

SCOTTISH SUSTAINABLE CONSTRUCTION FORUM MEETING

Held on

FRIDAY 9 FEBRUARY 2007

in

THE ST NICHOLAS ROOM OF THE TOWN HOUSE, ABERDEEN

Present

As per attached List

Apologies

As per attached List

<u>ITEM</u>	<u>MINUTE</u>	<u>ACTION</u>
1.0	INTRODUCTION <p>The Chief Executive, Douglas Paterson, welcomed the members of the Forum to the meeting. He intimated that Aberdeen City Council encourage colleagues to attend such meetings and encourage their own staff to interact with Groups such as the Forum. It is particularly important for the SSCF Group to be here as the Council put a large amount of effort into the sustainability agenda.</p> <p>Douglas intimated that he visited Iceland recently in regards to their PPP rebuild and refurbishment programme for schools. Aberdeen City Council are to build a new School. The preferred bidder is a consortium of Icelandic Architects, Icelandic Builders and a Danish Bank. The Council have built in really high environmental standards as specification for the new school. When they tried to specify environmental specifications they were informed that this would put the cost 'through the roof'. This is not the case, it is 30% cheaper than the best price currently achieved using UK Building Regulations. Captured water systems, micro-renewables etc., are to be installed. Administration and information items have been built into the design to allow the children to use this in their curriculum.</p> <p>In Iceland there is a high amount of steam from the volcanic activity and they use water tanks for cooling the steam down. This is used for heating domestic hot water etc., and generates significant energy savings.</p> <p>There is a joint pilot programme in carbon foot-printing with Aberdeenshire Council.</p> <p>A new Aberdeen bypass is to be built and this will raise a huge challenge in regards to environmental issues.</p> <p>RP Thanked Douglas Paterson for his welcome and thanked everyone for their attendance at the meeting.</p>	
2.0	PRESENTATIONS	
2.1	<u>Dr Mike Winter - Transport Research Laboratory (TRL)</u> <u>Presentation - Tyre Bales in Construction</u>	
	<p>Mike is a Fellow of the Institution of Civil Engineers and is also a Chartered Civil Engineer and Chartered Geologist. He is the Chief Scientific Editor of the Quarterly Journal of Engineering Geology and Hydrogeology. Mike is also immediate past Chair of the Scottish Geotechnical Group. He has published and presented his work widely on the international stage.</p>	

Mike intimated that the Transport Research Laboratory was formed in 1933 and privatised in 1996. It is a non profit distributing foundation with over 550 staff.

The UK creates 50 million tyres per year which is equal to 450,000 tons. We can no longer place these in landfill but there are interesting forms of recycling. Tyre bales consist of approximately 150 compressed tyres and this uses a very low energy process. With the total ban on tyres going to landfill now, in effect there has never been a greater need to recycle. The process is free from chemicals, pollution and with no voids to hold air there is no risk from fire.

TRL and H R Wallingford are about to publish information on a full procurement standard e.g., Publicly Available Standard: PAS 108. This is funded by WRAP. It is hoped to be in operation by Easter.

In terms of sustainability Tyre Bales produce environmental benefits; resource benefits; economic benefits as well as social aspects e.g., repair/reconstruction of infrastructure that might not otherwise be carried out. Roads have been closed because there is insufficient low cost materials to effect proper repairs.

Waste Management, SEPA and the Environmental Agency in England and Wales do not require WML for Tyre Bales in "engineered construction works".

Potential applications include road foundations, lightweight fill, gravity retaining walls, environmental barriers etc.

Successful applications include - tyre bale roads; used in landfill site access; landslide barrier. They can also be used as a substitute for costly rockfill.

As intimated previously the BS PAS 108 procurement standard which it is hoped TRL will publish early in the Spring was funded by 'WRAP. The rest of this work was funded by -

- Onyx environmental Trust - Under the Landfill Tax Credits Scheme
- Inverness & Nairn Enterprise and
- Scottish Executive (now Transport Scotland) provided Third Party funding

Q1 **Question**

Are American bales different from British bales ?

