

# SCOTTISH SUSTAINABLE CONSTRUCTION FORUM

Held on

FRIDAY 16 SEPTEMBER 2005

at

DUKE OF GORDON HOTEL, KINGUSSIE

## Present

As per attached List

## Apologies

As per attached List

<u>ITEM</u>	<u>MINUTE</u>	<u>ACTION</u>
1.0	<b>INTRODUCTION</b>  Councillor Angus Gordon of The Highland Council welcomed everyone to the meeting and stated he was extremely pleased to be hosting the meeting which had attracted quite a large attendance. He intimated that sustainable building practice is beginning to receive a lot of attention. Soaring energy costs are putting budgets under enormous pressure, especially school buildings. He stated that Highland Council have become members of the Local Authority Carbon Programme which is run by the Carbon Trust.  John Porter thanked Councillor Gordon for his welcome and also The Highland Council for hosting the event. He also extended a warm welcome to all new members and existing members of the Group.	
2.0	<b>PRESENTATIONS</b>	
2.1	<b><u>Una Lee - The Highland Council</u></b> <b><u>Presentation - Designing for Sustainability in the Highlands</u></b>  Una is the Sustainable Development Officer within the Corporate Policy Unit at The Highland Council. She is an Architect with a background in conservation and environment-conscious building design. Before joining the Council in 2002 she worked for 4 years in Education and Research, initially at Edinburgh College of Art and later at the Robert Gordon University. Prior to this Una worked as an Architect in private practice for more than a decade, including 7 years with Simpson and Brown Architects in Edinburgh.  Una reiterated Councillor Gordon's words and stated it was a real bonus that the forum was meeting here today.  Una stated that a revised document of the draft Development Plan Policy Guidance is going to Elected Members in November of this year.  The big issue on sustainable design in Highland Council at the moment is energy due to the very high dependency on electricity. Very few buildings have gas connections and there is now a wider use of renewable energy in buildings.	

A strong demonstration of sustainability is the new Acharacle Primary School which is being designed with some of the roof covering in Timber. This has been modified by a non toxic impregnated covering and is one of the first instances of this being used in the UK. Other initiatives include no fire retardants or timber preservatives; extremely low heat load, strong emphasis on indoor air quality, thermal mass, rainwater harvesting and pad foundations.

The Planning and Development Service is planning to hold a mini Highland Housing Fair in 2007. This will showcase sustainable design, mainstream and affordable housing and locally sourced materials.

In regards to sustainable development The Highland Council is one of the largest geographical areas in the UK and the Highlands are one of the most important areas for nature conservation in the UK. The Cairngorm Plateau is the largest tract of land in the UK which has not been modified by man and the draft Local Plan is the first to include a Badger Strategy.

The Guidance consists of 9 Guidance Notes and this will be given to Developers. It is proposed to issue a Sustainable Design Statement which will commit the Council to a comprehensive programme. The Council are to work with the Construction industry in regards to the Guidance to help ensure the Guidance is adhered to.

Una intimated that Castle Grant has the oldest pine roof structure in Scotland's history and is entirely built of locally sourced timber. Strathspey is capable of yielding superb quality Scots pine from managed forests.

#### **Question**

JP asked who were included in the consultation process.

#### **Answer**

Una intimated it was a full public consultation with a standard range of people, public sectors, interested groups etc. This was advertised in the press and approximately 30-40 responses were received, some of which were very substantial. They received a huge amount of support. Thirdwave conducted the consultation process.

#### **Question**

It was noted the Acharacle Primary School was being built by the Council outwith the PPP programme. Was there an element of sustainability in the PPP procurement ?

#### **Answer**

The Council took on board a number of policy decisions e.g., all new buildings would be compared to a base carbon emission and reviewed accordingly. All buildings will be BREAM excellent. This will be a benchmark for all future buildings.

This presentation will be available on the Forum's website shortly.

## **2.2 John McSorland - Scottish Executive Renewable Energy Policy**

John is part of the Scottish Executive team responsible for the development of the Renewable Energy Policy in Scotland. He joined the Executive 3½ years ago and is relatively new to the Renewable Energy Policy having moved to his present post about 10 months ago. He will outline the Executive's policy and where we are heading for the foreseeable future.

John intimated the drivers behind the Executive's commitment to renewables.

