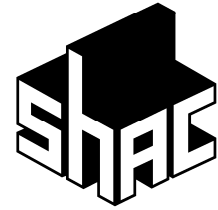


TEAM CENTRAL OTAGO

SUSTAINABILITY: USING WHAT WE NEED, LIVING WELL AND LEAVING ENOUGH FOR FUTURE GENERATIONS. SUSTAINABLE HOMES SUPPORT A SUSTAINABLE LIFESTYLE.

SUSTAINABLE
HABITAT
CHALLENGE 09



BUILDING A BETTER WAY

WWW.SHAC.ORG.NZ
0800 SHAC 09

SHAC 09 asks collaborative, tertiary-led teams to **design and build or retrofit a sustainable home**, develop a campaign to **inform the public** about how their design supports sustainable living and **pass on information and techniques** about their design to the building community.

Team outcomes will be judged in several categories. Each category has a number of possible parameters that you may want to consider. Your team will supply a report with reasoned arguments, simulation and modelling results and other research outputs to convince the judges of the benefits you expect in each category. How you make the trade-offs necessary to realise your vision will be based on how people in your region live – and will want to live – in your affordable, sustainable house and community in five years' time.

In November 2009, judges will review the house, your communications campaign, the resources you develop for designers and your final report. Your final report will describe the house and show the improvement your design exhibits when compared with your reference case and regional averages. Note that although reference is frequently made to “your house”, solutions are also welcomed for proposals for multi-unit housing proposals. The site shall be included when considering each of the judging categories, for example, site water use and runoff, site contribution to a sustainable community, and others.

MINIMUM STANDARDS

Pick a type of housing currently being used, and design a new house that requires fewer resources and supports delightful, sustainable living. Show in a report how your new design delivers a step-change improvement over regional averages and typical house. Renovations are also welcomed. At the minimum, your house must meet Beacon's High Standard of Sustainability™ (see below), and be rated by the EECA Household Energy Rating Scheme (HERS). The use of other thermal modelling tools such as BRANZ's ALF3 is recommended.

Successful teams will make improvements in each judging category. Houses must meet all required building regulations. Your house must be furnished and fitted with appliances that the team shows to lead to a delightful, more sustainable lifestyle.

JUDGING PROCESS

You will report on your goals, strategies, and achievements in each category. Your report is crucial, as it will present your arguments, simulations and other justifications that demonstrate how your new design is a significant improvement over your reference house and regional averages.

Seven categories consider the house and its link with the community. One category covers the communications campaign that explains the house to the general public and to the design and building community. Judges will examine your house performance in each category, and commend your team where progress has been made and recommend further possibilities and approaches.

Successful teams will consider and make improvements in each category, when compared with their reference house and regional averages.

Beacon's High Standard of Sustainability™ ([HSS](#))

- A 25% reduction in energy use in new homes
- A 15% reduction in energy use in existing homes
- A 25% reduction in water use in both new and existing homes
- Average indoor environment temperatures which meet the World Health Organisation minimum standards
- Adequate ventilation without excessive draughts
- Provision for waste minimisation during construction, renovation and operation of homes
- Consideration of sustainability issues in the choice of materials used for construction or renovation of homes.

Prize Eligibility

Some Teams completed a Vision or Concept, some have also completed their consented Design, and others completed their House, with or without associated Furnishings.

Completed	Prize Eligibility
Vision or Concept	Vision of Practical Sustainable Living Communications
Design	Vision of Practical Sustainable Living Communications Design
House	Vision of Practical Sustainable Living Communications Design SHAC House
Furnishings	Design
Communications Campaign	Communications

Submission Process

9 September 2009 – Tim will contact you to discuss report.

23 September 2009 – Tim will contact you to discuss how to submit report, photos, and files.

1 October 2009 – Final Report Due.

6-8 November 2009 – Auckland Area Judge Site Visits

12-14 November 2009 – Wellington / Christchurch / Dunedin Area Site Visits

19-21 November 2009 – Symposium and Prizes! – book your travel today

The Team Report

The purpose of the report is to explain your vision of housing to support more sustainable living. Explain how you have progressed to this goal, why the general public would want designs of this type, and how the building and development community can successfully re-implement similar designs.

Please submit your report by posting a blog entry in your team's area at www.shac.org.nz. Or email the document to tim@shac.org.nz.

The report outline follows:

1 INTRODUCTION – TEAM PRESS RELEASE

Please provide a three to five paragraph description of the SHAC Team's vision for more sustainable housing and their response to this vision. Use the style of a press release.

This might consist of a description of what the project has accomplished, what problem it is addressing, how it is part of the longer term vision of sustainable living, the key outcomes, technologies and techniques, and an indication of costs in the ideal case. Please include quotes or perspectives from students, occupants, or those that participated or been affected by the project.

Straw bales stack up for Central Otago sustainable home

Central Otago residents can look at building themselves a better future thanks to a nationwide sustainable housing competition being driven by Otago Polytechnic.

A team led by Otago Polytechnic and consisting of about 50 people from Alexandra, Clyde, Cromwell, Queenstown and Wanaka, has been hard at work since 2008 designing and building a straw bale house as their entry for the 2009 Sustainable Habitat Challenge (SHAC).

The walls of the Clyde house are now ready to go up so everyone's invited to lend a hand at the 'bale raising' in Earnsclough Road on Saturday 7 November between 9.30am and 4.30pm.

