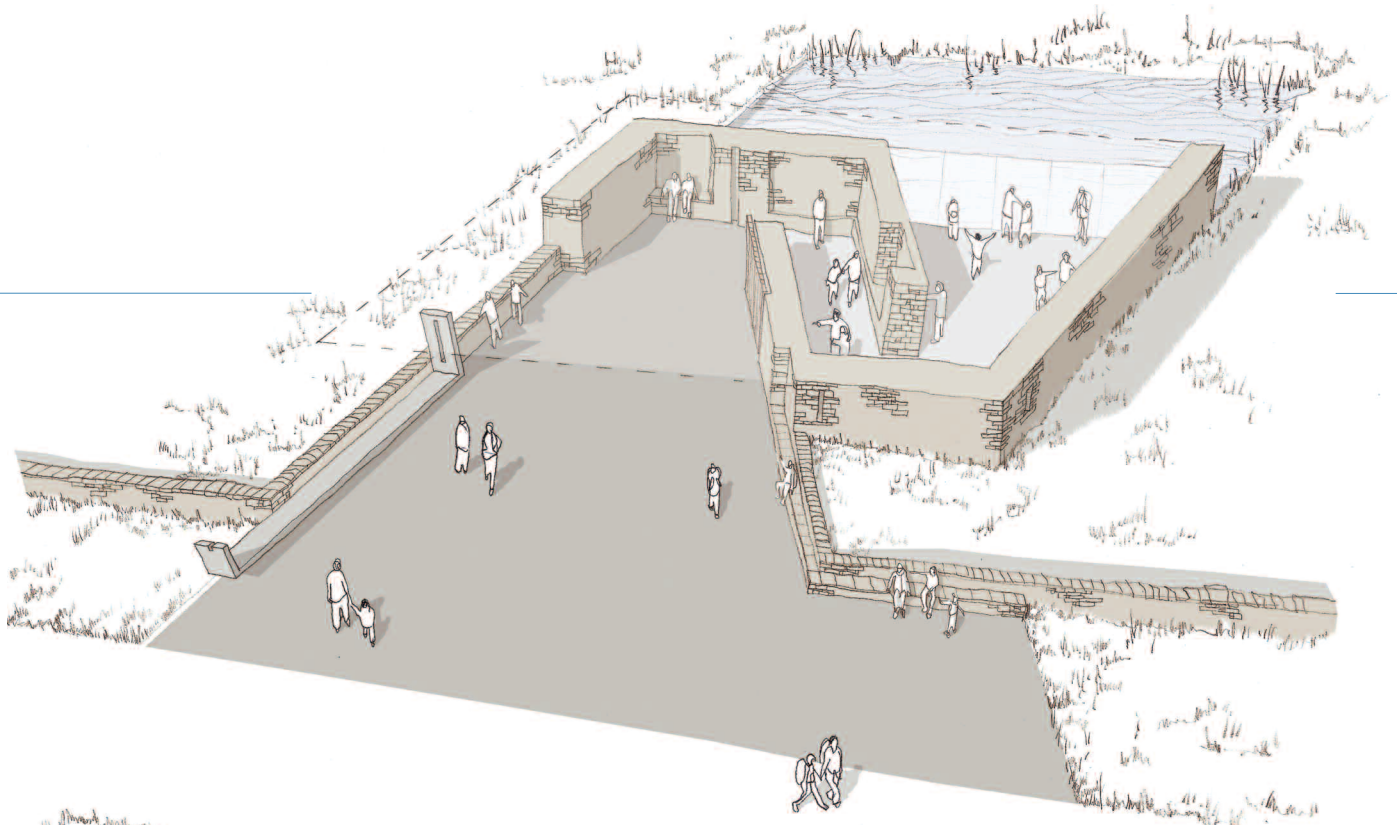
One example where we have tried to follow this is a new visitor building recently completed on the Holy Island of Lindisfarne. The building sits between the village and the castle on the edge of a field - a SSSI and Ramsar designated site (which is partly covered with pools of water providing an excellent habitat for a great variety of birds), and the purpose of the building is to focus the views of visitors out across the field and bird activity via a large window. It was an essential part of the brief that the new structure does not become a burden to the local trust, so the space is unheated and the electrical requirement is minimal. The sustainability of this project, therefore is not born out by

high levels of insulation or air-tightness, rather by trying to create a simple, hard-wearing structure with minimal running costs that is hopefully sufficiently rich in detail to engage visitors and help inspire them to value and conserve the special environment of the Lindisfarne National Nature Reserve.

Every effort was made to introduce the building as sensitively as possible within its natural surroundings and one key method of achieving this was to tie the new building in with the existing stone field dyke that runs alongside the road. The intention was to introduce a stone structure tonally similar to, but aesthetically different from, the field dyke and we investigated various types of local stone from Cumbria and York, before specifying Pitairlie stone from Angus. This was supplied (by Denfind) in tonne bags of 140mm widths and varying lengths and heights, which required to be carefully dressed and installed by the very patient masons on site to achieve the tight back-bedded dry-stone appearance we were looking for. They were also willing to entertain some of the other proposals to help make building a bit harder-working, for example:

- Pockets were left within the stonework at high level to encourage small birds to nest within the walls of the building itself,
- Externally, stone seats, and information





panels are integrated into the stone walls and one of the stone copes folds up to form the sill of the slot window facing the road, • a bench is turned along different planes before culminating in the stone panel at the roadside providing an initial sign for visitors to the building, whilst the steel frame above forms an aperture through which a view is formed towards the Lookout Tower on the hill beyond.

Internally, the walls are clad using specialist Jesmonite panels - a gypsum-based material bound with acrylic resin - the surface of which can be altered and manipulated to create different colours and textures allowing for elements of playfulness, achieved with real artistry by the producers of the panels (Grayconcrete) and their willingness to experiment and explore different methods of achieving the best result.

