

I think this has to be about the nicest room I have ever spoken in so thanks to the Princes Regeneration Trust for inviting me to speak to you here today. Good morning, my name is Tom Morton, I am principal of Arc Architects and I 'm here to tell you about the Logie Schoolhouse project, which we completed last year and which highlights many of the issues currently affecting restoration projects

The project began five years ago when this man, Michael Maltman, was served with a planning notice telling him that the old building next door to his house was going to be demolished and replaced with a kit house. And he just was not happy with that.

This was a building he had known all his life, it had started off as a school then became a church that closed about 15 years ago. The last service had been the funeral of his 90 year old neighbour who was a repository of wisdom about the area and whose father had looked after the building. So the building meant something important to him about the place he lived in and the people he associated with it. It was the oldest building in the area, but long neglected.

So Michael chivvied people in power to do something about it. One way or another, the people he contacted took notice and they built the kind of enduring partnership that is key to a successful restoration project.

First he called the local Conservation officer, who delayed the planning application and called in Historic Scotland who recognised the buildings rarity and immediately gave it a grade A listing. That blocked the demolition. But stopping an old building being knocked down is so much easier than finding a way to restore it and give a secure and viable long-term future.

The key there, for this project, was the emergence of the National Trust for Scotland's Little Houses Improvement Scheme as the key vehicle to restore a building, which was otherwise well beyond economic repair.

They called us in and we advised them that the building could technically be repaired and they then secured the necessary financial support from Heritage Lottery Fund, Historic Scotland, Angus Council and Communities Scotland.

And it was this combination of local interest, professional expertise and financial capability that delivered a project that none of these individuals or organisations could have achieved on their own.

What Michael Maltman had sensed, what the local Conservation officer had recognised and what Historic Scotland acted on when they looked at the building was that the Schoolhouse at Logie is a rare example of Scottish vernacular construction.- That's more than just saying it is a traditional building - it vernacular building is the product of a particular way of building in a particular place

that can be traced back to pre-history. If you like, the ways of building that naturally evolved in local places.

Techniques that pre-date arrival of mass-produced materials through the rail network. When labour was local and before rural depopulation. People built with what was immediately to hand, in ways that didn't require a lot of effort, or money, and they used long-established skills to create buildings that endured because their design suited the local climate. These characteristics of low energy, local materials and buildings that are suited to their climate are why traditional buildings are a continuing source of inspiration for modern green architecture.

For a small country Scotland has a highly diverse physical geography, natural resources and climate and these factors have given us a heritage of vernacular buildings that is one of the most rich in the world. This built heritage is a key component of local cultural distinctiveness, it's an important part of what make Scotland's places special.

Our research showed that all the materials for the original building came from within two miles. The prime vernacular material of North Angus is clay. The pink colour on this map represents a deposit of clay that is ½ mile deep but lies only a couple of feet below the surface, and it happens to be perfect for building with. This is the traditional technique, you mix it with straw and mould it into the shape of a building.

Clay is a great building material that has been used for thousands of years in Britain to create humble cottages, fine homes, even local authority housing in the 30's. Even today clay buildings house a third of the world's population and form many of its most important monuments. But just as traditional clay building died out in Scotland during the social and industrial modernisation of the 18th and 19th centuries, it is today being abandoned around the world in 'developing countries' and replaced with buildings of steel and concrete. This is not because traditional buildings don't work anymore, but because they don't give a place the image of a modern society. This process of changing the building stock is perceived as products of progress replacing products of poverty. The new and strong replacing the old and redundant.

But it's a process that we can't afford, neither environmentally nor culturally. It is rarely publicised that cement creates about 8% of global carbon dioxide emissions, more than aviation, and is the fastest growing industrial source of greenhouse gas emissions. So by choosing to restore an old clay house in Angus in preference to knocking it down and replacing it with a new kit house, this project not only helped sustain the cultural heritage of Angus but, by presenting a competing image of sustainable progress, progress through renewal rather than replacement, it supported people working to sustain the environment and culture of traditional places across the world.

