Sound Concepts

Pilot Installation and Testing

Natasha Perkins, VUW

19 September 2011

AUTEX

Victoria
UNIVERSITY OF WELLINGTON
Te Whare Wānanga
o te Ūpoko o te Ika a Māui

the oticon foundation

The **aim** of the project is to develop and produce prototypes of acoustic baffle and pod designs for technical testing and pilot installation in primary schools and a community hall.

Create classroom spaces that aim to reduce the medical, social and language issues, as discussed by researchers on children's ability to learn. In addition to this the project will also develop and test a practical acoustic solution in a community hall. In doing so…

> raise awareness of the necessity for good acoustics in New Zealand classrooms for all children but particularly for hearing-impaired children.

> raise awareness of the necessity for good acoustics in New Zealand community halls for the hearing-impaired.

The **objectives and key outputs** of the project are to:

> produce prototype tooling at the School of Architecture, University of Wellington and undertake a pilot production run with industry partners.

> carry out technical testing of prototypes at the Acoustics Research Centre, University of Auckland.

> identify classrooms and community spaces to undertake a pilot installation of prototypes.

> undertake a pre and post installation acoustic survey review and technical testing.

> review the outcomes with the objective of making recommendations to reduce reverberation time in classroom and community hall spaces for speech intelligibility.

The **objectives and key outputs** continued:

> design a simple A3 poster that explains the basics of acoustics:

>> In classrooms to be made available to teachers, parents and pupils, principals, schools boards, architects and designers.

>> In community halls to be made available to local government, community boards, and the general public.

> make the results of the project available to the Ministry of Education and local government.

Research Experts and Partners

Natasha Perkins
Lecturer, Interior Architecture,
School of Architecture,
Victoria University of Wellington.

To be announced
Graduate Researcher,
School of Building Sciences,
Victoria University of Wellington.

Contract Manufacturer
Calvert Plastics Ltd
Stokes Valley, Wellington

Material supplier:
Autex Industries Limited, NZ
Auckland

Miklin Halstead
Associate
Marshall Day Acoustics,
Wellington.

Dr George Dodd
Head of Acoustics Testing Service,
Acoustics Research Centre,
University of Auckland.

Dr Wally Potts
Audiologist,
Kenepuru Hospital
Capital & Coast District Health Board
Wellington

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An R+D design and process investigation programme for the use of PET felt panel product in collaboration with Calvert Plastics Ltd.

3D PET FELT Development Programme

Aim A series of development projects to add value and offer scope for the use of PET Felt within interior environments.

