

New designs at the Chevron

The redevelopment of an historic Melbourne landmark has demonstrated the advantages of modern plumbing products and the flexibility they offer, Jonathan Green reports.

Depending on your age, the ‘Chevron’ in Melbourne might be a hotel you stayed at in the 1950s, or you may remember it as the venue for the Logie Awards in the 1960s. For others it was the place to see a band in the 1970s, or it might have been the last stop on your nightclub crawl in the 1990s. Whatever your memory may be, this 1934 Melbourne icon has just completed its most thorough transformation – from a derelict building slated for demolition into a beautifully restored modern apartment complex. The result is a

stunning development where the designers have successfully retained the original hotel structure, including its red-brick base and off-white rendered walls, and integrated a modern designer complex alongside.

Whilst the refurbishment of the existing structure stands as a testimony to outstanding building restoration work, the secondary new development is at the forefront of modern plumbing products and design. This secondary development was designed to maximise the location, with a number of large multi-level buildings

holding almost 300 apartments without consistent floor plans. This decision was an exciting concept architecturally; however, it significantly complicated the plumbing design.

Marc Williams, national sales and training manager from Studor, explains: “Normally in a multi-storey building, a set floor plan (and therefore plumbing plan) would remain the same over a number of floors before changing. Only then would it require an offset or change of point of connection for the stack. In this project this happened far more often with changes every few floors.”

In a traditional plumbing stack, a relief vent is required to run parallel to the stack. In addition, the relief vent will need to be connected to the stack by cross vents at various floor intervals to enable equal pressures. The Chevron designs would have made this extremely difficult. “The changes in direction were bad enough,” Marc says, “but trying to run a matching relief vent would have been a nightmare.”

Ultimately, it was the desire to push the designing boundaries that brought out the best in plumbing plans with a final fit-out that was neater, cleaner and required less installation than a traditional layout. In a fortunate piece of timing for the complex, the Positive Air Pressure Attenuator (P.A.P.A) by Studor had just been approved to the AN/NZS3500.2.2003 National Plumbing Standards Australia. Combined with the use of air admittance valves (AAV), Studor, working in conjunction with Don Morgan of CLG Design and C.L. Godfrey’s (the plumbing contractor), was able to provide a complete venting solution without any roof or floor penetrations. ➤



The new developments at the Chevron complex contain almost 300 apartments, yet the floor plans are inconsistent – a challenge for traditional plumbing design. Inset: The Studor P.A.P.A protects multi-level buildings from unwanted positive pressures, and can be installed in small spaces.

The P.A.P.A was designed in partnership between Studor and Professor John Swaffield and Dr David Campbell of Herriot-Watt University, Scotland, to protect large multi-level buildings from unwanted positive pressures. Each P.A.P.A is capable of dealing with four litres of back pressure and may be installed on top of others up to four units high, thereby allowing up to 16L of back pressure control. Furthermore, at only 750mm high and 200mm wide, units are able to be installed in small spaces away from view.

Although the P.A.P.A is chiefly designed to handle positive pressures, it is possible to connect an AAV to allow an in-flow of air to the stack at a perceived 'point of need' for additional venting, thereby becoming both a positive and negative venting device. This balance returns the drainage system to

atmospheric pressure without the siphonage of any traps. This was the solution system Marc Williams recommended for the Chevron Complex.

"By connecting Studor P.A.P.A. units to the stacks, a relief vent was no longer required. Then, in conjunction with the use of Studor Premi-Aire air admittance valves servicing the plumbing fixtures on the branches, we were able to free up valuable duct and ceiling cavity space, allowing a far simpler system of sanitary drainage."

Whilst the use of both P.A.P.A. units and AAVs provided the flexibility in design not previously achieved with traditional plumbing layouts, there were a number of added benefits, such as:

- Less material use and reduced installation costs
- Minimal roof penetrations, meaning there

was less risk of water leakages

- Reduced use of fire collars and inter-floor penetrations
- No specialist installation requirements, meaning highly skilled tradespersons were not required
- A lifetime guarantee consistent to the drainage system, with no maintenance as there are no moving parts.

Furthermore, in line with the current swing to Green Star building practices, the P.A.P.A can also be used with H.D.P.E. systems, thereby allowing an alternative to expensive branch junctions on every floor. ■

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