The other side of this coin is the development of modern versions of traditional materials, such as the clay and timber used to build this new print works. We have been involved in this field for the last ten years, working with industry and the research community to develop cheap simple low carbon materials that can be used to develop a contemporary vernacular architecture.

So this was the context in which we approached Logie. The building was in a bad way when we got to it. Decayed and deformed, partly collapsed, full of rot, It would not have stood another winter.

Tom Morton *Principal*

E-mail: tom@arc-architects.com
Mobile: 07973 818 258

Arc Chartered Architects
69 Burnside, Auchtermuchty, Fife, KY14 7AJ
T & F: +44 (0) 1337 828 644
www.arc-architects.com

But over a year we carefully picked it apart and put it back together again. We re-cycled the old clay and dug some out of the field next door. And we gradually reinstated it, not to it's original condition, but to something pretty close.

Everything you see in this picture, even the chimney, has come down, been repaired and then reinstated. Similarly on the inside, the only thing that didn't come out to be repaired here was part of the ceiling. But in two of the original rooms, we only had to make minimal changes.

While we took great care to repair the building with minimal loss of original material, we also were careful in using compatible materials to upgrade it to a comfortable condition for modern living. So we used, recycled newspaper and hemp fibre as insulation, which keep the building warm, while still allowing it to breathe.

This project was a mixture of expert conservation and back to basics techniques. We could not have achieved this without rare craft skills that have been gently sustained over the last 15 years by Historic Scotland through small training grants and research projects. . And this year the contractor, Little & Davie, was rewarded with the national Craftsperson of the Year Award for their work on this project.

A key aspect of this project was that it was vested in the local community. While we used some specialists, the bulk of the work was done by a small local joinery firm. And alongside the repairs, we ran training days for local people, local schools, for professionals and officials. This awareness raising should mean that when clay is encountered in local buildings in the future it will more often be valued and retained than automatically torn down and replaced. It also brings a bit of local pride back. I spoke to one man who said he had been bullied all the way through school as living in a 'mud hut', but now he understood why his home was made of clay and saw it as something really special, something to be proud of.

The best restoration projects are not at their core about bricks and mortar, they are about people and places. Obviously speaking as an architect, Buildings are hugely important, but building is a cultural activity and culture is about people, their ideas and values. Cultural objects, be their buildings, books or paintings are merely an expression of these ideas and values.

This restoring of local cultural capital then is more than restoring the fabric of a building. It's about reinstating and reinforcing the values of people as well. Places and people - you can't separate them if you want communities to work - if you focus on only one or the other you will only have partial success- This is something the National Trust for Scotland and our Building Preservation Trusts are able to do so well - sustaining our diversity - working with communities. And it's why this project has been recognised with I think now 7 awards, including a Europa Nostra, the European Union's prize for cultural heritage.

This was a special building - A listed, grants, expert advice, special skills. The vast majority of Scotland's traditional buildings do not enjoy that kind of attention and there is one key aspect of the Logie Schoolhouse project that highlights an issue that is now emerging as a vital one for all of Scotland's traditional buildings, especially rural ones - and that is the issue of energy and climate change.

Tom Morton *Principal*

E-mail: tom@arc-architects.com
Mobile: 07973 818 258

Arc Chartered Architects
69 Burnside, Auchtermuchty, Fife, KY14 7AJ
T & F: +44 (0) 1337 828 644
www.arc-architects.com

Traditional buildings were built in an era when energy was cheap and insulation was unknown. People were also very hardy in the past, or so I'm told, by my father. Energy is an issue that affects all traditional buildings, humble cottages, schools, fine houses, even Scotland last traditional turf sheiling here on the Butt of Lewis. The challenge of climate change demands that we make these buildings low carbon, because they will still be with us in 2020 and in 2050.

Making traditional buildings low carbon can technically be done – you have to use the right materials in the right way – The new Green Guide highlights many of these techniques and there is some great work going on in Scotland led by Historic Scotland and Changeworks.