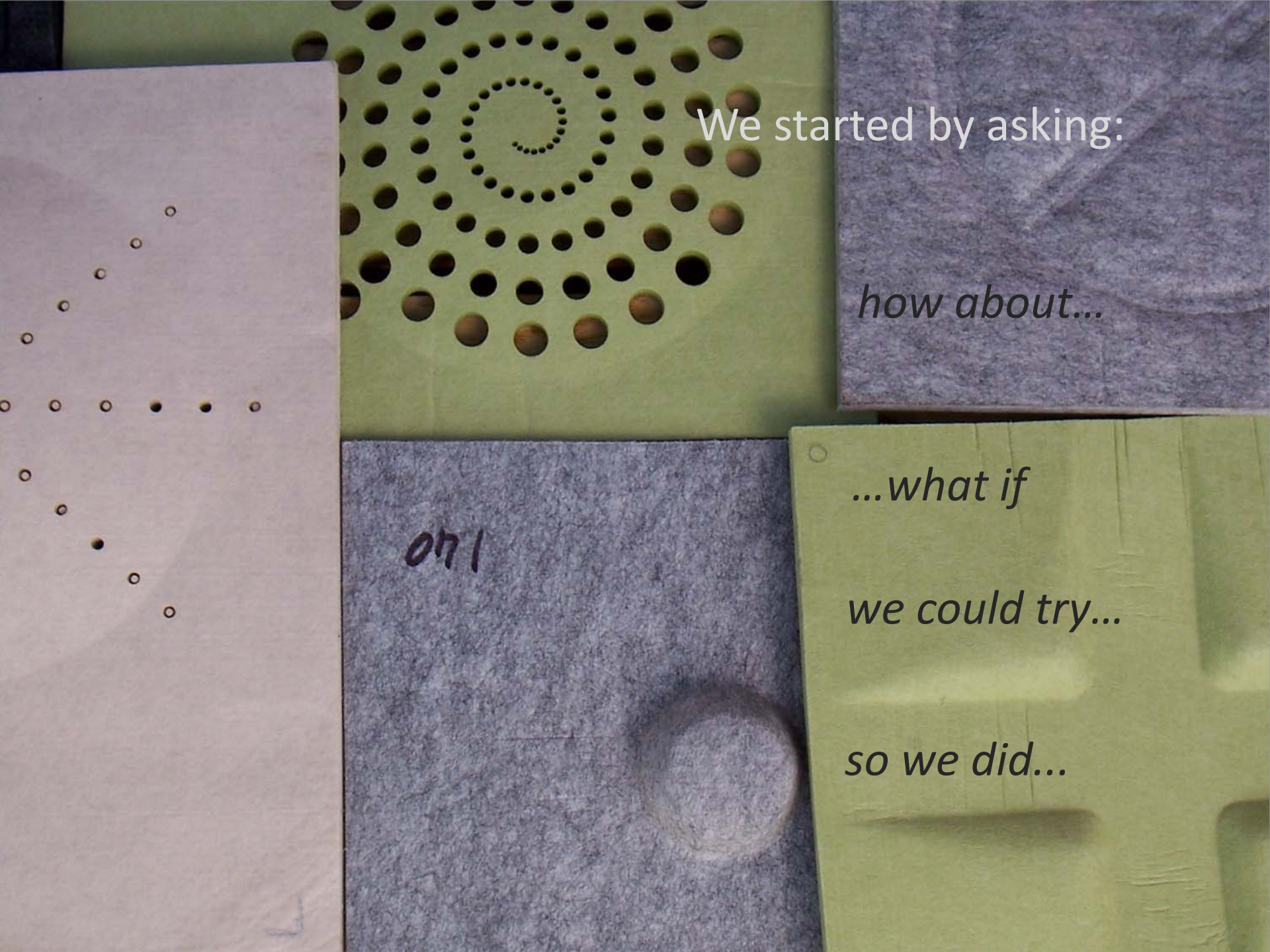
Objectives Research into forming techniques and other processes required in the development of interior surface products utilising recyclable materials including;

> The development of designs engaging in and addressing sustainability issues.

> Alignment with other research agencies and key firms involved in recycled/able materials.

The sheet panel is made from virgin and recycled PET and has a felt-like appearance achieved through industrial needle punching. These material qualities combined with the processes Calvert's utilise are central to the product development programme.

3D PET FELT Development Programme


We started by asking:
how about…
…what if
we could try…
so we did…

Otago School of Medicine, Wellington, 2008
Pilot installation project with Athfield Architects
Winner, National NZIA Award 2009

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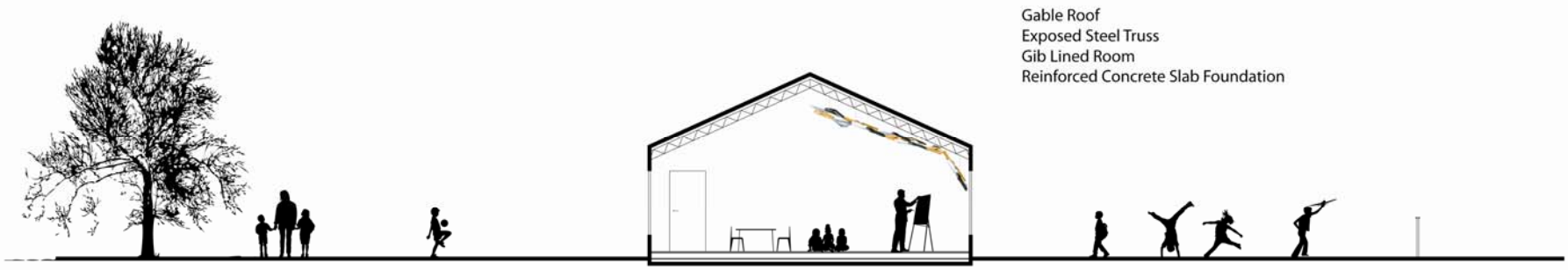
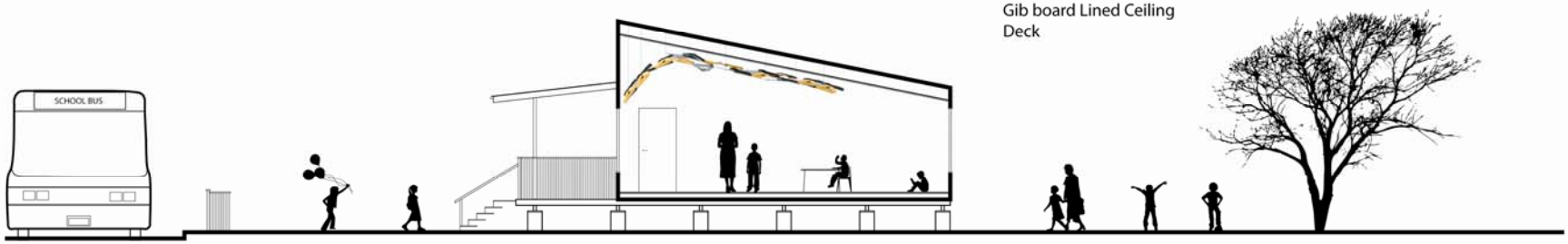
Winner, National NZIA Award 2009

