



## *Case Study: Hilton Hotel and Apartments – Surfers Paradise*

### **Designing and Project Managing the Technology Edge**



Appointed in September 2009 by Brookfield Multiplex as the hospitality technology design consultants for the new twin tower Hilton Hotel and Apartments in Surfers Paradise, DAVD Consulting Engineers were first tasked with catching up with the building design team.

Headed by the Buchan Group Architects, a host of varied services consultants and a large Brookfield Multiplex construction team were well underway towards finalising the entire building and footprint design and had actually commenced construction of the common basement levels with the Boulevard Tower (West Tower) well underway.

The project design comprises two towers astride a multilevel common podium with multiple basement levels below. The lower basements are for car parking and services, with the level 1 and mezzanine basements for delivery docks and to house a large administration section as well as a resident's theatre and hotel gymnasium. DAVD provided the full design for the theatre and complete co-ordination with the Buchan Group's team for seating, heights, acoustics and screen and equipment layouts.

With the administration sections on these lower levels accommodating over 80 PC/workstations and a host of printing, scanning and fax facilities, the DAVD layouts, rack space allocation and cabling requirement drawings were quite complex.

Ground floor has a reception for each tower with the main entry porte cochère for the

actual hotel situated in the Orchid Tower (East Tower) and fronting onto Orchid Ave. This entry statement leads patrons through a towering atrium with a gourmet deli and reception waiting area for guests plus an imposing reception counter (laced with hidden cabling and technology) with multiple staff ready to welcome guests on arrival.



A grand staircase transports guests and visitors from this reception foyer to the bar and restaurant on level 1 above.

DAVD faced obvious challenges associated with the design of the audio and signage for this area due to the heights, bridges, atrium and a range of high quality materials and finishes chosen throughout these areas by both the Buchan Group architects and Landini Associates, interiors.

A fully landscaped retail area extends across the entire ground level podium completing a transition extending both inside and outside from Orchid Ave through to Surfers Paradise Boulevard.

On podium level 1, DAVD worked in detail with Landini Associates to design and incorporate the dual purpose audio/DJ systems required for the Signature restaurant and bar mentioned above.

With the two function rooms on L1 (with the ability to form a single venue or ballroom) incorporating a pre-cut perforated metal panel ceiling, DAVD was required to again engage with the Buchan Group team to incorporate not only speakers but also projectors and projector lifts as well as the accompanying motorised screens. A pre-function area and multiple meeting rooms fill the remaining space in the level 1 of the Orchid Tower, (back of house administration including the Hilton branded Magic Room) with substantial additional retail areas linking both towers including the clever use of a bridge link.



The final podium level – level 2 - contains the generous resident's indoor pool and gymnasium in the Boulevard Tower and Hilton Day Spa in the Orchid Tower. These are linked and serviced by a spectacular pool deck with extensive outdoor background music systems and comprising multiple pools and recreation areas for both guests and residents, fully serviced from an Outdoor Bar Pavilion with waiter service provided utilising the Micros wireless point of sale devices over the building WiFi network.

Complicating the technology requirements, there is a mix of residential apartments and hotel pool apartments (those owners who choose Hilton to manage their apartment), with 186 in the Boulevard Tower and 224 in the Orchid Tower, a total of 410 apartments that must be able to be technically configured to operate as either a hotel room or residential apartment. The Orchid Tower also has 159 Hilton hotel rooms on levels 3 – 15 as well as an executive/club lounge and boardroom on L15.

With the DAVD overview completed, we presented a technology road map for discussion and commenced the "battle for space" – the never ending quest on every project for enough valuable real estate to house the technology engine. Having finally "procured" enough space for eight specific IT rooms across both buildings and on multiple levels, our design was about to start – finally leading to a requirement for twenty one, full size (2m) equipment racks.

With Brookfield Multiplex looking for a "technology edge" for use in the marketing and sales campaign, the first item on the agenda was carriage of services to the rooms. With both hotel and residential services required on every floor and every room (other than hotel only services to the actual 159 hotel rooms), it was evident that fibre carriage was required throughout the combined 89 levels of the two towers.

With this thought cemented there was a realisation that we would also require a better than normal delivery of services to the building. After a series of negotiations with multiple carriers, a deal was struck with PIVIT and all services are fibre fed from the greater public network to the Hilton complex with the added bonus of one of the highest Internet speed and bandwidth feeds available in Australia.

These incoming services were terminated by PIVIT for further distribution throughout via the building fibre backbone. PIVIT were also responsible to provide, commission and continually monitor the onsite communications headend, site PABX and Cisco telephones as well as all of the Enablence fibre distribution and conversion equipment located in the cabling risers throughout the 89 levels.