Climate change commitments have a major role to play. and green house gas emissions are to be reduced by more than 5%. The UK have set a target to reduce this by 12½% by 2010. The Scottish Targets are 18% of Scotland's electricity from renewable sources by 2010 and 40% by 2020.

Renewable sources in Scotland include; Wind, Wave and Tide, Water and Forestry and Scotland are in a unique position to deliver this.

A Renewable Obligation (Scotland) Order was put in place in April 2002 for placing a legal obligation on Electricity Suppliers to produce increased amounts of Electricity from renewable sources and Renewable Statutory Obligations will be issued towards the end of September. This will include a few months for responses.

John stated that one of the main Renewable Energy bodies in Scotland is the Forum for Renewable Energy Development in Scotland (FREDS). They provide advice on: Marine Energy; Biomass Energy; Meeting the Targets; Hydrogen; Training and Skills and have published their work in the Marine and Biomass industries. Onshore Wind will play a significant role in helping them progress their commitments. The technology is the most advanced and needs no direct support from the Executive or the UK Government. Onshore Wind has a vital role to play, is commercially viable, consent for 10 onshore windfarms has been received and they will provide 950 megawatts of generated capacity.

There is tough opposition to windfarms in Scotland, therefore there are stringent Planning Guidelines on where these windfarms are sited with a robust concise procedure.

The SCHRI have committed £6M for 700 projects across the country and the scheme has been extended for a further 3 years.

The Executive are preparing guidance on the installation of micro renewables and the Department for Trade and Industry is currently consulting on their micro regeneration strategy and their low carbon building programme.

#### **Question**

Sheila Currie asked about ROCS. It was noted there is a Hydro Scheme on Rum which they own and manage and when they applied to OFGEN for ROCS they were informed they were not eligible because they were a public body.

#### **Answer**

John stated that, as far as the Executive are aware there are some Public bodies claiming ROCS. However, there are other issues involved.

Una intimated that small generators can trade through a broker. They are licensed to trade in ROCS.

John stated he would look into the matter and update us on the current situation.

**JMcS**

#### **Question**

As an individual householder is there some way the system could be simplified ?

#### **Answer**

The Electricity suppliers state that, because of the way their billing system is set up they cannot provide this scheme.

It was noted that Good Energy seems to be offering the best deal at the moment.

### **Question**

Is it going to be easier for householders or communities to install renewable energy devices.

### **Answer**

John stated that some of the technologies are similar to satellite dishes. He is not quite sure if planning permission would be required but will look into this and give an update on same.

David Aird intimated they are planning a seminar in Edinburgh in regards to Planning Guidance etc.

Christine Anderson would be quite willing to meet people to discuss this.

### **Question**

When are grants available and have they taken anything on board from Northern Ireland's experience ?

### **Answer**

It is proposed the Grants will be available from March 2006 and the Executive are discussing with the DTI in Northern Ireland.

The Grants will come as a package drafting in all the energy efficiency measures.

A document is to be produced on the Scottish Executive Energy Efficiency Strategy and this will be the document in regards to Energy Efficiency for Scotland.

This presentation will be available on the Forum's website shortly.

### **2.3 Elaine Morrison - Dundee Sun City**

Elaine is the Tayside Development Officer for the Scottish Community and Householder Renewables initiative supporting the development of community based renewable energy projects. She is also the Co-ordinator of the Dundee Sun City Steering Group. She was educated at the Universities of Aberdeen, Strathclyde and East London and has 10 years experience working in the broad field of sustainable community development.

Elaine gave a brief overview of Dundee Sun City and intimated that solar energy is the most appropriate technology because it does not require any additional space. Solar water heating is one of the cheapest technologies. Dundee is the sunniest City in Scotland with just about 60% of Dundee's buildings orientated for solar having a million square metres of available roof space for solar.

Elaine stated that Dundee Sun City was formed approximately 2½ years by SCHRI and Dundee City Council. This is now a partnership consisting of Dundee City Council, Dundee College, SCARF, SET, Servite Housing Association representatives, SRL's in the area, University of Abertay and the University of Dundee. This represents the private sector and public and Education sectors. It is to ensure maximum economic, social and environmental benefit for Dundee from renewable energy developments and to inspire and lead by example. The partnership meets monthly and a few events have been held e.g., a seminar on Solar Energy. The partnership have held their first half-day annual conference. They have political support and Sarah Boyack has been particularly supportive of their work along with Elected Members from Dundee City Council. The group also have public support.