And for those 'sold' on the idea of straw bale homes as the perfect solution to sustainable housing in Central Otago, the house plans will be publicly available on Otago Polytechnic's Centre for Sustainable Practice website so they can download them and start building their own house.

"Straw bale houses are used extensively overseas, particularly in the U.S. where it's become a very common building practice in dry climate areas.

"Straw is a great building material option for Central Otago – it's cheap, natural and provides great insulation for the dry Central Otago climate. Essentially we're taking a waste product and turning it into a solid, durable, well insulated and easy to maintain home.

"Solar heating and a super-efficient masonry stove will keep the interior warm and provide for hot water needs while keeping environmental emissions to a minimum.

"We want to encourage people to copy what we've done so we're making the house plans available free on our website for downloading by anyone who's interested.

"The bale raising and open home will be a great opportunity for people to get hands-on experience to see how they can build a better future for themselves and their families. We'd love people to bring their kids and come along this Saturday to help put the walls up," he says.

For those interested in checking out the house in detail, there will also be an open home on Saturday 14 November from 10am to midday. Otago Polytechnic staff will be on hand to walk people through the house and point out its different features.

Located at 1088 Earnsclough Rd, the three-bedroom house is built with non-treated timber and straw bales which give it a high thermal mass and insulation up to two times the building code requirements.

Earthen floors, a five-tonne masonry stove, thick earthen plasters and a large central earthen 'mass' wall will act as passive solar collectors, absorbing the warmth of the direct solar radiation

Paste Team Logo Here

during the day and warming the home on cold winter nights.

The masonry stove radiates heat over a long period at a fairly constant temperature and only needs to be lit every few days. It has cold smoke rather than hot which is routed around the home for warmth.

It also features a sauna at the request of the owner Sampsa Kiuru who can't wait to move in.

Once the Clyde house is finished, Otago Polytechnic plans to build a public display centre dedicated to sustainable building practice.

Bringing together the construction community in Central Otago has been a key driver in the SHAC Central Otago team. Through the competition over 50 people has assisted to design and build a private dwelling during 2008 and 2009.

The private dwelling is a step towards developing a public display centre for sustainable practice at a later date. Team members were adamant such a display Centre should be in Cromwell, because of its Central location to Queenstown, Wanaka and Alexandra.

The ideal sustainable housing in Central Otago is co-created by the individuals and their wider communities. The ideal house has a low environmental footprint, high social focus through community involvement and is affordable. Its creation is through a construction sector that is open minded, and continually striving to improve its practices.

(please extend box as needed), or provide separate document.

2 TECHNICAL JUDGING CRITERIA

Describe the main features of the house that support more sustainable living.

Report the Heating Energy Load (MJ/annum) for the entire house as given in your HERS report. Report the HERS star rating. Compare house with Beacon High Standard of Sustainability. Report how your assumptions of living style compares with assumptions for HERS.

For each of the SHAC judging criteria, describe in one or more paragraphs how your design will give an improvement over how we live today with less reliance on resources. Refer to the [SHAC Judging Criteria](#). Arguments will vary from the technical (eg increasing efficiencies, insulation) to the transformational (eg offering a better life in a new location, xeriscaping, different housing and urban forms, high quality and pleasingly compact housing, etc)

We suggest this section to be in the style of a Build Magazine article, describing the features for the design and building community. [2-4 pages]. The article must cover each of the SHAC Judging Criteria.

An Example of a BRANZ technical article is at the Build Magazine web site:

http://www.branz.co.nz/cms_display.php?st=1&pg=2172&sn=62&forced_id=yesUH

Sustainability case study [Roman Jaques with Heidi Mardon]

Follows the design and build of a more sustainable urban house in Hamilton.

- * [Difficult task of choosing materials wisely](#)
- * [Passive design strategies](#)
- * [Planning the new building](#)
- * [Waste diversion during deconstruction](#)

SHAC Judging criteria to address:

Energy and Indoor Environmental Quality, Water, Materials, Waste, Affordable and Suitable for Purpose, Supporting a Sustainable Community

Sampsa's house

Description

A two story dwelling built from timber with strawbale and plaster walls with a steel roof. The house is xxx sp m d

HERS rating 9

1. Energy and Environmental Air quality
 - No treated timber has been used in the building
 - The masonry stove uses approximately 1/3 of the wood of a log burner and produces 2x the heat, as cold smoke leaves the chimney
2. Water
 - Rainwater collection for drinking and irrigation
 - Grey water recovered for irrigation
3. Materials
 - Straw bale plaster system, allows directly applying plaster to the straw avoiding materials such as mesh and battens
 - The straw and clay is sourced locally
 - No cement is used in the traditional lime plasters
 - No treated timber has been used

4. Waste
 - Straw is a waste product in Central Otago and is often burnt once seed is harvested
 - Approximately 20% of the timber used has been salvaged
 - Windows have been salvaged into double glazed wooden units from second hand single glazed units

5. Affordable and Suitable for purpose
 - The investment in design means running costs are lower
 - The investment in a masonry stove means reduced amounts of wood used compared to a log burner

6. Supporting a sustainable community
 - Process of house design and construction has involved workshops and open days

 - Courses have run during the house construction include- strawbale construction and design (7 days 6-13th Nov 10 students) Horticultural Landscape design (1 day, 20 students) , Scheduled are design and build a masonry stove (7 days to be held in Feb 2010) Traditional plastering (Jan 2010)

 - Three open days have been held, including the Clyde Thyme festival, the bale raising event (30 people attended) and the tours of the day the judges are present

 - Sharing with Neighbors of hydro energy system

 - Sampsa has offered his home available as an open home until public display centre built

(please extend box as needed), or provide separate document.