A1 **Answer**

Yes they are slightly. American tyres are larger than ours therefore you get less tyres in a bale. Because tyre sizes have increased in the UK over recent years there is now not much of a difference.

Q2 **Question**

Because American tyres have less rubber in them do they give the same performance ?

A2 **Answer**

There are some subtle differences.

Q3 **Question**

What is their life expectancy ?

A3 **Answer**

There is no evidence at all that if you bury the tyres they deteriorate. The tie-wires disintegrate but this does not cause any problems.

Q4 **Question**

Have you looked at the size of the market for these ?

A4 **Answer**

We are generating 40 million tyres per year and we do have a remit of what to do with them.

The market at the moment is very difficult to evaluate and we are looking at what degree of market we can capture in Civil Engineering. The real issue at the moment is that there is capacity in the tyre bale market. It is hoped BS will make a substantial difference.

2.2 **Craig White - White Design Associates Ltd**
Presentation - Delivering a Low Carbon Future

Craig is Co-director of White Design Associates Ltd. The practice develops market-leading expertise in the design of low energy, environmentally friendly buildings.

Craig has extensive experience of practice both in the UK and overseas, having worked with a number of architectural practices on a wide range of project types and sizes.

Craig is a graduate of the Welsh School of Architecture, Cardiff and the Architectural Association, London. His approach to design is innovative and grounded in a thorough understanding of practical delivery.

He is a Carbon Trust Design Advice consultant, advising on energy and environmental issues in construction.

Craig is a member of Building Services Research and Information Association's (BSRIA) expert panel on the Impact of Climate Change on the Construction Industry; and Consultant to the Steel Construction Institute on low energy, naturally ventilated steel construction. He is also a grant assessor for the DTIs renewable energy programme.

Craig stated that we have a carbon dioxide issue on our Planet and that global temperatures peak and trough. Today's CO² levels are 2 to 3 times higher than the nature average and we should try to reduce this by becoming energy efficient.

Currently we have a centralised power network in the UK but there is a need to decentralise our power system. 3½% is lost through transmission and distribution, 13% in buildings waste and 61½% through insufficient generation.

Craig stated that UK GDP is £1,154bn.. Climate change will therefore cost the UK £58bn to £231bn per annum. To prevent this we require to invest 1% of GDP which equals £3.70 per week per person to enable us to have a sustainable future.

The BRE Environmental building is the "Energy efficient office of the future". It took Best Practice in 1994. This was achieved by encouraging passive design through use of solar energy, thermal mass, super insulation and lots of ventilation.

Stacks were used to allow hot air to pass through. There was no mechanical additions to provide air (except for toilets). This building was built 12 years ago.

The Velux Building is Craig's first Scottish building project. This is a passive scheme design and is a hybrid building, using timber which has 26% less energy embodied in it than steel. Housing Glulams were used and the building is clad in Cedar. All Cedar is now sourced from the UK.

Craig's next project is the Hartlands Building. This is a managed retreat building and incorporates a SUD scheme and attenuation ponds. WRAP is assisting the Developer to develop 2 Golf Courses. Housing stacks have been developed as structures and these have the ability to syphon. The building is shaped and formed to use wind. During the Winter period the stacks are used for heat recovery. Stacks also provide light. The building has 60% of CO² reductions.

Craig spoke on Modcell Straw bales which are pre-fabricated frames with straw bale infill and are lime rendered. They come as a kit and are built onsite. These have been installed, without protection, on a trial building and after 5 years are still standing the test of time. They have also been used in a vaulted pre-fabricated roof. The frame is a screwed and glued system. Through design development they are now using solid timber (finger joint) single sheet of timber and have just secured DTi research money. The panels are constructed bespoke for each project.

The Practice are just going out to tender on the Archimedia building in Bristol.

Q1 **Question**

How can this become more mainstream ?

A1 **Answer**

It is possible to achieve the 10% renewable target but will not necessarily deliver lower carbon. If you take a building which has been inefficiently designed and put a windmill on top to try to achieve 10% this would be a difficult task, on the other hand if you deliver this on a new building it will be more successful. The Practice encourage the use of renewables but target is carbon based.