**JMcS**

At the moment Dundee Sun City is a very loose partnership and this requires to be formalised. They are to seek charitable status to apply for funding and to develop the membership and services. They are keen to set targets for Dundee. They want to look at the River Tay as this is an immensely powerful piece of water. They also want to set targets for installations.

They intend to be very proactive in their awareness raising work e.g., go into schools, talk to people more, offer additional incentives for putting renewables into their homes etc.

They work closely with original partner organisations and identify long term opportunities e.g., look at large skill generation within the City and to continue demonstrating projects.

A janitors house is currently being developed as a demonstration project. The house is of poor construction and has a bad energy rating.

The initiative will be promoted throughout Scotland to attract visitors. This will promote a good example of energy efficiency/sustainability as it is not a rebuild and will therefore be a good example of how you can take an existing building and convert it into an energy efficient/sustainable building.

There has been huge support from the private sector and the group have received £10,000 from SUS. It is also hoped the project will be up and running by February 2006.

Elaine intimated that if anyone is interested in how this project is progressing they can contact her via her e-mail address, [emorrison@scarf.org.uk](mailto:emorrison@scarf.org.uk) or logon to the Dundee Sun City Website, [www.dundeesuncity.org.uk](http://www.dundeesuncity.org.uk)

**Question**

Hazel asked if there will be a report on solar water heating systems.

**Answer**

Elaine stated this will be worked as a case study. The Council will produce documentation and this will be shared on the Website.

**Question**

Una asked what structure of the house is left.

**Answer**

Elaine replied that the shell is left. The existing building is still there but will have a new roof. There are sun spaces to the side of the building and it is proposed to make the building as energy efficient as possible.

**Question**

Is there a cost saving to upgrading the building rather than rebuild.

**Answer**

Elaine stated the costs are being worked on at present.

Elaine intimated this will be a shop window for people to come and see how these systems operate and that the University of Strathclyde will be monitoring all the systems.

They are looking at what is available now and not at future technologies.

Construction costs etc., will be monitored.

**Question**

Was Planning Permission and Building Warrants required for the roofs in Kirkton.

**Answer**

No Planning Permission was required as they were replacing like with like. Only conservation areas within Dundee require Planning Permission.

**Question**

Have Dundee Sun City been looking at sourcing upvc-free wiring.

**Answer**

Yes, but finding it difficult to resource.

Una intimated that Bernard Pollock Architects might be of assistance in this instance.

This presentation will be available on the Forum's website shortly.

**2.4 John Forbes - Recycling Targets for Recycled Content**

John has been the Scotland Liaison Officer for WRAP for the last 3 years. His job is both to maximise the benefits of this UK Programme to Scotland and maximise the contribution that Scotland can make towards UK recycling objectives.

He previously worked for an Enterprise Trust where he managed a project helping small businesses with environmental issues.

John intimated that, In regards to recycling, generally, the first thing that comes to people's minds is waste. People don't realise the opportunities there may be in the items they are using. We buy approximately 420M tonnes of materials each year.

Recycling can play an important role in the overall materials efficiency agenda and there are good opportunities to create greater use of recycled materials.

There can be an upfront cost when installing some of the renewable energy options but there are a range of opportunities where Local Authorities and other organisations can take action to save money.

John stated he worked with BRE initially to see what could be achieved in typical construction projects. He has also worked with Quantity Surveyors to assess the amount of recycled materials used in projects and has identified there are opportunities to increase to 22% the use of recycled materials.

1,270 tonnes of material could potentially be diverted from landfill as a result of making the 14 most effective product substitutions. Glasgow City Council are currently looking at a Primary School with this in mind.

A whole range of guides are available in connection with products etc., and these can be downloaded from the website - [www.wrap.org.uk](http://www.wrap.org.uk)

WRAP are working with Quantity Surveyors to provide a web based toolkit e.g., number of rooms, timber use etc.

Forthcoming Seminars / Workshops for Designers, Construction :

- Design 27th September, Glasgow
- Construction 28th October, Glasgow

Targets should relate to at least 90% of the contract and in regards to construction, at least 10% by value of the materials used on a project should derive from recycled content. This should be relatively easy to achieve as it is not project specific. This way we are trying to provide flexibility through the supply chain.