3 OVERVIEW OF PROGRESS AND CHALLENGES TO DATE:

A very interesting outcome of the SHAC project is the sharing of stories about what teams wanted to do, but could not for various reasons. For example, teams have had troubles getting materials approved, finding the funds to adapt overseas design guides to the New Zealand Environment, or sourcing system components at a price comparable to what is available overseas.

What design elements or strategies did your team wish to consider but could not include in the design? Why?

Biggest Challenges

- Getting consents on time
- Getting air quality consent for a masonry stove because its unknown
- Getting consent for the plaster system which allows plastering directly to the bale

(please extend box as needed), or provide separate document.

4 TEAM FINDINGS

Please list the main findings from your experience. What recommendations do you have for someone who wants to attempt a similar project at your institution? This includes but is not limited to technical, process, support, and management areas.

Our biggest successes has been the bringing together of 50 people in Central Otago with an interest in Sustainable habitat.

This success has been due to the house owner and lead designers being open minded and highly flexible as to how the wider community can be involved.

5 TEAM MEMBER COMMENTS

Please solicit comments from your team members about their experience. Emotional as well as reasoned responses are good for communicating the successes and challenges of this project.

The easiest way to collect these responses may be to have your team members sign up to the SHAC site at <http://www.shac.org.nz/main/authorization/signUp> and ask them to answer this question when they sign up.

A great way to share ideas as more people get enthusiastic about caring for their environment. Living in a healthy home and living a healthy life style is certainly worth aspiring to. Sven Johnston
Sol Design Ltd

Incurable optimism of the Finns! (Sampsa, the house owner is Finnish)
Chris Naylor Alexandra, Builder

For me its been the networks - the wonderful people involved, and the pleasure in seeing someone doing a sustainable building properly!
Jessica Ayers Seed Consultancy

for me coming to your network event was a good way to meet people who are striving towards a more sustainable community and to understand further what is happening in our local region. It is good to have these events and further ones organised by yourselves. The Public Display Centre will also be a fantastic resource for the area.
Sian Taylor Architect Warren and Mohany Queenstown

The SHAC Project has allowed us to show that you can design and build without compromising the environment and have a stunning result.
Paula Hugens Green Being Ltd Queenstown (consulting Engineers)

(please extend box as needed), or provide separate document.

6 COMMUNICATIONS CAMPAIGN

Please list promotions, communications and research outputs. Please list current and expected. Use either a formal (as below), or informal style as convenient. Attach copies of Media and Publicity Achieved by the team.

The Sustainable Wanaka Charitable trust has a database of 800 people which has emailed event timings

The Otago Polytechnic Centre of Sustainable Practice has a database of 600 which has emailed event timings

Newspaper articles

1. The Mirror 9/7/08 Front page Housing for the future article attached describing the design meetings and opportunity to attend
2. The Otago Daily Times

<http://www.odt.co.nz/the-regions/central-otago/23137/no-blowing-down-ecohouse-straw>

3. Bale raising and open home article

<http://www.infonews.co.nz/news.cfm?id=44124>

(please extend box as needed), or provide separate document.

7 COLLABORATION AND INVOLVEMENT

Please list your team members, email, and a few word description of their role.

Name	Role in project	Email
Sampsak Kiuru	House owner, hands on during project	sampsak@hotmail.com
Sarah and Sven Johnston	Architects, Designers, Salvaging materials, straw and plaster system construction.	Sarah.johnston@xtra.co.nz ; nzsven@yahoo.com
Chris Naylor	Lead Builder	chnaylor@clear.net.nz
Jude Faircloth	Jude coordinated the project for the Polytechnic in 2008	barndwellers@xtra.co.nz
Paula Hugens	Engineering of the house	paula@greenbeing.co.nz
Jessica Ayers (nee Winter)	Provided HERS Assessment Attended design meetings	Jessica@seed.co.nz
Maureen Crampton	From local council. Assisting to get consent	mxo@codc.govt.nz
Derek Craig	Cromwell Builder- attended one design meeting	Dchomes@gmail.com
Emma Dawe	Media- works for local paper	Emma.dawe@sti.co.nz
Caroline Harker	Media- works for local paper	theeditor@thewanakasun.co.nz
Steve Henry	Otago Polytechnic liaison	steveh@tekotago.ac.nz
Keith Hinds	Otago polytechnic staff stone masonry	Keith.hinds@stbathans.com
Anne Salmond	Attended design meeting Wanaka Architect	info@anne.salmond.co.nz
Julie Scott	Attended design meeting Queenstown Affordable housing trust	Julie.scott@xtra.co.nz
Sarah Scott	Attended design meeting. Wanaka Architect	Sarah.scott@xtra.co.nz
Hugh Skinner	Attended design meetings Queenstown Architect	Hugh.skinner@ireland.com
Jean Tilleyshort	Attended design meeting	jeant@tekotago.ac.nz
Karen Trebilcock	Attended design meeting	Karen.trebilcock@stl.co.nz
True Ingo	Attended design meeting	Jack.black@xtra.co.nz