Similarly, the stone slabs on the ground within the main space have been carved with different local bird and animal footprints, which lead to their own information panels, further enriching the detailing and assisting with the interpretation. The stone carver was intent on getting the exact form of the different foot imprints, and went through several different samples, not just to satisfy those at Natural England, but out of genuine pride in their work.

The key aspect was collaboration: not building by instructions, but rather via a series of discussions

ABOVE: Sketch impression indicating the process
 Courtesy: Icosis Architects
 BELOW: Image of the main entrance
 Courtesy: Keith Hunter

The key aspect with all these features was collaboration. Not building by instructions, but rather via a series of discussions about how the different intentions might be best achieved within the constraints of the material and budget with those, frankly, who know much more about their own specialisms and materials than we do. The same could be applied to metalwork, or stained glass, but for us, on Lindisfarne, it was stone.

Euan Miller is a director at Icosis Architects





Tailoring timber

Distilling timber design in collaboration

Uniqueness in an age of standardisation, is a quality that clients both admire and embrace

Michael Davidson and Gavin McRae

Architect Michael Davidson and woodworker Gareth McRae together outline how they developed a dramatic element in a timber house is the borders.

In contrast to the current increased reliance on off-the-peg products, we enjoy producing bespoke, context driven design solutions. We place great value on the tailored solution and find that uniqueness, in an age of standardisation, is a quality that clients both admire and embrace. Experience tells us that a bespoke solution leads to an enhanced connection between client and product, particularly when it involves using natural materials.

The elegant formation and integration of design elements is our challenge - we work harder to make something look simple. Having clear over-arching design intent aids the development of the detail and the constructional solution. This clarity of purpose guides us as we try to retain simplicity of form, throughout the complications which inevitably occur during the course of working out exactly how to build it! The maker's appreciation of the inherent properties - strengths and



weaknesses - of the materials enables us to understand how to deliver a project most effectively.

A recent example is our design and fabrication of a Sycamore staircase, which formed part of the extension and alteration of a house near Eddleston in the Scottish Borders. The simple dog-leg design is driven by a desire to integrate the stair with the architecture. The lower flight and half landing extends the flooring material up to the sill of a picture window. The upper flight is as light as possible in order to maximise the daylight penetrating the hallway beneath, whilst simultaneously opening up views to the landscape. The structural glass balustrade maintains the open appearance and is capped in a slender sycamore handrail, which seamlessly assumes the role of newel post as it joins the sycamore floor.

The floating treads are a particularly good example of the effort required to retain simplicity of form. Each comprises 22 component sections of timber assembled around two 8mm diameter threaded steel rods which span between the stringers, allowing for lightness in the appearance of the treads. The anti-slip nosing detail was achieved using inset Scottish Oak strips, which did not come with a British Board of Agrément Certificate; but did undergo rigorous testing during development, using the actual sock-clad feet of the potential slipper!

ABOVE & BELOW: Sycamore Stair detail and completed stair
Courtesy: Chris Humphreys

It goes without saying that this project was underpinned by the desire to use natural locally-sourced materials. In this case, Sycamore felled on site and processed in Falkirk was used to form flooring and the lower flight. Sycamore from slightly further afield (felled near Selkirk / processed near Ancrum - both within 30 miles of the site) was used to fabricate the stringers, handrails and open treads. Sourcing home-grown timber locally is another benefit of the collaboration. It limits the time and energy which might otherwise be spent in persuading a contractor to use a potentially unfamiliar material or source.

For us, design progression tends to be a process of distillation and is best achieved through partnership. The final product is not imposed by the designer; rather it is a collective goal. This collaborative approach involving client, designer and maker, delivers a shared solution and does not concern itself with design ownership. It is one which we feel best delivers design integrity, quality and delight. Add to that uniqueness and we can all be entirely satisfied with the end result.

Michael Davidson is an associate at Icosis Architects.

Gareth McRae works at Real Woods Studios in the Borders and heads Gareth McRae Building Solutions



Rag and Bone Workshop

Engaging people and bringing used materials to life

Martin Campbell

After graduating from the Edinburgh College of Art I have gone on to establish my own creative enterprise the Rag and Bone Workshop. There are two diverse aspects within the Rag and Bone Workshop that serve to aid and inform each other.

First is my own day to day practice of collecting, creative tinkering, experimenting and making things within my workshop which then is feeds into the public engagement side of my work with frequent public workshop. I have recently been invited to work at prominent venues such as The Lighthouse (Scotland's Centre for Design and Architecture) and Dublin Contemporary (Ireland's leading Contemporary Arts Festival)

Secondly, I provide a hands on design consultancy service and have successfully completed commissions ranging from one off bespoke items of furniture to large scale interior design and installation projects. Throughout art school I meticulously kept sketchbooks. After leaving I soon realised only so much can be resolved on paper before you begin the physical act of making. I began collecting and working with found materials and whatever else I could get my hands on. Working with these materials freed up my process of making and I was less cautious and afraid of making mistakes. Making, for me has always been about the experience of doing it and serendipitous discovery became an inherent and welcome part of my working process.

This way of working greatly excited me - as well as working quickly through problems I could never have envisioned on paper I could capture energy and vigour in my three dimensional work that I rarely achieved on paper.

In 2010 I received a material sponsorship from global speciality chemicals company Perstorp after experimenting with their biodegradable Polycaprolactone. I found that combining their low temperature melting bioplastic with scrap materials offered many new exciting possibilities for making. This combination of materials not only allowed me to work quickly and efficiently but the bioplastic offered the possibility of rapidly bonding materials. I could create joints strong enough to make 1:1 scale functional objects - such as a chair in minutes. It was a form of 'manual rapid prototyping' and a bonus being the final aesthetic would celebrate and capture the joyful energy and excitement I was experiencing whilst working with these materials.

