

Eco-Kids Pre-School



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PROJECT BACKGROUND DESIGN REQUIREMENTS

Eco-Kids Prep was founded in 2014 in Rynfield, Benoni. The school is an early childhood development center offering an eco-friendly educational experience to children up to the age of six years old. The school building is located on an environmentally sensitive area, with 180 degrees of natural landscape that encourages children to interact with the wildlife on the agricultural holding.

All building design decisions needed to be consciously aware of the building's impact on its surroundings, comfort and child safety.



The growing success of innovative educational approaches is proving to have growing demand, with the school opening its first Grade R class in 2017.

SOLUTIONS & DESIGN DRIVERS



Saint-Gobain Weber's External Thermal Insulation Composite System (ETICS) was used for the building envelope and Gyproc's Classic and Fire Resistant drywall systems were used to partition the internal spaces.

A building of this nature requires a high level of durability. Drywall detailing in passageways and around corners was particularly important to ensure that the building remains in good condition without restricting users.

Isover Cavitybatt insulation installed in the drywall framework contributes to the acoustic comfort of the partitioned spaces.

Ceilings on the project were a mix of Gyproc Skimmed ceilings & Gyproc Gyptone Big Line 6 with Isover insulation in the ceiling void. Insulation in the ceiling void also contributes to the reduction in building heat gain during the hot summer months.

A comparison of two classrooms indicated a significant reduction in reverberation time (RT) (or echos) when compared with a standard ceiling in an adjacent classroom.

Research shows that better quality environments in schools have led to increased attendance by three

days per year, a 5–14% improvement in test scores, and 20–26% faster learning rates in schools with optimal daylight (WGBC, 2014).

Research also indicates that improved acoustics and reduced reverberation time (RT) within the classroom enables students and teachers to hear each other clearly and communicate more effectively.

The building's design is also informed by SANS517: Light Steel Frame Building, which includes guidelines for material use and fire protection when constructing light steel framed buildings. Insulation used on the project also complies with, SANS 10400-XA & SANS 204 standards.

CHALLENGES

The client did note that “building with a relatively new technology requires greater attention to detail but it’s worth it in the end...” Achieving the right level of comfort with the limited number of experts in the market were some of the challenges overcome by the client on this project.

The building needed to compliment the school’s approach to innovation, environmental protection and educational experience.

COMMENTS

“The building performs so well all year round, we have never used the underfloor heating system installed during the build.”

