Commercial: VarioComp Underfloor Heating and Air-to-Water Heat Pump

Central Heating NEW ZEALAND

CASE STUDY

Kidsfirst Early Learning Centre, Diamond Harbour

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Challenge

Special care needed to be given to ensuring that the open spaces that typify so many education facilities, including Kidsfirst's new Diamond Harbour facility, were evenly heated and that the floors—where children like to play and rest—would help contribute to the building's comfort, not detract from it.

At the same time, the heating had to be incredibly efficient; one of the building's core objectives was to be sustainable, with net-zero energy.

Contractors and Client

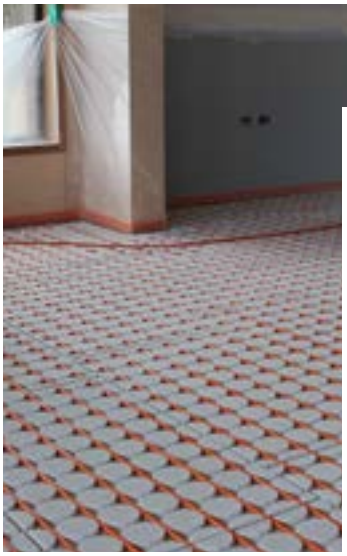
Kidsfirst
Hann Construction Company Ltd
Opus International Consultants

Products Used

VarioComp Underfloor System
2 x BRAN0041MH Air-to-Water Heat Pumps
Fiorini 100 L Buffer Tank

Solution

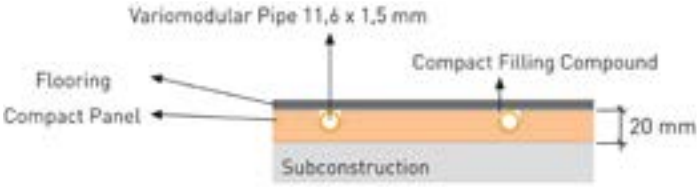
One of the primary features of underfloor heating is that it can heat the large open areas of the learning centre evenly so that there are no cold spots. The VarioComp underfloor heating system was selected because it is ideal for a joisted floor on piles due to its light weight and low 20mm profile. Instead of having pipes within the concrete slab, the system uses lightweight panels and a



Healthy heating with low energy requirements is one of the pillars of this sustainable building.

thin screed over the top. As an added benefit of this, the VarioComp system has a faster response time than in-slab underfloor heating, which is perfect for intermittent occupancy buildings like early learning centres. VarioComp does not require as much time or energy to bring the system back up to temperature if it is shut off for a long period of time like a school holiday. The Austrian innovator of this system, Variotherm, has tested the VarioComp system for comfort, efficiency and longevity during Northern Europe's bitterly cold winters, a good measuring stick for determining a heating product's value in New Zealand.

The two 13.8kW DeLonghi-Climaveneta air-to-water heat pumps provide clean, efficient heat for the system at low running costs. These electric appliances squeeze the most heat out of a unit of electricity, consistently achieving high efficiency, as they are specifically designed to heat in a cold environment as opposed to most air-to-air heat pumps or other air-to-water heat pumps that are designed to cool in a hot environment.



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