Greg Thump	Plastering house. Attended design meetings	sunandagreg@yahoo.com
Lynda Van Kemp	Media attended meetings- works for local newspaper	Lynda.van.kemp@thenews.co.nz
Alistair Madill	Attended design meetings- Wanaka Architect	Nine-branded@xtra.co.nz
Christina Neuman	Attended design meetings Wanaka Eco design advisor	christinaneuman@orcon.net.nz
Yevrah Ornstein	Attended design meetings- Queenstown SolarLease Ltd	Yevrah@xtra.co.nz
Grant Parker	Attended design meetings. Consultant	grant@webconsulting.co.nz
Jack Pivac	Attended design meeting	jack@delphinus.co.nz
John Fitzgerald		john.fitzgerald@stl.co.nz
Christine Hall	Attended design meetings	christine@weberconsulting.co.nz
Tony Hopkins		Tony.hopkins@stl.co.nz
Gwyneth Hyndman		Gwyneth.hyndman@stl.co.nz
Bill Henderson	Attended design meetings Wanaka Architect	billhenderson@xtra.co.nz
Nicky and James Briscoll	Attended design meetings	james-nicky@xtra.co.nz
Olivia Bennett	Attended design meetings	olivia@weberconsulting.co.nz
Russel Blackstock	Media- attended design meeting	Russell.blackstock@scene.co.nz
Tim Buckingham	Media- attended design meeting	Timothy.buckingham@student.sit.ac.nz
Barbara Withington	Media- met OP staff to discuss	Barbara.withington@stl.co.nz
Jo Wakelin(+ 20 horticulture students)	OP staff has enabled students for Landscape design and planting	jowakelin@tekotago.ac.nz
Steve Holmes (+10 stone mason students)	OP staff has enable stone mason students to be involved in design and build stonework or masonry stove	steveholmes@tekotago.ac.nz

8 BUDGET

Please provide an indication of the significant budget items for the house construction working from your published plans. For houses that have yet to be sold, these numbers will not be published until after sale. Please attach a spreadsheet.

This work has not been completed

9 KEY PHOTOS

Please supply 5-10 hi-res photos of the project. Action shots of team, construction, design, and photos or rendering key concepts.

Key photo are on the SHAC website Central Otago team

10 CONSENT DOCUMENTATION

Please provide copies of the consent documentation.

These are on the SHAC website

SURPRISE THE JUDGES

Please include, if desired, any more information or attachments that tells your team story to judges, the design community, and the general public.

The private dwelling is seen as stage one of a two stage process for a public display centre to be built in Cromwell.

The project has provided focus for an "already interested" regional community

(please extend box as needed), or provide separate document.

11 REPORT LICENSE

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This one will do fine- the one with the most open source



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July 4 '08

Housing for the future

Straw-bale home planned

By Tim Buckingham

THE THREE little pigs would be keen to move into a straw-bale house to be built near Clyde, as not even a wolf's huffing and puffing would be able to blow it down.

The house will be built as part of the national Sustainable Habitat Challenge '09 (SHAC '09), which sees teams of tertiary staff and students, as well as industry professionals, banding together to design, build or renovate, and showcase a home made out of renewable materials.

The competition is organised by the Otago Polytechnic, and will this year involve nine teams from throughout the country, including a Central Otago team, which revealed its plans at a meeting in Cromwell on Friday.

Cromwell's Otago Polytechnic Centre for Sustainable Practice director Steve Henry said it was decided at an earlier meeting the Earnsclough Rd property owned by Sampsa Kiuru would be used for the challenge.

Taking up the challenge

► Nine teams from tertiary institutions throughout New Zealand are competing in SHAC 09, including a Central Otago team.

► There is a five-person judging panel, made up of an architect, builder, scientist, television personality and engineer.

► The judging criteria includes: energy, water, materials, waste, indoor environmental quality, affordability and supporting a sustainable community.

► Judging will be held in October, 2009.

► Further information about sustainable housing and the challenge can be found at www.SHAC.org.nz

► The blog can be found at SHAC09.ning.com

"We advertised who wanted to be a guinea pig and Sampsa came and said, 'my house is it'.

"We believe sustainable housing is the future," Mr Henry said.

Friday's meeting was held for the public to critique the designs, and to inform those interested and the industry on other options when building a home.

Although the design team had come up with the concept for the straw-bale house, Mr Henry said Mr Kiuru would get the final word on what was going to be built.

Mr Kiuru told those at the meeting, via an internet video connection, his goal was to "build a good, nice house", by using new technologies.

He had chosen architectural designer Sarah Johnston, of Geraldine, to build the house.

Mrs Johnston said she hoped the house would become the foundation for larger projects in the area.

Her husband, Sven, was also involved in the project, and the two of them had built numerous houses out of straw bales, including their own home.

She hoped building would start on the site at the start of next year, which would give them enough time to get the house completed by the SHAC deadline of October next year.

Mr Henry said he hoped pupils at the polytechnic and the public would get behind the project.

"It's actually tertiary-based, but no students are involved yet.

"We are hoping to attract students. We are planning on creating workshops to get students involved as part of their classes."

Students involved would get a rebate of their fees, he said.

"If they are productive, they need to be acknowledged.

"It will be a system of exchange that is honourable and transparent."

He said a "key mechanism" was a blog on the SHAC website, where interested people and industry professionals would be able to see the concepts and plans and leave messages through an "open door" policy.

"It's for everyone to get a really good idea of what we are doing," Mr Henry said.