Bristol City Council have put this clause in their PPP contract for their schools.

The Consultation Paper has 11 questions and the key part of this is to encourage a debate. The consultation can be downloaded from :

[www.scotland.gov.uk/Publications/2005/07/27153127/31293](http://www.scotland.gov.uk/Publications/2005/07/27153127/31293).

Responses are due by 18 November 2005.

As well as this being a formal consultation they are working with various Authorities with a view to including these in their Guidance Documents.

For further information John can be contacted by Telephone on 0131 2447953 or by e-mail at : [john.forbes@wrap.org.uk](mailto:john.forbes@wrap.org.uk)

JP reported that the Forum is actually listed as one of the organisations asked to respond. If members want the Forum to respond please get in touch with JP and provide comments by 11 November 2005.

### **Question**

To what extent can these initiatives be used more generally e.g., in regards to projects individuals are carrying out e.g., insulation material (Warmcell)

### **Answer**

Part of the reason why Warmcell is not available widely to the public is that part of the insulation is a bit more specialised and if this was given to the general public this would not be installed properly.

John stated that WRAP are working with BRE in regards to assessing construction materials.

This presentation will be available on the Forum's website shortly.

## **2.5 Sheila Currie - SNH Office, Aviemore**

Sheila is SNH's "Greening the Workplace Officer" and she manages the SNH's Environmental Management Scheme. She has worked as an archaeologist, geologist, gardener, she ran a volunteer conservation/training group and managed an Urban Wildlife Group promoting green business opportunities for wildlife trusts across the UK and she also ran conservation training programmes across Scotland before joining the SNH in 1992. Sheila provides support to the SNH North Director in Inverness and North Board across a wide range of issues. She sees her role as one to sell and promote good practise to staff and managers, helping them to know what to do and how to do it and to show how each of their actions does make a difference. At home Sheila's goal is to become a zero waste and zero CO<sup>2</sup> house generating as much as possible of her own electricity. Sheila will be giving some of us a conducted tour of the Biomass Heating at SNH Aviemore Office after lunch and will give a short overview on this installation now.

Sheila intimated that the reason they installed a woodchip heating system in Aviemore is that the original storage heaters were not giving the correct heat for staff. The basic reason why she became involved in this initiative was because SNH has an environmental management system with energy targets and they have an opportunity to lead by example.

There is also the fact that there will be further increases in oil prices over the next 20 years, so making biomass even more attractive.

The woodchip system is not suitable for electrical based heating systems.

Sheila stated that SNH have installed electrical wet central heating at Stornoway Office using Electraheat equipment.

There is an opportunity to promote biomass in the East Highlands. North and West Highlands have quite well developed biomass systems.

Sheila tabled a technical advice note at the meeting and this is attached to the Minutes.

**Question**

Do you buy your wood fuel direct from Russwood and do they own the boiler.

**Answer**

Yes, SNH gets fuel direct for Russwood. The management contract is with Highland Wood Energy for the maintenance of the boiler and hopper. SNH own the boiler, hopper and all metering.

**Question**

Was there a solution to the frozen woodchip problem.

**Answer**

The real answer is to ensure that the consistency of moisture contained in the woodchip does not go beyond 20-25%.

JP reported that Dundee is a smokeless free zone and cannot install this type of heating. The boiler and the fuel has to be approved by the ? and the Scottish Executive.

It was suggested John Porter speak to Rebecca Carr.

John stated that he has a meeting arranged with Dan Gates from the Forestry Commission.

John Porter thanked all the speakers for their excellent presentations.

John also thanked Una Lee for arranging the venue and The Highland Council for hosting the event. He also thanked the staff of the Duke of Gordon Hotel for their excellent service and hospitality.

### **3.0 MINUTES OF MEETING HELD ON 10 JUNE 2005.**

The minute of the previous meeting held on 10 June 2005 was accepted as a true record.

### **4.0 MATTERS ARISING**

#### **4.1 FSC**

JP reported that in regards to Item 4.5 Dundee City Council now specify that 75% of all timber used should be FSC, Pan European, or any other DEFRA approved accreditation or it should be recycled.