I now use this unique combination of materials to bring the same joy of making to the public domain. Caprolactone and scrap wood offers an accessible route to making for anyone and all skill levels and through this I hope people can rediscover the joy of making. Rag and Bone



ABOVE: Workshop process and sketches
BELOW: Recycled Trakke offices in Glasgow Bike Station.
Courtesy: Martin Campbell

Workshop events promote a spontaneous and improvised method of working which creates a liberating environment to reconsider (through making) the nature of the material objects we consume and surround ourselves with. If we provide people with some basic tools, a little time and encouragement to make their own objects we might indeed empower them to create a more meaningful expression of our contemporary material needs - a valuable insight for a designer!

I found that participants in the workshops would create their own versions of consumer products readily available and cheap to buy off the shelves but the difference being that these 'rough and ready' sometimes crude creations made with their own hands would be imbued with an emotional longevity that would far outlive their polished pre-packaged counterpart. Objects created using materials with rough finishes are also able to absorb the marks of use more effectively so as a result contribute to ensuring the longevity of the piece. The workshop environment I offer creates a platform for collaborative working and a playground for ideas to collide and form in a creative constructive manner.

We live in a consumer culture where we buy 'stuff' made 'somewhere else' and have little or no participation in the production or maintenance of these products. Predefined products fashion a passiveness that has caused a severe detachment from our material world. The Rag and Bone Workshop aims to create 'real' tangible experiences which touch people on a deeper emotional level and therefore create or maintain interest in such a large and distant goal such as ecological or sustainable design. I'm not saying that Caprolactone and scrap wood are the answer to all our problems but this approach does allow for new insights to be generated through collectively engaging in 'doing'.



Tips for manufacturing in Scotland

The makeworks project, how designers and producers can work best together

Fi Scott

Make Works began because we realised that despite a demand for producing things locally, finding the facilities and businesses to manufacture can be a confusing, intimidating and frustrating challenge. Here are some insights from our expedition across Scotland, visiting over 120 factories and fabricators.

1. Figure out what kind of relationship you are looking for.

Every project is different. In most cases, a few companies specialise in each specific process, trade or material. Having a better understanding of what you need or how you work makes it easier to match up with a facility, maker or factory.

Are you looking for outsourced fabrication, or for a facility to experiment with process and make it yourself? Are you looking for a long-term collaboration, or is this a short one-off piece? Are you looking for a one-stop-shop, or are you looking to subcontract one piece of production? Are you looking to directly commission makers to produce one of your designs, or are you looking to collaborate on an open brief?

2. Recognise what stage in the process you are at.

Are you researching? Are you prototyping? Do you need samples? Are you ready to go into full-scale production? Understanding this can make the difference between working with an open access facility, a master pattern cutter, or a larger scale manufacturer. Most will work from a sketch, or even just an idea, but if you can clearly explain what stage you are at the collaboration will be easier.

3. Make.

Developing ideas through drawings, scale models, samples or prototypes supports the production process. Thinking through making improves the quality and possibilities of what you can do and means you can tweak, edit and test things out. It also means you get a better understanding of what you are making, and can show samples to other people to get feedback. Facilities like sculpture workshops, print studios, MAKLab and open-access workshops are great to get started.

4. Research the process or material.

Explaining the processes or material, is part of making and manufacturing. We realised that factories are more likely to respond positively if you have at least a basic understanding of the process they provide, though this is not always essential.

5. Ask questions, and listen to the answers.

Never underestimate the value of a good technician. If you are a beginner to a particular process then ask questions about it. Technicians are experts in materials and processes so listen to them. Similar projects may have been done before, and if there might be a more efficient way to do something (saving you materials and time).

6. Be confident in the work.

Are you doing something out of the ordinary? (Probably.) Are you pushing the way a machine is typically used? (Amazing.) Are you planning on using a material in a new or different way? The off-the-wall projects are the ones that will be remembered - and if successful, highlight the skills and quality of that fabricator. Manufacturers consistently told us that they really enjoyed challenging projects and that this pushed their skillset.



7. Budgets and Timelines.

Ask about cost, quantities and realistic production times. Factories, manufacturers, and other makers are running a business and are used to answering these types of questions. Do not expect manufacturers to do you a favour, be financially prepared and realistic with timelines.

8. Be flexible.

If you are working with a larger factory to produce a something small then see if you can be fitted in off-season, or at the end of a production run. It might be more commercially viable that way. Keep in mind that these projects often take extra time to complete as you work through the process. Be patient if things take longer or something unexpected happens.

9. Pick up the phone.

From experience of often failing to secure appointments, we released that a phone-call is often more effective than a general enquiries message. Sometimes, just to ask for the best contact to email for your enquiry (do you need sample cards, or is it a production query?) a phone call means you can ask questions and get a response straight away. In rural parts of Scotland, often you'll have better luck catching someone on a landline anyway.

10. Don't judge a factory by its website.

Pixelated images, comic sans, splash pages, complicated navigation and lists of technical jargon (that you probably don't understand) are all typical traits of a manufacturing website. Web appearances are not everything in this industry - building actual relationships with real people is. Use the website to find the phone number and basic information about the process. Looking for any links to previous projects or others they have worked with can also be a good starting point.

11. Be committed.

Be transparent in your intentions, aims and logistics for the project. If it is a direct "send the file - have it made", then make sure to detail the specifications of materials used and exact dimensions.

If it is a longer-term project, make the effort to go and visit the factory and build a relationship. This can make the collaboration faster and easier as you will have a better physical understanding of the materials. You will also have a better feel of how the company works.