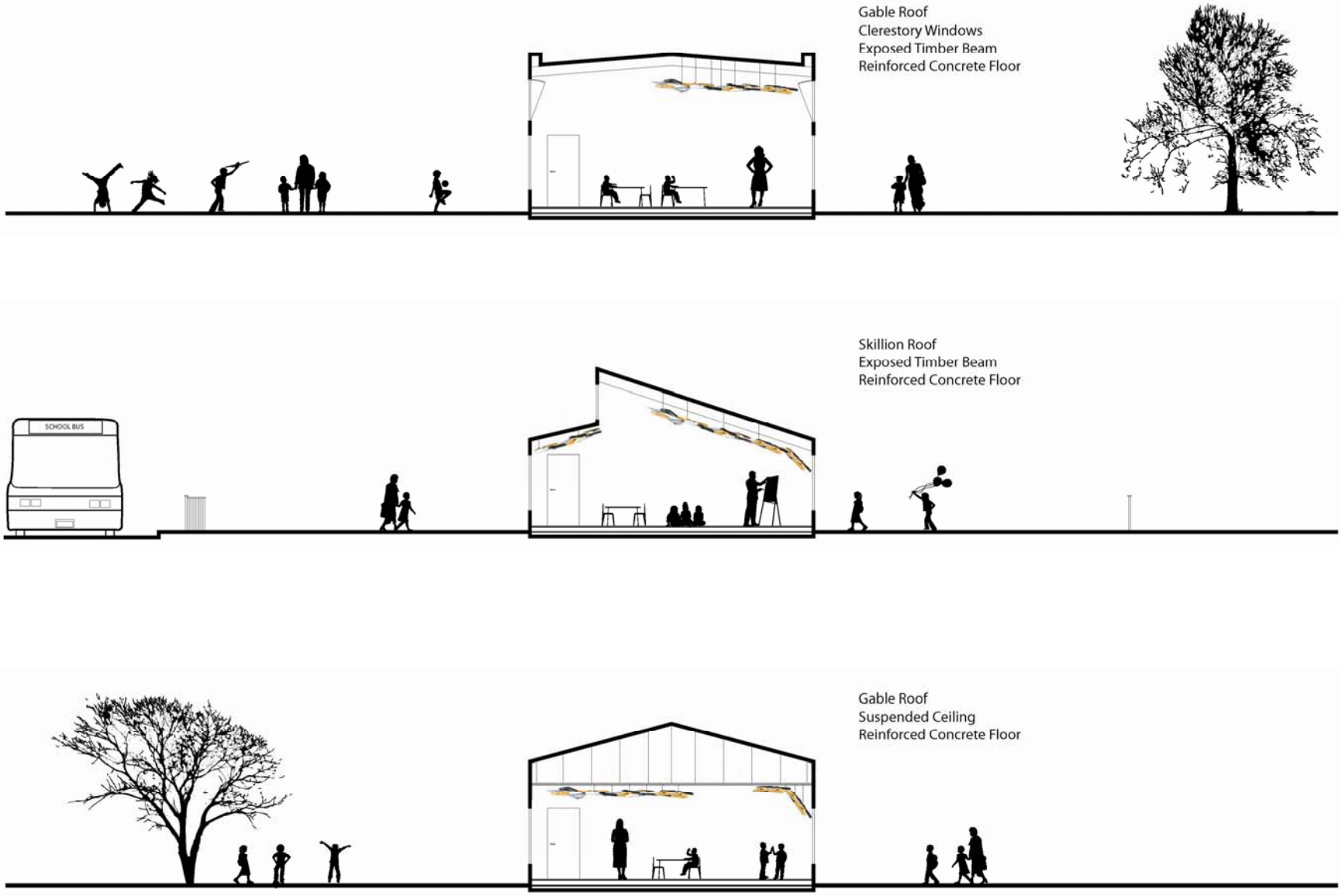
reddot design award
winner 2010





Building types

Sound Concepts



Building types

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Several Wellington Primary Schools will be invited to take part in the project.

This will consist of allowing an installation to be undertaken in a classroom, associated sound testing and survey to take place.

Considerations:

Ethics Approval
> Victoria University requires ethics to be applied for, and approved if there is to be any testing, interviews, recording, photography, focus groups, etc undertaken.

> Schools will also have their own methods to gain consent from their community when research is undertaken on their premises.

Installation

> Outside of school time, preferably in the weekend.

> Off the shelf fixing methods are likely to be used; however, an engineer will sign off on any drawings regarding suspension methods for the ceiling baffles before they are installed.

> All care will be taken to not intrude on the day-to-day operations of the school, but there may need to be some ‘in use’ before (installation) and after noise recording during the day.

Questionnaire/review

> A questionnaire/interview will also be undertaken with teachers of the pilot classroom.

> A draft poster will be presented to teachers for feedback.

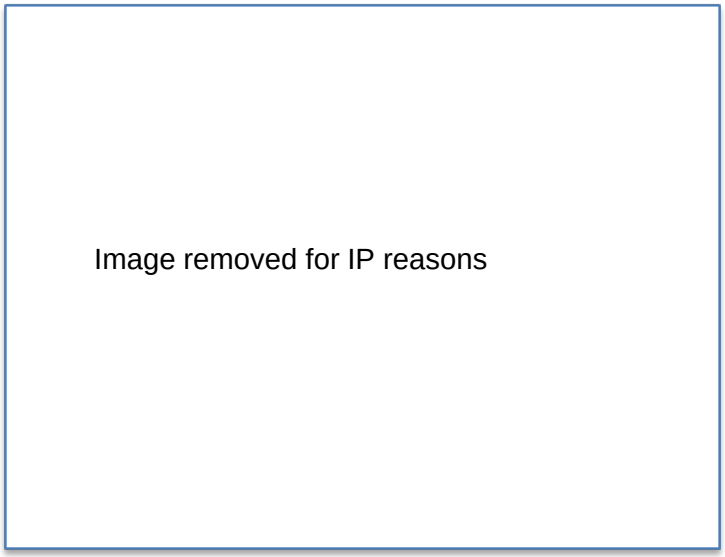
Costs

> There will be no cost to the schools for the installation or product.

> School will most likely get to keep the prototypes.

Results

> A summary of test results will be given to the schools involved.



Timeline

Phase **One:** Jan-Oct 2011