#### **4.2 Membership**

John Porter stated that membership from the last meeting had gone up to 186 representing 83 organisations and this was growing year on year.

#### **4.3 Website Update**

John intimated that further information is required for the Website and any information should be forwarded to Yvonne at - [yvonne.mchugh@dundeecity.gov.uk](mailto:yvonne.mchugh@dundeecity.gov.uk)

**ALL**

#### **4.4 Annual Report**

JP intimated that copies of the Annual Report were available at the meeting.

John stated that this is the last year for funding from the Scottish Executive under the 3 year Sustainable Action Grant. It is hoped this will continue in April 2006 for a further 3 years. JP's understanding is that sustainable action grants are only given once. It was suggested SUST might be able to supply funding.

John McSorland to speak to Mark Stirling from the Scottish Executive in regards to funding.

**JMc**

There may also be an avenue in the Scottish Branch of the EST and their Local Energy Support Programme.

David Aird is to try and determine a contact name to allow John to approach them.

**DA/JP**

#### **4.5 Targets - Questionnaire 2004/05**

JP reported that the questionnaire had been circulated to all Forum members and that returns were very poor with only 16 Questionnaires having been returned. Could all members try to return future questionnaires.

#### **4.6 Annual Report**

The Annual Report stated that, according to the previous questionnaire, there had been an increase in initiatives implemented. It was agreed the targets remain the same but it is essential that a good response is received back from members.

It was felt the Scottish Executive strategy may set specific targets.

JP asked members to contact him if they feel the Questionnaire should be re-recorded or reviewed in any way.

**All**

John Forbes asked that a copy of the Questionnaire be forwarded to him. Yvonne to send a copy of same to him.

**YM**

#### 4.7 New Initiatives

JP reported that the Geothermal Scotland had exceeded their annual sales target in one month.

West Lothian Council have trialled air sourced heat pumps in domestic properties. Feedback in regards to same will be shared with Forum members when this becomes available.

### 5.0 **ANY OTHER BUSINESS**

#### 5.1 Future Meeting

It was suggested one of the future meetings be held in the new Headquarters in Inverness.

### 6.0 **FUTURE PRESENTATIONS/SPEAKERS**

#### **Speakers for the next/future Scottish Sustainable Construction Meeting**

JP stated the next meeting will be held in Glasgow on the 24 February 2006 and that a few speakers had been suggested. One of the Topics suggested was the Dunbreck Secondary School sustainable design (Murray and Dunlop, Architects)

It was suggested that George Martin and Johnathan Fair from BRE give a presentation on Code for Sustainable Buildings.

JP intimated that if anyone else wished to put forward a name for this meeting they should contact him.

It was noted Stuart Brown, Dundee City Council, will give a short update on the Sun City Demo House.

The above proposed speakers were agreed.

Caroline Wilson, Edinburgh City Council, has confirmed that the meeting in June 2006 will be hosted by Edinburgh City Council (venue and date to be confirmed).

A number of other speakers have offered to give presentations at future meetings:

- a. Fionn Stevenson - Dundee University
- b. Kirsten Anderson in regards to Planning Advice Note for Micro Renewables
- c. Scottish Building Standards Agency to give a presentation on the change to Regulations
- d. Claire Dallaston in regards to Bats, Birds and Buildings.

It was proposed Janet Pauwells be invited to give a presentation on the Edinburgh City Council Sustainable Guide. This was agreed.

### 7.0 **DATE OF NEXT MEETING**

The next meeting will be held on the **24th FEBRUARY 2006** at the Parish Halls in Glasgow.

A venue is still required for the September 2006 meeting. Anyone wishing to offer a venue for this meeting should contact John Porter.

**Please Note :** Copies of the presentations will be available shortly on the SSCF Website - [www.sscforum.org.uk](http://www.sscforum.org.uk)

JP Thanked the Speakers once again for their Presentations and also The Highland Council for hosting the event.

John Porter thanked everyone for attending.