The off-the-wall projects are the ones that will be remembered

BELOW & PREVIOUS: Workers and workshop at Fyfe Glenrock Stoneworks
 Courtesy: Makeworks/Studio Roro

Don't flake out with a project at the last minute either. If something comes up (like your exhibition funding is delayed), or you need to change something (colours, design details, materials etc) just be honest about what is happening.

12. Embrace it!

Working locally means that you are creating a stronger network of skills and supporting the local economy. It means that you can meet face to face, and really collaborate on a project. The opportunity is there to work with some of the best makers, manufacturers and materials in the world and when it is your work coming off the production line that is exciting!

Fi Scott is a product designer and is founder and Design Director of Makeworks.

A directory of manufacturers and a longer version of this article can be found at: www.makeworks.co.uk



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Colour-Ecology: In search of eco-centric practices

Working out how to retake control of the colour production process

Kathy Beckett

An awareness of our resources and the repercussions of their use requires an ability to visualise imagined worlds and, the incredible skill of truly being with our actions. This living in the now can result in a greater knowing and understanding of what we do.

A sense of this kind of awareness, although embedded into my living practices from a young age, came trickling into my working practices when graduating from The Glasgow School of Art in June 2012. Like most graduates, I felt abandoned and set out on a quest to find a place that my creativity could fit into the world, and how the world could fit into it.

The bright saturated hues of my textile designs became more than joyful play with 'extreme' colour and began to tell a different story. These colours I so obsessively sought after were not often found in nature, could it be that this synthetic colour was hazardous?

Unearthing a whole host of devastating information, which I continue to delve through today, I sought to adjust my practice. Initially learning the basics of natural dyeing I came to understand that many commonly used natural colours such as Madder, Indigo, Cochineal and Logwood are imported from Asia, India or Latin America. These plants sometimes taking years to grow, used chemicals such as sodium hydroxide or sulphuric acid in the extraction processes or were even sourced from the crushed bodies of pregnant insects. Natural does not equal sustainable. The dyes I worked with would have to be local and renewable as well.



With this the seed of Colour-Ecology was sown.

In January 2013 I started to share some of what I had learnt in the form of a blog and talks. Colour-Ecology slowly emerged as a research and education project, which was granted Arts Trust Scotland funding in May and following this, House for an Art Lover (HAL) awarded the project with their AiRborne artist residency program. HAL gifted an area in which to grow plants, a studio for workshop facilitation and an artist fee. The project ran with this support until November 2013 which acted as an incubation period for Colour-Ecology.

Over the six months we designed, built and implemented Bellahouston Dye Garden from resources sourced within the park's grounds and grew around fifteen different plants including Madder (*Rubia tinctorum*), Woad (*Isatis tinctoria*) and Coreopsis (*Coreopsis tinctoria*). We then harvested these plants to dye yarns and fabrics during public engagement workshops and, with some plants taking two years to establish, we also relied heavily on foraging for plant matter. Both processes directly engaged participants with the natural world and responsible foraging/harvesting practices were encouraged.

Over the course of the season Colour-Ecology engaged around 400 participants within twelve workshops and an exhibition opening seminar: 'Living and Making Sustainability'. The workshop and seminar spaces became platforms for discussion in low impact living and, we were able to reflect on some of the systems that serve us.

The textile industry, for example, is second only to agriculture as the number one polluter of water worldwide. The synthetic dyeing process requires high volumes of water, in order to clean and process fibres to certain standards before they are then coloured with synthetic pigments carried by yet more water, and cleaned of any residue dye with further washing. Natural dyeing is not without this issue however, the major difference is that the toxicity of water pollution from the process is far less. Viewing the term pollutant as "an output

of any system component that is not being used productively by any other component of the system", we can start to imagine more productive ways of coping with our systems' waste'.

Alongside this, natural dye practices often use heavy metals as 'mordants' to help the colour fix to the fibres. Fleeces, yarns or fabrics are gently heated in a water solution containing the particular mordanting chemical such as Chrome, Copper, Tin and Iron. These may be used before or after the dyeing process, to fix and adjust the colours. The only mordant considered to be environmentally acceptable is Alum (Potassium Aluminium Chloride) a kind of salt that if used properly should be entirely absorbed by the fibres.

Alternatives are to grow our own dyes organically, composting dye matter so that it may become soil to feed a new season of dye plants. Dyes such as comfrey can be used as a colourant and by draining the dye bath back on to the garden it can also act as a green manure. It is possible to source pots that are no longer fit for cooking uses that perform a 'pot-as-mordant' where iron, copper or aluminium within the pot transfers the metallic properties associated with colour fastness in minute amounts. It is also possible to create your own mordanting solutions by making use of rusted metals soaked in a water:vinegar solution, which while still introduce a certain amount of metal to the water, are at least making use of a waste product.

By being conscious of a few choice issues related to dyeing practice, we are able to make positive and adaptive steps. These considerations can reduce; carbon emissions from transport, energy expenditure in the cleaning of water, quantities of methane associated with anaerobic respiration produced in landfill and, the embodied energies in the production of chemicals. These actions develop an awareness which, when applied to any creative process, I have come to define as 'mindful making'. Furthermore the process is well on it's way to a more self sufficient, closed loop model.

While I initially set out to investigate alternatives for use in my personal practice, I continuously wonder: could these





methods realistically sustain our present textile production? Arguably there simply wouldn't be enough land to grow dye plants and maintain the quantity of dyeing that occurs and, perhaps whatever space we do have should be used for food production. Indeed it is certain that the current rate of textile production and consequent waste, cannot be supported by our planet's finite resources.

It is much more than switching over from synthetically dyed yarns and fabrics to their naturally dyed comparative. From industry to consumer, we require a complete shift in the way we manufacture and why we do so. This shift will rely heavily on processes at all levels of production having full transparency. The fabrics used in Colour-Ecology workshops are often remnants or scraps from larger scale businesses or reclaimed yarns from industry, looking to the future it would be fitting to take self-sufficiency one step further, forming a textile farm growing fibres as well as dyes.