ARCHITECTURAL DESIGNER Sarah Johnston, from Geraldine, explaining to Wanaka architect Alistair Madill the design of the straw-bale house, which will be built in Clyde as part of the Sustainable Habitat Challenge.

Picture: Tom Walter at Flow Photography

Another feature of the sustainable house was the option of putting in a "Varaave Takka", which means "heat storing fireplace", in Finnish. Unlike a typical English fireplace, it only needed to be going for two hours a day. It heats the soap stone in the fireplace,

which then radiates the heat out for the rest of the day and can be used to heat water and stoves.

Judging of the competition will be held in October next year, with the winner taking away a yet to be announced prize.

House of straw Central entry

By **LYNDA VAN KEMPEN**

A STRAW-BALE house to be built at Earnsclough will double as the Central Otago entry in a nationwide competition to design, develop and build environmentally-friendly homes.

Nine teams from tertiary institutions throughout the country have entered the Sustainable Habitat Challenge (SHaC), which is an Otago Polytechnic initiative. The event is funded by the Ministry for the Environment and the Central Otago project will be co-ordinated by the Otago Polytechnic's Cromwell campus.

The Central Otago team includes designers, builders, architects, sustainable building and eco-tourism advisers. Co-ordinator Jude Faircloth said the group met on Friday to brainstorm various aspects of its entry.

The head of the polytechnic's Centre for Sustainable Practice at Cromwell, Steve Henry, said the group had earlier advertised, seeking someone who wanted "to be a guinea pig".

Sampsa Kiuru, who planned to build a home at Earnsclough, near Clyde, had offered to let his home be the focus.

"My motivation was to build a good, nice sustainable house and try out some techniques that I think are very usable,"

Mr Kiuru said.

"At the end of the day we're not building a model house, we're building a private dwelling, not a showpiece," Mr Henry said.

Mr Kiuru had decided to build a straw bale home, with Sarah Johnston, of Geraldine, as the architectural designer and Chris Naylor, of Clyde, as the builder.

The project must be completed by the end of October next year to meet the competition criteria and polytechnic students will help with the design, the construction and landscaping, where possible, Mr Henry said. The whole process will be documented on the Shac website (www.shac.org.nz) and people reading were welcome to comment.

Mr Kiuru wanted his home to have minimal impact on the environment and natural materials would be used. Solar energy would be used for heating.

He hoped to apply to the Central Otago District Council for resource consent by the end of November.

Mr Henry said the project was a collaborative effort between the tertiary students based in Central Otago and the communities of Alexandra, Cromwell, Queenstown and Wanaka.



Eco-friendly: Studying a model of the Earnsclough house site are Central Otago team members (from left) Jessica Winter, of Queenstown, Sarah Johnston, of Geraldine, and Sarah Scott and Alistair Madill, of Wanaka.

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WHAT IS SHaC?

SHaC is a national collaborative project for teams around New Zealand to design, develop and build sustainable housing in their local community. Its aims are:

- To make ideas and methods for low-energy, low-resource housing a reality for New Zealand.
- To find and suggest better solutions that support practical and sustainable ways of living for New Zealanders right across the country. Innovation and creative thinking are vital to this process.
- To encourage collaboration across departments within tertiary institutions, between neighbours, between professionals,

researchers and local councils.

- To learn from a cycle of thinking and then doing, and then thinking.
- For each community to work together to build a home suited to their social, cultural and environmental conditions.
- To promote research, innovation and integration of sustainable solutions to course curriculums around the country.
- Entries in the competition are judged in the following categories: Energy; water; materials; waste; indoor environmental quality; affordability; whether it is suitable for the purpose; and whether it supports a sustainable community.

NOTICEBOARD



Meetings

Meetings scheduled for the week of 14 to 18 July 2008

Tuesday, 15 July

HEARINGS PANEL: Council Chambers, William Fraser Building, 1 Dunorling Street, Alexandra commencing at 9.30am.

Thursday, 17 July

MANIOTOTO COMMUNITY BOARD: Ranfurly Service Centre, 15 Pery Street, Ranfurly commencing at 2.00pm.

Fire Season Status

An open burning season is in effect in the urban and rural fire districts of Central Otago except in those areas with



Sustained: Sampsu Kiuru sits among a load of recycled timber that will be used to build his sustainable house, at Clyde.

House plan coming true

By EMMA DAWE

AFTER 10 years of dreaming of building a sustainable house, the dream is about to become a reality for Sampsu Kiuru.

And if building a new home is not going to be stressful enough for Mr Kiuru, who is originally from Finland, there will be an added pressure to the job – the pressure of a national competition.

The house is the Central Otago entry into the Sustainable Habitat Challenge 09, which pits tertiary students and industry professionals from 10 teams against one another in a challenge to build or renovate to create a sustainable house.

The Otago Polytechnic initiative is funded by the Environment Ministry's sustainable management fund, with judging for the 18-month project to take place in November.

Mr Kiuru jumped at the chance to take part in the competition as part of the Central Otago team, as he was planning on building the sustainable house anyway.

"The competition was good timing and has worked out well because I'm getting a lot of input and expertise from people during the competition."

While building has yet to start – the plan was still waiting for council consent – once it got under way, the aim was to get Otago Polytechnic students and other interested people involved at various stages of the project.

Courses and seminars such as building a masonry stove, a wind power for your property workshop, straw bale design and construction, and a natural plastering course will be run by the Polytechnic during building.