### **Distribution**

All Forum Members  
Councillor Julie Sturrock  
Director of Support Services  
Chief Executive  
A Anderson, ECPD  
Councillor Jill Shimi  
Ken Laing  
Mike Galloway  
Anne Wilson

cc Councillor George Regan  
Councillor Fraser McPherson

<p><b>N.B. PLEASE FORWARD ANY AGENDA ITEMS FOR NEXT MEETING</b></p>
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JP/YM  
16 September 2005

## **SCOTTISH SUSTAINABLE CONSTRUCTION FORUM**

**FRIDAY 10 JUNE 2005**

**COMMITTEE ROOM 1, 14 CITY SQUARE, DUNDEE**

### **LIST OF ATTENDEES**

	<b>NAME</b>	<b><u>LOCAL AUTHORITY/ ORGANISATION</u></b>
1	John Porter (Chairperson)	Dundee City Council (Arch Serv Div)
2	Yvonne McHugh (Secretary	Dundee City Council (Arch Serv Div)
3	Pete Davidson	Dundee City Council (Arch Serv Div)
4	Stuart Brown	Dundee City Council (Arch Serv Div)
5	Alan Mackie	Dundee City Council (Arch Serv Div)
6	Rob Pedersen	Dundee City Council (Arch Serv Div)
7	Hazel Carnegie	Aberdeen City Environmental Forum
8	Sheilla Currie	SNH <b>(Speaker)</b>
9	Una Lee	The Highland Council <b>(Speaker)</b>
10	Peter Winthorpe	The Highland Council
11	Ken Bamborough	The Highland Council
12	Mandy Wilkinson	Excel Building Solutions
13	Scott Norrie	Angus Council
14	David Aird	SCARF
15	Martin Squibbs	CIRIA
16	Ronnie MacDonald	West Lothian Council
17	George Hay	East Lothian Council
18	Ian Cameron	Perth & Kinross Council
19	Ian Mathers	Torith
20	David Banks	NHST
21	Alistair Smillie	The Moray Council
22	Derek McWilliam	Aberdeen City Council
23	Bill Browning	North Lanarkshire Council
24	Willie Beattie	Forestry Commission
25	Linda Sheridan	Scottish Building Standards
26	Douglas Macintyre	Morrison
27	Amanda Waugh	Glasgow City Council
28	John Forbes	WRAP <b>(Speaker)</b>
29	John McSorland	Scottish Executive <b>(Speaker)</b>
30	Elaine Morrison	SCARF <b>(Speaker)</b>

## **PUBLIC SECTOR SUSTAINABLE CONSTRUCTION GROUP**

**MEETING – FRIDAY 16 SEPTEMBER 2005**

### **Apologies**

Steven Brown	Dundee City Council
David Duncan	do.
Colin McIntosh	do.
Heather McQuillan	do.
Julie Sturrock	do.
Bob Anderson	do.
Ken Armstrong	TUHT
Roz Artis Young	Scottish Lime Centre Trust
David Congreve	Angus Council
Iain Connelly	Fife Council
Doug Duncan	Mansell
Mohamed Elharam	University of Dundee
Sera Fromow	Aberdeenshire Council
Andy Gillies	Perth and Kinross Council
Ian Gilzean	Scottish Executive
Sandy Halliday	Gaia Research
John Hunter	Scottish Prison Service
Misia Jack	SFHA
Fiona Kelso	RMJM
Mike Lunny	Angus Council
Catherine Lloyd	Tayside Biodiversity Partnership
Angus Macdonald	RIAS
Karen McKay	Abertay Centre for the Environment
Willie Mahoney	Perth and Kinross Council
Andrew Marnie	South Ayrshire Council
Paul martin	The Scottish Waste Awareness Group
Vicky McKenzie	East Dunbartonshire Council
Derek Nelson	Forestry Commission Scotland
Moray Newlands	University of Dundee
Anne Pattullo	Vivarium
Ralph Shackleton	Halcrow Group Ltd
Ken Smith	Scottish Executive
Christine Stewart	Scottish Energy Efficiency Office, SCARF
John Thomson	TUHT
Ian Walker	Communities Scotland
Mark Weglarski	
Duncan White	University of Dundee
Alison Wisely	SCARF
Iain Wolstenholme	Aberdeen City Council
Alistair Wyllie	Scottish Executive
Michaela Clelland	SEPA
Roger Adams	Hillcrest Housing Association
Neil Ferguson	Western Isles Council

## Woodchip Biomass Heating System at SNH Aviemore Office

### Technical Advice Note



In 2004, SNH installed a woodchip-fuelled central heating system at its Aviemore office, to replace inefficient & expensive electric storage heaters. This was justified on the basis of:

- Improved sustainability
- Demonstration of best practice
- Energy efficiency
- Staff comfort and improved working conditions
- Local availability & wood fuel
- Available technical expertise
- Controllability of a wet central heating system

Not having the in-house technical experience to manage all aspects of the project, SNH ran two contracts:

- 1) installation, maintenance, fuel supply and ongoing management of the heating system; with Highland Wood Energy of Fort William.
- 2) installation of radiators & internal pipe work (standard for any wet central heating system), with a local heating engineer, plus the ancillary works (concrete plinth and trenching etc).

Having been close to signing contracts with Torren Energy when that company ceased trading, we were very impressed by the ability of HWE to quickly establish a new company and offer virtually the same contract terms as we had wished to agree with Torren.

### Heating Requirements

The SNH office in Aviemore is a 19<sup>th</sup> century granite house in a fairly exposed north-facing location, converted at some point to offices, with an extension built by SNH in 2000. On two floors, it comprises 278m<sup>2</sup> (treated floor area) and provides space for 20 staff in cellular offices. Heating demand (via storage heaters in all offices and common spaces) was typically around 30,000 kWh/yr, with another estimated 5,000 kWh/yr from supplementary daytime fan or convector heating. There were severe failures of the storage heaters to deliver heat economically and when people needed it.

21 radiators were installed, rated at a total of 45 kW. A 60kW boiler was chosen to provide security of output and give some flexibility for additional heating, if required later.

A fire-resistant boiler room and concrete plinth were built within an existing large concrete-floored wooden shed/garage.

### Fuel

Wood chips are supplied as part of the management contract with HWE for the first 12 months of operation, to be reviewed thereafter by SNH. Pre-dried sawmill residues from Russwood of Newtonmore are supplied @ £18/m<sup>3</sup> bag delivered (+ VAT).

An oversized hopper was chosen, to minimise the risk of running out of fuel and to reduce the number of delivery movements – both for operational reasons (blocking of car park, H&S risks, impacts on admin staff) and to minimise transport-related CO<sub>2</sub> emissions.

### Maintenance & Management

HWE are providing free routine maintenance & service (one visit per month), and any other management action required – including ensuring fuel delivery, ash removal, remote metering & data reporting (including error reading auto dialler programmed to contact HWE if any error occurs).

After the first 12 months, SNH will review and assess whether we should take over the routine maintenance or buy HWE's ongoing service & maintenance contract.

## Technical Specification and cost of Heating System

### Heating equipment

1 N<sup>o</sup> 60 kW Wood Chip Boiler

£ 2,457

1 N<sup>o</sup> 16m<sup>3</sup> Wood Chip Hopper

£10,608

with fuel feed auger (c/w gravity burn back protection and mains drench valve)

1 N <sup>o</sup> Electronic combustion control panel with lambda control (c/w error reading auto dialler)	£	987	
1 N <sup>o</sup> Flue Foot Adapter	£	150	
1N <sup>o</sup> Set of Ultra Sonic Heat Meters (c/w integral modem for remote monitoring)	£	472	
1N <sup>o</sup> Current Inverter	£	234	
Shipping			
			£ 2,600
<b>Total cost of woodchip heating equipment</b>			
<b>£17,508 ex VAT</b>			

<b>Enabling works</b>			
Assembly and Installation of Wood Chip Heating Equipment			£ 1,400
Boiler House wiring, Commissioning and Setting to Work, Demonstration and Training in boiler operation, service, maintenance and trouble shooting for SNH staff.		£ 2,416	
Supply and Erection of Flue Arrangement			£ 1,100
Complete Planning Permission and Building Warrant			£ 700
<b>Total cost of enabling works</b>			
<b>£ 5,616 ex VAT</b>			

**Total for construction, installation, commissioning  
& service of external woodchip system**

**£23,124 ex VAT**

<b>Specification and costs of internal and ancillary works</b>			
Construction of concrete plinth, fire-resistant internal boiler room, trenching & burying of insulated hot water pipe & cabling between boiler room & office (3m); plus standard wet central heating layout of radiators, TRVs, all pipe works, pressure system etc.			
<b>Total cost of internal and ancillary works</b>			
<b>£13,930 ex VAT</b>			

**Further information**

Sheila Currie, SNH Greening the Workplace Officer, (01463) 706408

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Bruno Berardelli, Highland Wood Energy, (01397) 773000, Unit 2, Old Mart Industrial Estate, Corpach, Fort William, PH33 7NN. [www.highlandwoodenergy.co.uk](http://www.highlandwoodenergy.co.uk) (including Case Study and photos of the SNH Aviemore project).