Q2 **Question**

Imported energy from transport appears to be much more complicated than it first appears.

A2 **Answer**

More research requires to be carried out. We have to reduce the amount of distance material travels.

2.3 **Stuart Robertson - Aberdeenshire Council**
Presentation: Encouraging Sustainability through Planning Gain

Stuart joined Aberdeenshire Council in 1998 as Planning Gain Co-ordinator. He was previously involved with the construction industry in architectural design and project management.

Stuart is an Associate Member of the Institute of Environmental Scientists and holds a Diploma in Environment and Development. His interests include building design, energy efficiency and all matters technical.

Stuart intimated that Planning Gain has to mitigate the impact of the development, it has to be fair and reasonable, by Scale and Kind and carried out through negotiation. It is not a "Wish List" of desirable projects and it is not a development Tax. It is basically going to be a Tax on uplift in land value e.g., agricultural to residential (excluding extensions, garages etc). It will be a Valuation by self assessment.

Funds will be collected by HM Customs with the major proportion returned to Executive and back to the Council where development located - for expenditure on infrastructure projects.

It is important to get relationships formed, have good partnering and work together. We must try to encourage Builders and Developers to include sustainable items e.g., biomass heating; Solar Thermal; Photovoltaics; Micro power generation (wind/hydro); Geothermal heating etc. We should also encourage them to introduce passive measures e.g., Dual flushing WC's; Grey water recovery; rainwater storage etc. Savings using low energy light bulbs are immense.

District Heating Schemes are working quite well on smaller developments. Local Authorities are using these in School. Stuart reported that a School in Aboyne has installed a wood pellet boiler. We should be encouraging developers to install pipes.

The efficiency of Photovoltaics is improving continually with capital payback currently 9-14 years. They have zero running costs and are CO² free in operation.

Affordable Housing - You have greater control over specification on new build. Refurbishing has greater carbon benefit over new build plus social benefits.

Cumulated Sum Contributions - This is utilised to keep people in their own homes and communities as well as towards new projects. £1m of spend can translate into £10m of re-housing savings plus CO² savings from new build.

Stuart stated one brick contains the equivalent energy in its production to power an average car 6 miles - a whole house with its vast array of materials equates to several times round the globe !

Brownfield developments have a benefit to the community. They can :-

- arrest the decline in local School rolls
- enhance the viability of community facilities and public transport
- increase local retain vibrancy
- provide the opportunity to recycle materials
- reduce commuting
- improve the feeling of general wellbeing in the community

Two Supermarkets have been erected on the edge of settlement sites in Huntley and this has seen a reduction in shopping journeys to Inverurie and beyond. This also cuts down on pollution. We require to contribute towards environmental improvements to town centre, public transport links and signage etc., to maintain vibrancy and sustain the heart of the settlement. If we can plan to erect housing developments close to other facilities we may not require all the commuting which occurs. Supermarket sites in larger towns are now incorporating housing on site.

A new community hall, part funded by Planning Gain (PG), has been built in a re-defined settlement centre - within easy walking distance for most residents. Grey water recovery system installed for showers and WC.

Community woodland has been planted and will provide a wind break in time.

Contributions should be made to public transport to enhance or establish a service e.g., bus shelters, stances and cycle racks at bus stops.

Affordable housing being built with sustainable materials. This has to be integrated, as far as possible, into the mainstream housing.

In this part of the world there is a significant lack of fresh water storage and the water table is declining. Developer contributions could be used to provide for larger infrastructure projects which would provide for everyone.

Future specifications should include for such provisions as room to be made in roof trusses to provide additional living space, fit external shutters for solar reflection and storm events (plus bonus of additional security) etc.

Sustainability is not just about construction materials it is also about Location, Orientation and Topography. Pre application dialogue, good planning and development briefs all play a part.

We require to work towards zero carbon buildings and to promote more woodland or open spaces.