The following breakdown is indicative of the technologies fully designed to detail by DAVD to ensure seamless compatibility between not only the technologies themselves but also the installation styles, techniques and timing of the multitude of contractors and vendors chosen at tender:

Stowe Electrical and Communications had already been appointed by the principal as the electrical engineers and contractors for the project and over and above a major electrical contract it also fell to them to manage a broad range of additional and specialist infrastructure including:

- IT and communications rooms – supply and installation of the complete racking, all UPS and cable management
- Certified fibre block cabling throughout the entire project
- Cat 5e copper distribution for telephony
- Certified Cat 5e and Cat 6 distribution for data
- Audio visual cabling
- Security cabling
- Integrated monitored security alarms, security proximity card access systems with further integration to the Vingcard guest proximity access systems, lift integration to 17 lifts servicing the project and guest and residential entry intercom systems
- Free to air television reception and distribution

- Master antenna TV, Foxtel pay television and satellite TV distribution



Stowe Electrical chose a local firm Surfside Security Systems to work with DAVD in the design process and instigate a complex but fully integrated security system comprising, monitored alarms, CCTV and access control (including car park boom gates and car parking control) with a result that is pleasing in its simplicity of operation.

- An extensive security camera system with camera footage digital recording and archiving – all networked
- Internet (Lan/Wan) CCTV monitoring – in conjunction with Kytex as IT administrators
- Integrated monitored security alarms (including fire doors and perimeter security), security proximity card access systems with further integration to the Vingcard guest proximity access systems, lift integration to 17 lifts servicing the project and further integration to the guest and residential entry IP intercom systems.

Requests for pricing were issued for a specialist audio visual contracting firm. Relax Home Innovations - Gold Coast were chosen at tender to undertake extensive works in the following fields:

- Extensive background music hardware and processing into multiple BGM zones, a variety of speaker systems both indoor and outdoor (environmental speakers against weather and salt environment) and programming (content by Hilton's global brand standard vendor for the provision of Music – Play Network). The various zones provide music for the lobby, gymnasiums (AV), pool deck and other outlets and message-on-hold for the telephone system with local and global advertising content.
- Conferencing multiroom /multizone audio and video distribution and processing with a distributed Peavey Media Matrix Nion and controlled using a Crestron control system
- Multiple motorised video and data projectors and accompanying motorised screens

- Ultra low spill hearing augmentation for conferencing
- Specialty multizone BGM for the day Spa and an audio/lighting experience in the Vischy module
- Full theatre surround sound system and large screen for the basement theatrette
- A specialty designed audio system and processing for the L1 bar area to allow a bigger presence and different ambience by DJs in the later hours of operation
- Multiple television displays throughout including the L15 executive/club lounge
- Club lounge boardroom AV

In the function and meeting areas on L1 as well as a large display in the ground foyer, digital signage has been delivered on a series of commercial Samsung signage monitors, flush mounted with stainless steel. These Samsung commercial displays plus all software and content were delivered by Command Digital Signage.

Guestroom services (including all Hilton pool apartments – over 70% of apartments are in the pool) starting with Vingcard Proximity door locking and in room energy management, Docomo Intertouch (a Hilton approved vendor) and with multiple installations throughout Australia provided the final solution for the guest entertainment package comprising a digital movies/entertainment on demand solution as well as a comprehensive system for public and/or private wireless networking as well as cabled guest high speed Internet distribution.

Alcatel/Aruba wireless distribution throughout the entire complex for use in multiple applications including guest Internet, staff WiFi for telephony, data for the housekeeping PDA application, data for the point of sale portable wireless units on all levels and outlets has been delivered by Integ/UXC through multiple (over 600) wireless access points and multiple aggregation switches.



Finishing off in style with 94cm guestroom flat screen LCD TVs by Samsung Hospitality TVs supplied through Harvey Norman Commercial.

Western Australia based Kytac Group was appointed as IT administrator that included the supervision and assistance with documenting and installing of all third party software systems onto the complex networks (37 – 24 port Cisco switches) and multiple servers plus support of the IT networks and hardware, comprising firewalls, all administration PCs including the reception terminals and all printers and sundry IT equipment throughout the complex.

Software utilised include OnQ PMS (Hilton owned PMS with a Hiram specialty designed and developed interface to their Hiram PMS/trust accounting to satisfy this requirement for the Strata titled apartments), Micros Point of Sale Systems mobile wireless POS devices, Sun Accounting, Meridian Payroll and HR as well as all other interfaces including Vingcard door locking, Docomo Intertouch DMOD/HSIA and, in a first for Australia (but with multiple Hilton installations overseas), McLaren has provided and successfully interfaced their suite of HotSOS and Jazz/DuVoice for back of house operations associated with the signature Hilton Magic Room concept for single point of contact for all guest requirements plus all maintenance and housekeeping services.

Having previous exposure on numerous high profile international hotel projects, and now after nearly two years of work, DAVD Consulting Engineers believes that its involvement in the specification, design and procurement by tender of all audio visual, IT and communications infrastructure has certainly provided that "technology edge" as originally requested by the client.

**David Marshall**