If you wish to see the woodchip heating system in operation, please contact the SNH office at Achantoul, Aviemore, Inverness-shire PH22 1QD, on (01479) 810477; but please note that local staff will – as in most organisations - have limited technical knowledge of the heating system.

**SCOTTISH SUSTAINABLE CONSTRUCTION FORUM –  
KINGUSSIE 16 SEPTEMBER 2005**

Presentation on the SNH experience of installing and running a woodchip biomass heating system at our Achantoul (Aviemore) office.

#### WHY

- Old building with poor heating and heat retention.
- Replacing storage heaters and refurbishing the office (including extra insulation)
- Need for comfort and viable working conditions
- Opportunities for SNH to lead by example and promote green options
- Oil and LPG would be fossil fuel, high CO2 emitters, have fuel cost uncertainties and would kick hole in Greening targets.
- No suitable electrical alternatives at the time (though we have since installed an 'ElectroHeat' electrical wet C/H system in Stornoway).
- Opportunity to promote biomass in East Highlands – both equipment and fuel suppliers

#### HOW

- I commissioned a report on RE opportunities at all SNH offices in 2002 (Dulas), which identified Aviemore as a prime candidate for biomass.
- Green/sustainability criteria were part of the specification for the heating system from the start.
- Agreement on the 'non-operational' benefits for SNH were achieved quite easily.
- Took advice from Torren Energy as market leaders on size and types of system.

#### WHAT

- See TAN for technical specification.
- Boiler and Hopper arrived on truck from Sweden.
- Chips came from Corpach at first, then from Russwood at Newtonmore.

#### BENEFITS

- Warm staff with good working conditions.
- Controllable heat via TRV radiators in all rooms.
- Supporting local biomass business.
- Supporting others in E Highlands who may be interested (Estates, FCS, Cairngorm)
- Good PR for SNH – Highland Woodfuel Development Group, MSP visit, this presentation, SNH publications, local visits.

#### PROBLEMS

- Quite a few 'breakdowns' since installation – incorrect setting of control temperature and timers, not knowing it should be run most days however briefly, fuel running out, grate not being cleaned, fuel freezing to side of hopper causing blockage and physically moving the boiler (can get  $-20^{\circ}\text{C}$ ). These really concerned local staff a lot.
- All breakdowns were responded to and fixed pronto by HWE.
- Staff affected by the big disruption caused by installation of radiators and wet C/H piping lost some enthusiasm for the biomass system (even though this would happen whatever heating system was installed).

#### COSTS

- See TAN for installation costs.
- Fuel use in 2004-05 comprised 152m3 =>120,000 kWh, costing £2736 ex VAT. Expect fuel use to fall with better management of controls this winter.

- Compare with at least 40,000+ kWh electricity used (night storage and supplementary day tariff when storage heating failed to heat building).
- Compare kWh delivery with oil: 100,000 kWh oil needs 8,000 Lt, costing c £2,000 currently.
- Maintenance – c £150/year for servicing, emptying and brushing out and the like.

#### PROGNOSIS

- Oil prices are already higher and will get even higher over time, so relative price competitiveness should increase.
- Woodchip prices should stabilise and remain competitive, as more customers come to use woodchips and other local suppliers come on stream.
- Expect the problems to reduce – most were one-off learning experiences about how to run the system.

#### OVERALL PERSPECTIVE

- Management contract is a good idea, as it gives staff and managers confidence that they won't be left in the lurch one cold winter day.
- Glad we did it – great learning opportunity, warm staff, excellent PR, far less CO2 emissions than otherwise, boosts SNH's confidence in taking Green steps.
- Keep local staff and managers – the users – informed and involved from day 1.
- Keep good relationships with installers and fuel suppliers.
- Although not chosen on price, the comparison with the otherwise 'natural' choice of oil heating is already looking good.