This could include wool, alpaca, hemp, flax, nettle and of course, natural dyes which would then link into a small scale manufacturing system. The farm might have a mill for these fibres and design studios to turn what we grow into products or resources for others. In its existence it could encourage less dependency on fragmented fossil fuelled systems, transitioning towards local self-generated resource use. The facility could also act as a research and education centre for low-impact textiles. This is a young idea but something I am hoping to work towards over a life time.

I can only imagine that this kind of scale is what our lower carbon future holds. Within this I am in support of smaller economies which do not intend to compete with today's manufacturing rates. These models although seemingly radical to our industrial growth society, may not be unique for long. They will set their own innovative and creative precedents to support our most human existence.

As the project evolves towards these aims HAL continue to support Colour-Ecology by allowing use of the garden space, which will develop into a resource offering renewable colour to the general public. We are also working with Urban Roots, a community led environmental charity in Glasgow's south side, to grow dye plants across two bases and run public

engagement workshops alongside this. These are Colour-Ecology's first steps towards a more positive, sustainable and enriched future which I hope for.

Kathy Beckett is a textile designer and initiator of the Colour Ecology project
 Web: <http://kathrynalicebeckett.blog.com>



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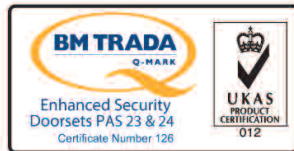
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Planting trees to make buildings to plant more trees

Construction and manufacture growing out of ecology

Bernard Planterose

Long before I ever nailed two bits of wood together, I think I had decided that trees and forest held the answers to many of the world's problems. After studying ecology and forestry (at Edinburgh Uni) in the 70's, I moved to the NW Highlands and spent the next dozen years growing (mostly) native trees from seed in a pioneering organic nursery, and planting them out in small woodlands of my own design throughout the region. Establishing new woods in this impressively deforested landscape was always about many things at once - restoring fertility, biodiversity and productivity to damaged ecosystems, providing shelter for buildings and livestock, draining boggy land and about making beautiful and more habitable places by dramatically altering their micro-climates, their micro-habitats, indeed their very ecologies, human and natural.

As an ecologist, I cannot help but recognize the distressingly massive destruction of the natural environment - indeed of world ecosystems - that Humankind wreaks in almost every activity from farming to construction both locally and globally. My life's work is about mitigating and compensating for that destruction in which I too play my part. I try to turn potentially destructive acts involved in growing things and building into opportunities that contribute in some way to ecosystem health. A personal journey which started with tree planting, developed into woodland management, then mobile sawmilling and shed building arrived at a critical point when I purchased a (small share in) an ex-FCS softwood plantation in 1993.

With my wife, we put what we had learnt about timber and building to use and constructed our first dwelling, a 20 sqm timber post and beam cabin from trees harvested and milled on the spot. Fifteen years ago we got our first opportunity to build a house commercially and since then each building project North Woods has been involved in has incorporated elements of landscaping, tree planting or habitat improvement. My pre-occupation is with the close integration of construction with ecological restoration,

with habitat creation and, if clients of the future allow, I'd like to move into integration of energy, waste and growing systems within the building itself. If I can't do it for others, it at least remains an ambition for myself.

Whilst falling somewhat short of this full-blown vision, I can at least put into practice a version of my design approach (ecological inhabitation) in my own plantation where we are now consolidating homes for three or four families. Thanks to an SRDP grant, we have recently built a new 230 sqm workshop, with electric bandsaw mill and 4 sided planer enabling us to process our own timber, manufacture post and beam frames and prefabricate complete small buildings. Everything is designed in 3D on Archicad software but there is no CAD CAM cutting system and we enjoy a hands-on, makers approach with attendant job satisfaction, skills development and all important versatility. With a 6 metre kiln and underfloor heating we also intend to move into furniture and bespoke component manufacture at a small scale. The Sitka spruce that we fell to make parts of our buildings is being replaced slowly with hardwoods, larch and Douglas fir which will one day supply higher value end products while simultaneously diversifying the forest ecosystem.

The story of the workshop construction, the developing forest community and its buildings is still unfolding and has to be

told elsewhere. Perhaps the most useful thing I can do here in this limited space is distill out three major strands of my approach to design that might have some general relevance to others.

Probably the very first of these, either when thinking about buildings for ourselves or out there in the commercial world is reducing scale. I offer clients quality over space to meet their typically tight budgets. Small scale allows money to be spent on the more ecologically sound products. It also allows a detailed artisan approach to detailing and timber-based fit out. It reduces heating systems dramatically, it increases connection with the outside (with nature) both visually and practically and, of course, it reduces the whole materials footprint. Furthermore it reduces site impact and maximizes landscaping/planting potential and habitat/garden creation.

My second major design approach is to maximize timber in all applications - currently dubbed "timber first". This is applied to cladding, structure, interior surfaces and to furniture and fit out if the client permits. This maximizes carbon fixation, maximizes timber demand and its natural corollary - woodland management and establishment. But we use only European and Scandinavian timber products. We never knowingly buy any timber products from Canada, the Americas, China, Russia, Indonesia etc. With this procurement policy we endeavour to ensure that we support only



I try to turn potentially destructive acts into opportunities that contribute to ecosystem health

the best forestry operations in the world. I wouldn't include Scottish under that heading but we use home-grown timber because it makes sense to use what we have and it has the lowest possible embodied energy.