The house will include several cultures – a Japanese-style loft and entranceway, a traditional Finnish masonry stove and sauna, as well as a Mexican tile influence – which Mr Kiuru believed would give the house its personality.

While the house was being built, open days would be held, so people could come and see what was being done.

"Hopefully it will provoke people to think and see different ways of doing things," Mr Kiuru said.

The sustainability project would still live on once the competition was over, because there would be continuing testing in the house, such as testing moisture content and emissions, he said.

Teachers!



Erupting Earth
Go Zone - Curriculum level 2
Published: July 21
Volcanoes

Shake, Rattle & Roll
i.Site - Curriculum level 3
Published: August 11
Tsunamis and earthquakes

Dollars & Sense
Newslinks - Curriculum level 4
Published: July 21
Financial literacy

Prison Panic
Zoned In - Curriculum level 5
Published: July 21
Issues surrounding prisons

For information on any of the topics above or to find out how NiE can help you in the classroom, contact NiE on 0800 849 971 or nie@fairfaxnz.co.nz

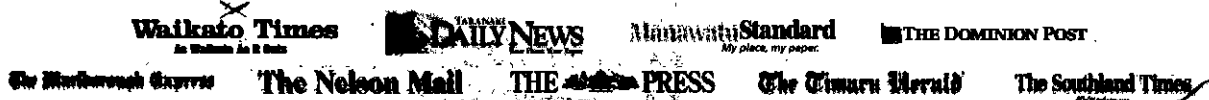


THE 'PERSONAL EXPERIENCE' WRITING COMPETITION

For those teaching at Years 5-8, NiE's Personal Experience Writing Competition is running again in 2009.

If you don't have a flyer and entry form please contact NiE's National Centre.

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For more information contact the NiE National Centre:
0800 849 971 or nie@fairfaxnz.co.nz
or order online www.newszone.co.nz



SAMPASA'S SUSTAINABLE HOUSE:

- ▶ solar hot water and a five-tonne masonry stove with heat exchanger
- ▶ no electrical heating
- ▶ thick earthen plasters and a large central earthen mass wall will act as passive solar collectors, absorbing the warmth of the direct solar radiation
- ▶ straw bales used to insulate the walls
- ▶ minimising waste by using recycled timber for cabinetry
- ▶ rain water collected for irrigation
- ▶ brown and black waste used for compost

Event Calendar for the Sustainable Habitat Challenge



When	What	Where	Cost	Tutor
29 & 30 August 9am – 4pm	Dry Stone Wall Construction Course	Cromwell	\$247.50	Keith Hinds
10 September 2pm – 4pm	The Commercial Benefits of Green Building Seminar	Queenstown	\$65	Paula Hugens www.greenbeing.co.nz
12 & 13 September 9am – 4pm	Schist Veneering Course	Cromwell	\$247.50	Keith Hinds
12 September 9am – 4pm	Introduction to Natural Building workshop	Wanaka	\$110	Sven Johnson from Sol Design Paula Hugens www.greenbeing.co.nz
10 October	Introduction to Natural Building workshop		\$110	Sven Johnson from Sol Design
16 October 1pm – 3pm	Photovoltaics – has their time come? Workshop	Cromwell	\$65	Tony from Smart Energy Ltd
16 October 4pm – 5pm + Networking Event	Micro Photovoltaics and Wind - lecture	Cromwell	Free	Tony from Smart Energy Ltd
17 October 9am – 11am	Micro hydro for your property workshop	Cromwell	\$65	Tony from Smart Energy Ltd
17 October 1pm – 3pm	Wind power for your property workshop	Cromwell	\$65	Tony Smart Energy Ltd
Thurs 30 th October 4 – 5pm Networking Event	Masonry Stove lecture	Cromwell	Free	Albie Barden see www.mainewoodheat.com
2 nd /3 rd November 8.30am – 5pm	Build a Masonry stove course	Clyde	\$440	Albie Barden www.mainewoodheat.com
Friday 30 th October 2-4pm	The benefits of Masonry stoves workshop for architects	Cromwell	\$65	Albie Barden see www.mainewoodheat.com
1st – 6 th November 8.30am-5pm Some evenings	Design and build a masonry stove course	Clyde	\$1000	Albie Barden see www.mainewoodheat.com
7 November 9am-4pm	Build an outdoor pizza oven	Queenstown	\$110	Albie Barden see www.mainewoodheat.com
7 November 9am – 4pm	Straw Bale Wall raising	Clyde	Free	Sven Johnson
7 November 11am – 12 noon	Dry garden visit	Cromwell	Free	Jo Wakelin
9 November 9am-4pm	Build an outdoor pizza oven	Cromwell	\$110	Albie Barden see www.mainewoodheat.com
10 November	Build an outdoor pizza oven	Wanaka	\$110	Albie Barden see www.mainewoodheat.com
8 – 13 November 8.30am – 5pm Some evenings	Straw Bale Design and Construction Course	Clyde	\$1000	Sven and Sarah Johnson 14 people maximum
15 November 10am – 4pm	The big Open Home Event Celebration lunch for those who have helped	Clyde	Free	Judges of SHAC project present. Much publicity and press release here leading to Cromwell public display centre as next phase
16 November 1pm – 3pm	Straw bale construction for Architects	Clyde	\$65	Sarah Johnson
2010				
12 February 12.30pm – 4pm	Natural Plastering	Clyde	\$65	Sven Johnson
To be confirmed	Natural Plastering lecture	Wanaka		Sven Johnson
13 & 14 February 9am – 5pm	Natural Plastering	Clyde		Sven Johnson
Fri night, Sat, Sun dates to be confirmed	Introduction to Natural Building	Wanaka, Queenstown		Sven Johnson and or Paula Hugens

