

Championship Performance for Ecoglo at Stadium

Ecoglo is rivaling the unbeaten performance of Jade Stadium's home Super 12 rugby team The Crusaders, lighting the path for tens of thousands of triumphant spectators at the Christchurch, New Zealand stadium. The issue of emergency lighting was a serious consideration during Jade Stadium's recent redevelopment, which now enables its stands to hold up to 36,500 seated spectators. When consultants Holmes Fire and Safety investigated the emergency lighting options for the stadium, they chose Ecoglo as an effective path-finding solution to be used in conjunction with some electrical lighting. Ecoglo's photoluminescent strips are being used in Jade Stadium on steps, stairs, ramps and handrails. The photoluminescent solution is reducing costs for the stadium while still providing the utmost level of safety for spectators to the grounds when the lights go out.

Ecoglo modified its handrails at Jade Stadium so that the hand could follow their flow.

Lower maintenance costs. Holmes Fire and Safety fire and safety engineer Jenny McMillan says the Ecoglo strips had been installed in the new west and south stands of Jade Stadium on hand rails, steps, stairs and ramps, while emergency electrical lighting was installed in the main concourses. McMillan cites the lower expense and low maintenance of the Ecoglo solution as the key features behind Holmes Fire and Safety's decision to install the system in Jade Stadium. Wiring emergency electrical lighting over large distances meant a substantial cost for Jade Stadium, with an added cost for regular checks to ensure each light was working. However the only maintenance cost involved in the Ecoglo solution was for cleaning the strips, McMillan says. Not only is Jade Stadium substantially reducing costs through the use of Ecoglo, spectators are stepping out during events with more confidence, in the knowledge they are in a safe environment. "When I went to a game at Jade Stadium and was getting to my seat, I could see that the stairs were very clearly defined and I felt quite confident to go up. There was no other lighting on at all," Christchurch-based McMillan says.

The dark-adapted eye. Hamish McLennan, director of Holmes Fire and Safety and safety consultant in the design of Jade Stadium, has dedicated his career to the art of "space orientation" - the physiological process that patrons go through when determining how to find their way. He is the former Professor of Building Science at the University of Technology in Sydney, is a co-author on egress in the SFPE Handbook on Fire Protection Engineering and has 20 years of experience in the field of safety in stadiums and theaters. McLennan wrote the equivalence report that was submitted to the International Conference of Building Officials Evaluation Service. The report argued that photoluminescence was equivalent to the building code guidelines where the level of illumination is 10.76 lux. McLennan isn't just interested in the



Ecoglo's photoluminescent system reduced costs for the stadium and provided the utmost level of safety for spectators when the lights went out.

egress itself, but in the processes that go on in the eye and the messages it sends to a patron's brain, particularly in an emergency, and depending on whether the patron is using day or night vision. The eye uses cone cells in the retina for vision under bright conditions (known as photopic vision), and rods under low light (scotopic vision). McLennan found that photoluminescence could be used to help people make the simple decisions they needed to make to find their way in the dark or reach safety in an emergency. "The underlying criteria therefore in the design of the photoluminescent way guidance system are the recognition of the exit route and the direction to be followed to a place of safety... This is achieved by "outlining" the element so that it can be recognised as a handrail or a door. When this approach is adopted and used in conjunction with signage to make decision-making relatively simple, then recognition is a direct function of visibility," he says. Ecoglo Ltd is working with fire safety engineers and architects to develop the potential of other way-finding solutions such as exit signs and direction signage in stadiums and other public assembly venues.