Some points to ponder -

- 60% of the stock that will be around in 2050 has already been built
- 40% of the stock in 2050 will predate 1985
- stock built today is generally 40% more energy efficient than that built in 2002
- new build adds approximately 1% to the built environment each year - ergo 99% of stock needs attention
- **Replacing all light bulbs in Scotland with low energy bulbs would fulfil our renewables target overnight (approx 6 gig watts)**

Question

Q1 Why not tax the Developers of land rather than the development ?

A1 **Answer**

The person actually carrying out the development pays. It is up to Councillors to release more land than required.

Q2 **Question**

Regarding the Landowners selling land which appear to be mainly public bodies. How do we get over this ?

A2 **Answer**

The Public sector should be releasing its own land for its own building of houses. It is a social policy of the Government that social housing should be provided. It should come from all sectors of the sustainable industry. Cannot really answer the question.

Q3 **Question**

Do you have any information on carbon sinking by forestation ?

A3 **Answer**

A link will be provided once the reports are published and posted on the Transport Scotland website.

2.4 **Rob Pedersen - Architectural Services Division, Dundee City Council** **Update on Demonstration House and Solar Cities Scotland**

Rob Pedersen intimated that the Demonstration House is not yet complete. This is mainly due to Contractors giving their material and time free of charge and their availability to carry out the work. The roof is on the house and Slaters to be on site within the next couple of weeks. It is considered the House will be complete late April/early May. One of the major delays has been the installation of the geothermal heat pump which was given free of charge by Zigges

The building is a 1960's Janitor's house in the Whitfield area of Dundee with all the usual problems i.e., flat roof, lack of care and attention, steel window frames etc.

An extension will be built on to the house along with a Sun Room.

The House will be occupied by members of SCARF for 3 years and will be open to the public and used as a teaching aid for pupils. It will incorporate a variety of initiatives which will give an insight into the merits etc., of various systems.

All of the timber used is being acquired from one source which is FSC sourced and accredited. The existing walls will be overclad.

It is hoped to have a web link for the next SSCF meeting in June.

3.0 MINUTES OF MEETING HELD ON 8 SEPTEMBER 2006

The minute of the previous meeting held on 8 September 2006 was accepted as a true record.

4.0 MATTERS ARISING

4.1 Membership Update

It was noted there are now 221 members representing 100 organisations. This has risen by 9 since September 2006.

4.2 Funding

Assurance has been received from the Scottish Executive that funding will be provided for 2007/08 and consideration will be given for funding for 2008/09. In future we may require to charge for membership. RP to prepare a paper to all members seeking their views in regards to same.

RP

4.3 Website Update

Presentations from this meeting will be placed on the Website. ***It was requested that, if anyone wishes to use the presentations, they credit the source.***

ALL

Rob asked members for any further information for the website. Anyone wishing information placed on the website should forward this to Yvonne at - yvonne.mchugh@dundeecity.gov.uk

4.4 New Initiatives

RP reported there may be a synergy as to the use of Tyres and Straw Bales. Looking at providing a site.

5.0 ANY OTHER BUSINESS

5.1 Wood in Construction

Catriona Prebble is looking to research and collate information in regards to use of wood in construction and this may be a suitable topic for presenting at a future meeting. Catriona is trying to audit the volume of timber used in buildings. If anyone has any thoughts on same please speak to Rob after the meeting.

5.2 Sun City Conference

Rob stated that the next Sun City Conference will be held on Friday 2 March 2007 at Dundee College, Kingsway Campus, Dundee. An excellent Agenda has been put together for the event and if you are interested in attending please contact Elaine Morrison at elaine@solarcitysscotland.org.uk. Details are available on the Solar Cities Website - www.solarcitysscotland.org.uk

5.3 Conference - "Sustainability - Can you afford to ignore it"

Hazel Carnegie of Aberdeen City Environmental Forum in Construction, together with Aberdeen City Council and others, are hosting a Seminar in regards to Sustainability on Thursday 1 March 2007. A Keynote Address on 'Innovation in Construction' will be given by Kevin McCloud, Presenter of Channel 4's Grand Designs.

A Schools' competition will be run in tandem with same and any sponsors for this competition should contact Hazel in the first instance at h.m.carnegie@abdn.ac.uk or Tel: 01224 273589.