My third major design consideration is heat retention in fabric. I'm much more interested in this than air tightness as am a fresh air freak and tend to utilize an outdoor deck as an extension to a house or cabin - to keep in touch with the birdsong, the weather, the sea, the mountains. Most of my clients are similarly orientated outdoor folk and, with the close connections between sliding doors and decks that my designs promote, it's important to be able to recover the internal temperature rapidly after a large volume of air has been vented from a house by an open patio door. I've never had to design for anybody who was looking for an even temperature either diurnally or spatially. In fact clients have always demanded the strong radiant heat of a stove and a variety of temperatures within the house combined with a lot of fresh air. To achieve these aims along with a very close connection with the outdoors, whilst minimizing energy requirements, we need large thermal mass and strong radiant heat from a carbon neutral source. These aims are achieved quite readily by concrete floors with underfloor heating (not then covered by timber), a large mass of solid timber in walls and ceilings and a wood burning stove carefully located at the heart of a building.

In the past we relied on heavy post and beam structures and timber linings where possible but now we are trying to utilize cross laminated timber (CLT) and large section glulam wherever budget will allow to dramatically increase thermal mass at the same time as improving ecological footprint in several other ways simultaneously. CLT reduces site times and therefore daily road transport which for us can easily add up to over 100 miles/day. It reduces site waste, increases general efficiency, reduces lorry deliveries (eg 100 miles from our last site to suppliers in Inverness) and reduces the numbers of different materials, specifically plasterboard and paint. The carbon emissions associated with lorry



transport from Switzerland are more than compensated by all the above before we even start to look at the carbon dioxide fixed by the material. We are already looking at state-of-the-art pre-insulated CLT and woodfibre panels which I believe will give us ultimate environmental performance, will free us up from relatively artless framing methods to focus our skills and energies on the details of design and the utilization of home-grown timber where we can make best use of it in post and beam elements, decking, cladding, fit out and furnishings.

My approach may be quite specific to our own condition of abundant (more or less) carbon neutral firewood, rural and remote sites (abundant land and long distance to

ABOVE: Workshop construction
BELOW: Locally sourced materials
Courtesy: Bernard Planterose

food shops and building merchants), a pre-occupation with fresh air and continuous contact with nature. In this situation it appears best to me to spend more time and effort on tree planting and making gardens than conforming to any 'external' performance standard - the constructs of a more bureaucratic and standardized world than I choose to inhabit.

Bernard Planterose formed North Woods Construction holistic design and build service





SEDA REVIEWS

Angus Ross- Tay Bench Angus Ross Studio

Angus Ross has been recognised as one of the most exciting furniture designers working in Britain since the early 1990s. He has a strong background in design and a creative flair for creating pure and beautiful furniture.

His studio-workshop specialises in the process of steam bending local undried wood. Traditionally steam-bending is used to make whisky barrels, wooden fishing boats and agricultural tools. Watching lengths of solid wood being hand bent into curvaceous forms appears magical and Angus Ross has elevated this into an art form.

IMAGES: Tay bench in construction and on display upon completion
Courtesy: Angus Ross



In 2012 Angus Ross was selected by Craftscotland to produce a one-off exhibition piece to be taken to SOFA Chicago 2012. SOFA (Sculptural Objects and Functional Art) is a prestigious international gallery presented exhibition held annually in Chicago USA. The bench was recently shown at Design Shanghai and is now with a distributor there.

The Tay Bench was designed to reflect the flowing water and rounded mountains of Highland Perthshire. The deceptively simple bench has a very slim profile with a sculpted surface which appears to have been moulded like plastic. The spiral of steam-bent oak fixed with hand-turned stretchers demonstrates what can be achieved with steam-bending.



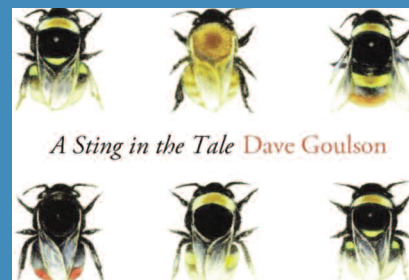


Book Review

A Sting in the Tale

Prof Dave Goulson

Words: Oliver Goodard



Although we may not all be aware of how fascinating honeybees are, we cannot deny that we are unaware of the importance of the pollination services and the economic rewards that they provide. However, if honeybees provide the pollination for one third of UK crops, we must concentrate our wider attention to ensure we understand the needs and threats upon the other pollinators.

Professor Dave Goulson's latest publication, 'A Sting in the Tale' is focused on the importance of bumblebees and their roles as pollinators. Goulson shares his experiences and explains the interesting characteristics of the bumblebee, far different to those of the honey bee and easily justifies why he has dedicated a life time's work to the research into these social insects.

Concerning facts surface and require pause for thought. Bumblebees have continually evolved over the last 30 million years to maximise their efficiency but cannot adapt to the rapid changes that are taking place. Out of a total of 250 species of bumblebee, 27 can be found within the UK and all are under threat from habitat loss, changing weather patterns, pesticides and disease. Extinction is currently 100 times greater than the natural rate and

only 2% of the UK's natural flower-rich meadows remain. It is alarming to hear that the rising demand for imported food is being satisfied by the exportation of unregulated bumblebee colonies from the UK, released into foreign environments to pollinate, spreading disease and disrupting the native populations.

Goulson conveys passion that brings hope to the future of bumblebees. He remarks on expeditions to New Zealand to unstitch and return bees that were once exported and how spaniels have been trained to find rare nest sites on Tiree. Within one month of establishing The Bumble Conservation Trust, Goulson managed to attract 500 members. The Trust continues to thrive, educating farmers in best practice and encouraging the public to participate in national research.

Bumblebees now appear more intriguing and mischievous. They are sensitive and in tune with their surroundings to the point where they can sense the earth's magnetic field to detect their location from home. 'A Sting in the Tale' is a fascinating journey into the bumblebee kingdom and another reminder that 'small is beautiful'.