HOME ENERGY RATING REPORT

2 OF 6

CERTIFICATION NUMBER:

5 2 6 4 2 5 5 6

ASSESSOR NUMBER:

9 0 0 2 5

DATE OF CERTIFICATION:

0 1 0 7 2 0 0 9

ASSESSOR DETAILS

NAME	Jessica Evers
COMPANY NAME	Seed Building Consultancy Ltd
ADDRESS	PO Box 102 WANAKA 9343
PHONE NUMBER	03 443 5057
FAX NUMBER	
EMAIL	info@greenbuilding.co.nz

ASSESSMENT DETAILS

SOFTWARE TYPE & VERSION	AccuRate NZ v1.3
CLIMATE ZONE	OC-Central Otago & McKenzie Country
FILE NAME	Design 2
PLAN ID	Kiuru Residence
PLANS PREPARED BY	SRJ
DATE PLANS ISSUED	04-03-09
ASSESSMENT TYPE	<input checked="" type="checkbox"/> Design stage (assessments based on plans identified above; no site inspection undertaken) <input type="checkbox"/> Existing home (site inspection undertaken) <input type="checkbox"/> For New Zealand Building Code H1 compliance

ABOUT THIS REPORT

A Home Energy Rating is an evaluation of the energy efficiency performance of a home and includes the building itself, plus the home's two biggest energy users - the room heating and water heating systems.

Not all of us use our homes in the same way, so ratings are generated using standard assumptions. This means homes can be compared across the country. Your own energy use may not be the same as the standard assumptions so your actual energy use, costs and savings might be quite different from figures in this report – just use these figures as an indicative guide.

Homes that are energy efficient use less energy, are warmer and healthier, cost less to run, and have less impact on the environment. This report will show you where your home's energy efficiency performance is at now, and what you can do to bring it up to the next level.

For more information about Home Energy Ratings, visit www.energywise.govt.nz

QUESTIONS ABOUT THIS REPORT

To ensure you get a high-quality, professional Home Energy Rating report, assessors are all specifically trained and accredited by the Association of Building Sustainability Assessors (ABSA). ABSA also has auditing and quality assurance processes in place to maintain a high and consistent standard of assessments across the country.

If you have any questions or concerns about this report, please direct them to your assessor in the first instance. If your assessor is unable to address your questions or concerns, please contact ABSA on 0800 ABSA NZ (0800 227 269) or email to admin@absa.net.nz

You can also find a range of information about ABSA's assessors at www.absa.net.nz

DISCLAIMER

This Home Energy Rating report was carefully prepared by your assessor on the basis of comprehensive modelling of your home and its space and water heating systems using software developed by the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO).

All information relating to energy consumption and costs presented in this report is based on a range of standard assumptions in order to allow for comparisons with reports prepared for other homes. The standard assumptions include figures for occupancy indoor air temperature, climate and energy costs.

The actual energy consumption of your home may vary significantly from the figures in this report depending on issues such as the size of your household and your personal preferences, e.g. in terms of heating. Similarly, energy costs can fluctuate significantly which means that the cost figures in this report may not reflect current energy prices.

The recommendations in this report are provided without warranty. The energy or cost savings listed for the recommendations are, again, based on a range of assumptions and therefore indicative only. Actual savings will depend on, among other things, the size of your household, your personal preferences, actual product specifications and quality of installation.

Visit: www.energywise.govt.nz for more information about home energy ratings, plus advice and government assistance available to make your home energy efficient.

New Zealand Government

sustainability



Brought to you by EECA, the Energy Efficiency and Conservation Authority

CERTIFICATION NUMBER:

5 2 6 4 2 5 5 6

ASSESSOR NUMBER:

9 0 0 2 5

DATE OF CERTIFICATION:

0 1 0 7 2 0 0 9

ABOUT YOUR BUILDING RATING

CURRENT BUILDING RATING: **8**

The building itself is the most important aspect of a home's energy performance as it determines how well a home's construction allows it to maintain a healthy and comfortable indoor temperature. This should be the first area to tackle to improve energy efficiency and create a warmer, healthier home that is more cost effective to run. The building rating has the greatest impact in a home's overall energy efficiency. A home with a 10-star rating would need no active space heating or cooling to maintain a healthy and comfortable indoor temperature range.

TECHNICAL INFORMATION

Current calculated energy requirements*
(MJ per m² per year):

Heating:

94

Cooling:

1

Total:

95

Conditioned floor area:

149 m²

*These energy requirements do not include the efficiency of the room heating and cooling systems installed. They should not be used to infer actual energy consumption or running costs.

HOW TO IMPROVE YOUR BUILDING RATING

Recommendations for improving this home's building rating are below

Number	Recommendation	Reduction in heating/cooling load	Typical savings (\$ per year)	Potential building rating
1				
2				
3				
4				
5				

Visit: www.energywise.govt.nz for more information about home energy ratings, plus advice and government assistance available to make your home energy efficient.