5.4 DTi

Craig White intimated that where there is a mandatory requirement to achieve renewable energy within a project, the DTi will not provide grant funding.

5.5 New Council Headquarters in Dundee

RP reported that the proposed new Council Offices in Dundee are looking to achieve an excellent rating under the BRE Assessment.

6.0 **FUTURE PRESENTATIONS/SPEAKERS**

RP stated the next meeting will be held in Glasgow on **8 June 2007** and that several speakers had been suggested. These are as follows :-

- Speaker from Commonwealth Games Bid Team
- J S Wilson - Scottish Executive (re the 'Earthship Visitor Centre')
- Peter Copeland - Dundee University (re 'Transportation')

7.0 **DATE OF NEXT MEETING**

The next meeting will be held on **FRIDAY 8 JUNE 2007** in The Parish Halls Lecture Theatre, George Street, Glasgow

A venue is still required for the **September 2007 meeting** and the **February 2008 meeting**. Anyone wishing to offer a venue for this meeting should contact Rob Pedersen, e-mail rob.pedersen@dundeecity.gov.uk

Please Note : Copies of the presentations will be available shortly on the SSCF Website - www.sscforum.org.uk

Where it is not possible to place a Presentation on the website this can be made available on disc and anyone wishing a copy should contact Yvonne in the first instance at yvonne.mchugh@dundeecity.gov.uk

RP thanked the Speakers once again for their interesting and enlightening Presentations. He also thanked Aberdeen City Council for hosting the event and for supplying the buffet lunch.

Rob Pedersen thanked everyone for attending.

PLEASE NOTE THE PRESENTATIONS ARE NOT AVAILABLE ON THE WEBSITE AS THESE ARE TOO LARGE BUT ARE AVAILABLE ON DISC.

ANYONE WISHING A COPY

Please Contact Rob Pedersen at

rob.pedersen@dundee.gov.uk

Distribution

All Forum Members
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Councillor Jill Shimi
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cc Councillor George Regan
Councillor Fraser McPherson

**N.B. PLEASE FORWARD ANY AGENDA
ITEMS FOR NEXT MEETING**

RP/YM
15 February 2007

SCOTTISH SUSTAINABLE CONSTRUCTION FORUM

FRIDAY 9th FEBRUARY 2007

THE ST NICHOLAS ROOM OF THE TOWN HOUSE, ABERDEEN

LIST OF ATTENDEES

	NAME	<u>LOCAL AUTHORITY/ ORGANISATION</u>
1	Mike Jones	Aberdeenshire Council
2	Kevin Christie	SCARF Renewables Connection
3	Eric Wisely	SCARF
4	Amanda Waugh	Glasgow City Council
5	Alan Beedie	SCHRI Aberdeen
6	Colin McRedie	Fife Council
7	Ian Cameron	Perth & Kinross Council
8	Elaine Morrison	SCARF and Solcar Cities Scotland
9	Diana Gibson	Housing Investment Unit, Dundee City Council
10	Neil Reid	Aberdeenshire Council
11	Alistair Smillie	The Moray Council
12	Scott Ritchie Mansell	
13	Sandy Dawson	Clackmannanshire Council
14	Doug Duncan	Mansell
15	M J Squibbs	CIRIA
16	Alison Wisely	SCARF
17	Christine Stewart	SCARF
18	Michael Bradford	Aberdeenshire Council
19	Trevor Smith	Aberdeen City Council
20	Andrew Fraser	do. do.
21	David McCurby	do. do.
22	Craig Muir	Dundee City Council
23	Mark Holmes	do. do.
24	Alan Mackie	do. do.
25	Ged Ross	do. do.
26	Mac Roberts	do. do.
27	Andy Kidd	do. do.
28.	Eric Perkins	do. do.
29	Rob Pedersen	do. do. (Chairperson)
30	Yvonne McHugh	do. do. (Secretary)
31	Dennis Scott	Northern Tyre Recycling

	<u>SPEAKERS</u>	
	Mike Winter	TRL
	Craig White	White Design Associates
	Stuart Robertson	Aberdeenshire Council