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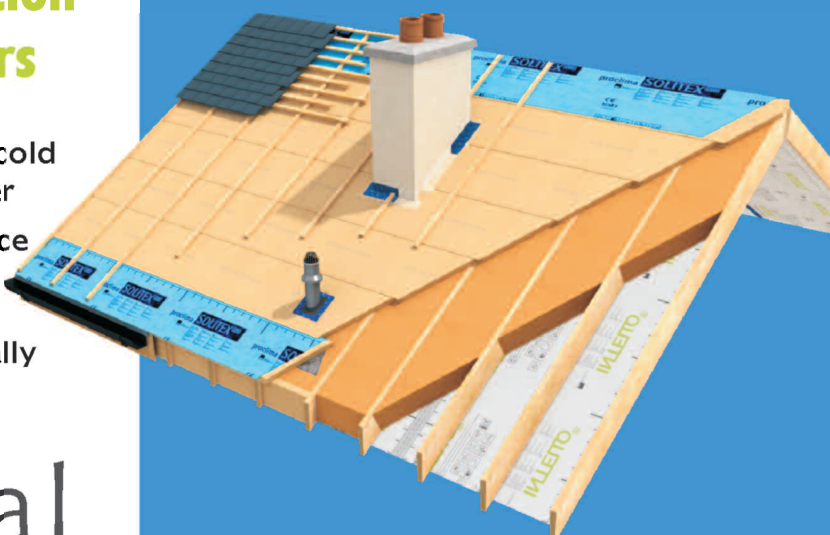
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SEDA DOES ...

SEDA Research Conference 2014
RIAS, Rutland Square
Review by Cathy Houston

For details of all upcoming events go to the 'Events' page on the SEDA website.

SEDA's first annual research conference was held this April. The aim of the conference was to re-activate the research section of SEDA by inviting both members and non-members to present their current research in ecological matters.

Professor Sandy Liddell Halliday was the first of two key note speakers, opening the event with a "Short History of Good Ideas." Dedicated to Howard Liddell, this was a packed presentation with wide ranging insights, identifying what she described as the "12 good ideas" in sustainable design. This included references to Rachel Carson who cautioned that a "war against nature is inevitably a war against ourselves" and Bill Bordass proclaiming "If we suspect a problem, we should talk it up and not talk it down." Sandy's talk concluded with an exploration of the Bhutanese slogan "gross national happiness is more important than gross national product."

The second keynote speaker was Sue Roaf who presented to the conference her thoughts on how to design a comfortable building with an emphasis on temperature and energy performance. Interestingly, she focussed on the analogy of the tea pot as demonstrating the principles of thermal change. This was helpful in illustrating why so many modern buildings fail by not addressing the issue of emissivity. Although she noted recent advances in modern paints and other technologies which could serve to address the problem.

Richard Atkins was the first of three speakers to engage the issue of how to measure sustainability using calculations tools. Seeing the bigger picture was his challenge to the conference. He highlighted that there are over 700 benchmarking tools in sustainable design as a vast array of software assessing a range of performance criteria. What exactly should these tools be measuring? Are these tools necessary? He referenced one of Vitruvius's most famous declarations stating that a building has three conditions "firmness, commodity and delight." In concluding, he drew attention to "delight" as one of the key markers in sustainable design.

Dr David Jenkins provided a technical viewpoint in the challenges of software modelling in building performance analysis. He reflected on how SAPs are no longer considered reliable however there are whole industries built on the output of this software. He cautioned "not all models are equal" referencing a range of issues to be aware of when using these tools. However he concluded, despite the output of these programmes being considered inaccurate, there are still elements of the modelling which are useful and can be taken forward in energy efficient design.

David Somervell introduced the conference to a specific form of measurement: the "Ska" rating as a means to help landlords and tenants assess the performance of refurbishment and fit outs.

Prof Branka Dimitrijevic steered the conference towards the social and community aspects of sustainable design, looking specifically at

a Linlithgow case study where an online portal is being utilised as a means to empower communities to engage in the decision making about the sustainable environment.

Tsvetomila Duncheva brought the conference to a close with her insightful overview of the "Fog Hive" concept being explored through her PHD studies as a means to extract water from the atmosphere, of particular use in the developing countries where water is in short supply.

In all, this was an informative and engaging conference. The conference compliments rather effectively the activities by SEDA in promoting sustainable design. By bringing together such wonderful and knowledgeable speakers in this open forum, it is easy to see how this could lead to other opportunities as a catalyst for further research, reenergising this particular aspect of SEDA's work.



SEDA Green Drinks Glasgow
Talk by Frank McAveety
Cafe Siempre
Review by Barbara Seel

Dragging folk out to Partick on a cold night in January for a talk on infrastructure could have been considered a challenge, particularly when competing with events at Strathclyde and The Lighthouse. Cyclists, however, are hardy folk and over 50 of us couldn't resist the lure of a decent coffee and potentially good news on Glasgow's plans for cycling directly from the czar's mouth; and if Glasgow can get it right, maybe we could watch and learn and replicate the success elsewhere. Whilst Café Siempre didn't disappoint it seems the future for weegie cyclists isn't as bright as hoped: Quizzed on the discrepancy between the vision and reality, Frank McAveety (the aforementioned czar) confirmed his appointment came after many decisions had been made and procurement was already underway - change isn't easy. Straight answers were few - he's a politician after all - but there was a healthy debate on all manner of cycle and pedestrian issues from fastlink to the parks management plan and the wider implications of an infrastructure for all vs one for a few. We made ourselves heard and know we have to keep noise levels up so Frank and his colleagues don't get complacent - Green Drinks at its best.

Next Greendrinks event: Magazine Makers Edition Launch Fri 25th July
Caledonian Road Church, Glasgow. 6-8pm, Meet the Makers and discuss exhibited work

Architecture + Design Scotland Materials Library Lighthouse, Glasgow

Lori McElroy highlights this crucial library and education resource in Glasgow.