HOME ENERGY RATING REPORT

ROOM HEATING AND WATER HEATING RECOMMENDATIONS

4 OF 6

CERTIFICATION NUMBER:

5 2 6 4 2 5 5 6

ASSESSOR NUMBER:

9 0 0 2 5

DATE OF CERTIFICATION:

0 1 0 7 2 0 0 9

ABOUT YOUR ROOM HEATING RATING

CURRENT ROOM HEATING RATING: 10

On average, room heating accounts for around a third of a home's total energy use. An energy efficient heating system will put out much more heat for the same energy input - that is, it will give you much more for your energy dollar. It is also important that a heating system is correctly sized for the home it is heating. Recommendations for improving this home's room heating rating are below.

HOW TO IMPROVE YOUR ROOM HEATING RATING

Number	Recommendation	Efficiency improvement	Typical savings (\$/year)	Potential rating
1				
2				
3				

ABOUT YOUR WATER HEATING RATING

CURRENT WATER HEATING RATING: 10

Water heating accounts for around one third of an average home's total energy use. As with space heating systems, a more efficient water heating system will give you more for your energy dollar. Recommendations for improving this home's water heating rating are below.

HOW TO IMPROVE YOUR WATER HEATING RATING

Number	Recommendation	Efficiency improvement	Typical savings (\$/year)	Potential rating
1				
2				
3				

Visit: www.energywise.govt.nz for more information about home energy ratings, plus advice and government assistance available to make your home energy efficient.

CERTIFICATION NUMBER:

5 2 6 4 2 5 5 6

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OTHER RECOMMENDATIONS

There are a number of things that can be done to improve a home's warmth, comfort and running costs that don't impact directly on its home energy rating - for example, the appliances you use or the way you choose to use energy in your home. Recommendations are provided below.

Recommendation	Impact

SPECIFICATIONS FOR THIS HOME

The final page of this report details the specifications on which this home's energy rating is based. The specifications include (but are not limited to) information about the home's area, windows, external and internal walls, floors, ceilings, roof, shading, orientation, exposure, ventilation, infiltration, space heating systems and water heating systems.

FOR MORE INFORMATION

Visit www.energywise.govt.nz to:

- Find out whether you're eligible for Government assistance to make energy efficiency improvements to your home
- Find out more about Home Energy Ratings
- Get great information on making better energy choices at home, at work and on the road

Visit www.absa.net.nz to:

- Find out more about Home Energy Rating assessors
- Find out how to confirm the authenticity of a Home Energy Rating report

Visit: www.energywise.govt.nz for more information about home energy ratings, plus advice and government assistance available to make your home energy efficient.

HOME ENERGY RATING REPORT

6 OF 6

CERTIFICATION NUMBER:

5 2 6 4 2 5 5 6

ASSESSOR NUMBER:

9 0 0 2 5

DATE OF CERTIFICATION:

0 1 0 7 2 0 0 9

These are the specifications upon which this Home Energy Rating report is based. If only one specification option is detailed for a building element, that specification must apply to all instances of that element for the project. If alternate specifications are detailed for a building element, the location and extent of alternate specifications must be detailed below and / or clearly indicated on referenced documents.

WATER HEATING *Appliance Specifications*

Solar water heating with masonry stove boost

ROOM HEATING *Appliance Specifications*

Masonry Stove with ducted flue in massive walls and benches

WINDOWS	Product ID	Glass	Frame	U value	SHGC	Area M2	Detail
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		IGU Clear/Low-e + Argon fill	Timber or PVC				

SKYLIGHTS	Product ID	Glass	Frame	U value	SHGC	Area M2	Detail
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Window and skylight U and SHGC values, if specified, are according to NFRC standard. Alternate products or specifications may be used if their U value is lower, and the SHGC value is less than 10% higher or lower, than the U and SHGC values of the product specified above.

EXTERNAL WALLS	Construction	Insulation	Colour - Solar absorptancy	Detail
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Strawbale		None	Not Specified	As per plans
Weatherboard		R3.2	Not Specified	As per plans

INTERNAL WALLS	Construction	Insulation	Detail
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Plasterboard		R2.5	As per plans
Solid Masonry		None	As per plans
Plasterboard		None	As per plans

FLOORS	Construction	Insulation	Covering	Detail
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Earth		100mm polystyrene	None	As per plans
Timber		R2.5	Timber 10mm	As per plans

CEILINGS	Construction	Insulation	Detail
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Timber Lining		None	As per plans
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ROOF	Construction	Insulation	Colour - Solar absorptancy	Detail
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Skillion Roof - Profiled Metal		R3.6+R2.6	Not Specified	As per plans
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WINDOW COVER	Internal (curtains)	External (awnings, shutters, etc)
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Roller Blinds	As per plans	None
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FIXED SHADING	Eaves (width - inc. gutters, height above windows)	Verandahs, Pergolas (type, description)
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varies	varies	
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OVERSHADOWING	Overshadowing structures	Overshadowing trees
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ORIENTATION, EXPOSURE, VENTILATION AND INFILTRATION

Building Description:	Post 1960, Simple design, >120m2 airtight windows	Open fireplace:	
Orientation of nominal north elevation (degrees):	0	Metal Flues:	1
Site Exposure	Medium Exposed	Passive Window Vents:	0
Roof Space Openness:	Standard	Specific Leakage Openings:	0

Visit: www.energywise.govt.nz for more information about home energy ratings, plus advice and government assistance available to make your home energy efficient.