- Project planning.
- Ethics approval also needs to be obtained through the University channels before the project can proceed in classrooms (up to 8 weeks).
- Submit TEC Summer Scholarship Scheme application for research assistant.
- Advertise for Building Science research assistant with acoustics interest to work over summer 2011-12.

Phase **Two:** Sept-Oct 2011
- Information evening
- Confirmation of participants' interest.
- Final form models and drawings produced for participant partners, schools and hall groups to review concepts
-Presentation document to participants

Phase **Three:** Oct-Feb 2012
- Soft tooling
- Pilot production run in collaboration with Calvert plastics and Autex.
- Prototypes tested at Acoustics Research Centre, Auckland (1-2 days).
- Prototypes installed and tested in schools/community hall.
- Research Assistant to test pilot installations for subjective feedback and technical acoustic data results.
-Report writing

Phase **Four:** Feb 2012 onwards
- Produce A3 posters
- Dissemination of outputs through university channels, conferences, and journal articles, case studies, exhibitions etc.

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Due to the RWC, installation & testing may need to take place over Feb-Mar 2012

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Funding and support for this part of the project comes from:
> Oticon Foundation in New Zealand.
> The Victoria University Research Trust.
> Marshall Day Acoustics.
> Autex NZ Limited.

For further information or to register your interest in the project, please contact:

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