In order to support Scottish Government's ongoing activities in the area of the low carbon economy, Architecture + Design Scotland's Sust programme has developed a Materials Library at The Lighthouse, Scotland's Centre for Design and Architecture, and was started in association with SEDA in 2004. The purpose of the Library is to showcase sustainable, traditional and emerging low carbon building materials and products in general and to promote and encourage innovation in construction in Scotland using indigenous resources. Supported by the Forestry Commission and the Scottish Government, it offers clients, architects, builders and students an opportunity to get hands on with a wide range of sustainable, traditional and emerging low carbon building materials – from timber and stone to sheep's wool – while learning about each material's sustainability credentials and the contribution that these can make in supporting sustainable communities.

It is a place where built environment professionals, students and the public can come to see real samples of sustainable building materials, which are available in Scotland. The library complements the online resource "The Green Directory" www.thegreendirectory.org, which was been developed by Sust.

The premise for the development of such a library was that sustainable, low carbon communities will not succeed without equal consideration of people, places and work (social, environmental and economic) and that to be sustainable, construction has a vital role to play in supporting low carbon economies by creating green jobs through the development of home grown industries based around indigenous material opportunities.

The resultant Library, which opened in late June 2012 assists users to make their own assessments of the facts about materials and their associated environmental impacts within the context of their own specific project or context. The Library showcases sustainable, traditional and emerging low carbon building products and promotes and encourages innovation in construction in Scotland using indigenous resources. The Library includes emerging material technologies from other countries, such as engineered timber, which we currently import from Germany and Austria, but could be manufacturing from Scottish timber. In addition it provides a shop window to on-going research in Scottish



All Photos courtesy: A+DS

universities around new opportunities for traditional materials and the development of new materials and products.

The Materials Library is designed to appeal to a wide-ranging audience, from children to designers to scientists, and offers visitors the opportunity to experience samples of natural building materials and products at a variety of scales – from small samples to full-scale mock-ups. The library includes a wide range of building products, materials and components, which are a considered (in the main) to be sustainable, green and environmentally friendly, although we have included some products from glass, plastic and rubber waste materials for example. The products and materials displayed are locally produced/manufactured where possible, but are not exclusively Scottish in order to provoke discussion on future potential.

Each item in the library is labelled by category, rather than as a particular brand or product. Information about what the material can be used for, what it is made from and the companies that supply it are all displayed using text and key symbols. Information sheets containing technical information and details of the various suppliers are available for all samples.

The Library also demonstrates through a series of case studies, how these materials have been used in recent Scottish buildings and also contains additional reference materials on the subject of sustainable construction – including reference books and manufacturers' publications, and study area with computer terminals to allow visitors to the library to do their own research.

Over the coming year, A+DS will be exploring the potential to develop the Library as a resource, while maintaining its integrity and impartiality.

Lori McElroy is Programme Director of Sust, part of A+DS





MATT ON THE BACK

“We are moving from a position of advocacy and lobbying to a hands on approach”

Matt Bridgestock

In 2010 the SEDA held a one day visioning workshop in Perthshire, a day of big ideas, grand visions and a lot of tea. Some of the outcomes from that event included being more proactive with events, being more involved with community organisations and being more involved with research. A lot has changed in 4 years but from firm foundations, I think SEDA has continued to move towards those visions.

Green drinks continues to grow from strength to strength, prompted by the last magazine we have looked at urban issues in the last months events. The debate on ‘why do greens hate cities’ compared by Chris Stewart was a stimulating evening, raising issues of empowerment, density and ecology. This was swiftly followed by full house for a lively debate on city cycling with Councillor Frank McAveety at the wonderful Siempre bike cafe, thinking about how transport can change place. To round up the urban series, Dr Jonathan Charlie gave a cracking talk at Strathclyde University, playing the part of an anthropologist alien visiting earth reporting back to his planet. Between the events held in Edinburgh and Glasgow we have had well over 300 participants in the last 12 months and numerous memorable evenings. We want more people involved next year, in more green drinks events. Could you run a Green drinks in your town? Help organise an existing city? Or do you have something exciting to talk about?

The SEDA academy is described in detail on page 5 but it is an important moment for the Association, we are moving from a position of advocacy and lobbying to a hands on approach, one that is going out and getting things done with communities. Once up and running, the model could be rolled out elsewhere, assisting people across Scotland and enabling self build at grassroots levels. We are looking for support with this project, people who can give lectures on specialist subjects advisors and people just to help spread the word and workload.

SEDA is getting more involved with the academic community, not only distributing this magazine to more architecture schools library’s and departments but also through the second year of the fabulous KJ award and the research conference held in April. The shortlist for the KJ award looks excellent once again, involving second year students from all the Scottish Schools of Architecture together with Sheffield University. The research conference line up was so good, we decided to video the presentations. These will be posted on the SEDA website to enable discourse, debate and dissemination of ideas and best practice. Over time this can grow to a library of best practice and good ideas for academics and practitioners.

We are collaborating with several organisations to achieve our aims, collaborating with the AECB on events including the successful Pedalhaus tour to Loch Lomond. We are collaborating with LoveMilton for the SEDA academy and the RIAS assisted with the venue for the Research conference. Next year we intend to extend our activities in partnership with other organisation, bring in new perspectives and ideas, if you can help, let us know.



Photo: Matt Bridgestock

We returned to Perthshire for a conference on the ‘Power of Communities’, on people pulling together to effect change. Over biscuits and drinks we mulled over the progress since the visioning day, if we have managed to create a community with some influence and shape some of the vision going forward. We can only do that with committed and talented people, perhaps you are one of those people and perhaps you might be involved in making it better?



Photo: John Gilbert

