

SOUND CONCEPTS DESIGN AND TESTING

**Acoustics form development, testing and pilot
installation in primary school classrooms**

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SOUND CONCEPTS PROGRAM

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AUTEX



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Contract Product Manufacturer

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EXECUTIVE SUMMARY

The aim of this project was to produce and test prototypes of an acoustic baffle called the 'Tri-Form and an acoustic 'Igloo' design for acoustic treatment of primary schools.

The products are designed to reduce the medical, social and language issues associated with poor acoustic treatment of primary school classrooms which affects children's ability to learn. This project will:

- > Raise awareness of the necessity for good acoustics in New Zealand classrooms for all children, particularly for those with hearing-impairments
- > Raise awareness of flexible and affordable acoustic solutions for classroom environments

The research shows how the 'Tri-Form and 'Igloo' products impact the acoustics of five primary school classrooms tested.

For the classrooms tested, four out of five had original speech and perception impairing reverberation times of longer than 0.4 seconds.

The Pod, nicknamed the 'Igloo', significantly affected the absorption of lower frequencies of sound within the classroom environments tested. It also decreased the reverberation times of some of the mid-range frequencies of speech and most of the high frequencies in the classrooms where it was tested.

The 'Tri-Form' consistently reduced reverberation times across most frequencies. This result is excluding 400-500Hz, where it is proposed that the product achieves a resonant frequency.

The research demonstrates how of putting form into the traditionally flat Autex 6mm Quietspace Workstation product improves the acoustic performance of the original product. The developed product exhibits a flexible acoustic product that has the potential to be used in a number of classroom and commercial applications.