It's not simply that old means cold. 20th century buildings can be colder than 19th century ones. The problem is that traditional buildings are more difficult and more expensive to upgrade than 20th century ones, and there is a real danger that our traditional buildings are left out in the cold while the low hanging fruit of suburbia, where carbon savings can be more easily achieved are the focus of attention. English Heritage has warned that traditional buildings might become unliveable in because of energy issues and it is a huge under-recognised risk to our cultural heritage.

Compare these two buildings – Logie and a 70's bungalow. Logie has solid uninsulated walls, as all traditional Scottish buildings do. There are ways to insulate these, but they are expensive and grants for insulation are only available if you have cavity walls, which are already easier and cheaper to insulate.

Similarly, with loft insulation. You can get subsidised loft insulation if you have a simple modern loft, but if you have a traditional combed ceiling, the grant aided installers say it takes too long and so you have you to do it privately without a grant, and it costs you three times as much. And you can only get grants for synthetic insulation not the natural insulations that breathe in a way that is compatible with old buildings. The CERT funding scheme was not meant to work this way, but it's the reality of how it has been implemented on the ground.

And then there is the location, because they are old and there are restrictions on new buildings in the countryside, traditional buildings like Logie are disproportionately located in rural areas, which have multiple energy disadvantages. Standing alone, more climatically exposed, and no mains gas so you have to use oil, LPG or electricity to heat your home – the three most expensive and highest carbon sources of energy. So you automatically pay more and pollute more. And if you happen to be in fuel poverty, you aren't eligible for the lower social tariff designed to protect vulnerable households, because that only applies if you have mains gas, and not if you use oil or LPG.

We're running a community energy saving project in a rural area just now where 60% of the homes were built before 1900. 24 % are listed buildings and 50% in conservation areas. In the last 8 years there has been a 30% increase in fuel poverty. 1 in 3 people can't afford to heat their homes, 1 in 4 only heat part of their house. This is directly related to the fact that they live in traditional buildings in a rural area.

We looked at using a wood pellet heating system here, but it was simply too expensive. Things will be greatly improved with the introduction of the Renewable Heat Incentive next year, but, like the

comparable scheme for electricity, the feed-in tariff, there is a danger that only the affluent will be able to take advantage of it. If you are a farm worker with a tied cottage, you will be stuck with rising energy bills and little power to change. At the moment, there is rightly a lot of focus on greening the supply side of energy, but we must also tackle how climate change impacts at the other end of the power line.

There is a real danger that the way we manage the transition to a low carbon economy has disproportionate impacts in ways that are not intended by policy makers, increasing social inequality and marginalizing traditional buildings. This doesn't need to happen and a range of projects, in particular a number led by communities and funded by the Climate Challenge Fund, have highlighted issues and opportunities that could beneficially inform future policy..

People out there are worried about the future and they are increasingly willing to take action if they have the opportunities. People like the community of Anstruther who, assisted by Fife Historic Buildings Trust, are taking over this abandoned church to turn it into a centre for performing arts, safeguarding their historic townscape, sustaining a living culture and fostering economic renewal. Or the people of West Wemyss, a former mining village that practically became a ghost town and now are about to take over a derelict B listed pub and turn it into a low carbon Hub for their community. Communities are looking to use the challenge of climate change as a vehicle to develop thriving resilient sustainable futures and public projects such as these help to foster individual action in private homes.

Cultural attitudes about buildings and places are changing, communities are becoming more empowered, the conservation authorities are becoming more progressive. There is a growing appreciation that for Scotland to have a secure and equitable energy future and to sustain diverse and thriving communities, bottom up initiatives need to work in tandem with top down drivers.

The way to achieve this, the way to restore our heritage and to sustain our traditional communities is through partnership, the same way we did at Logie, where Michel not only saved the building he cared so much about, but got a great new neighbour in the bargain. Put such partnership needs to be fostered and strategically coordinated at a national level. And so it is heartening to see many of key people of influence gathered here today. Thank you.