

# ONE ON WHITELEY

**ONE ON WHITELEY**  
Melrose Arch

**ARCHITECT (HOTEL)**  
Bentel Associates International

**ARCHITECT (APARTMENTS)**  
Osmond Lange Architects & Planners

**QUANTITY SURVEYOR**  
D'Arcy Hedding (Gauteng)

**PROGRAMME & TIME MANAGERS**  
Orion Project Managers

**CIVIL & STRUCTURAL ENGINEER**  
Sutherland

**ELECTRICAL ENGINEER**  
Anderson Consulting Engineers

**WET SERVICES ENGINEER**  
Sutherland  
Tri-Star Construction

**HVAC ENGINEER**  
Acend Consulting Engineers

**TRAFFIC ENGINEER**  
Arup

**FIRE CONSULTANT**  
Specialised Fire Technology

**SPECIALIST LIGHTING**  
Pamboukian lightdesign

**ACOUSTIC CONSULTANT**  
Mtshali Moss Projects Africa

**F&B DESIGN CONSULTANT**  
KDH Catering Design Concepts

**VERTICAL TRANSPORTATION**  
Projitech

**INTERIOR DESIGN (HOTEL) JV**  
Bentel Associates International  
Source Interior Brand Architecture

**LANDSCAPE ARCHITECT**  
Daniel Rebel Landscape Architects

**MAIN CONTRACTOR**  
Tri-Star Construction

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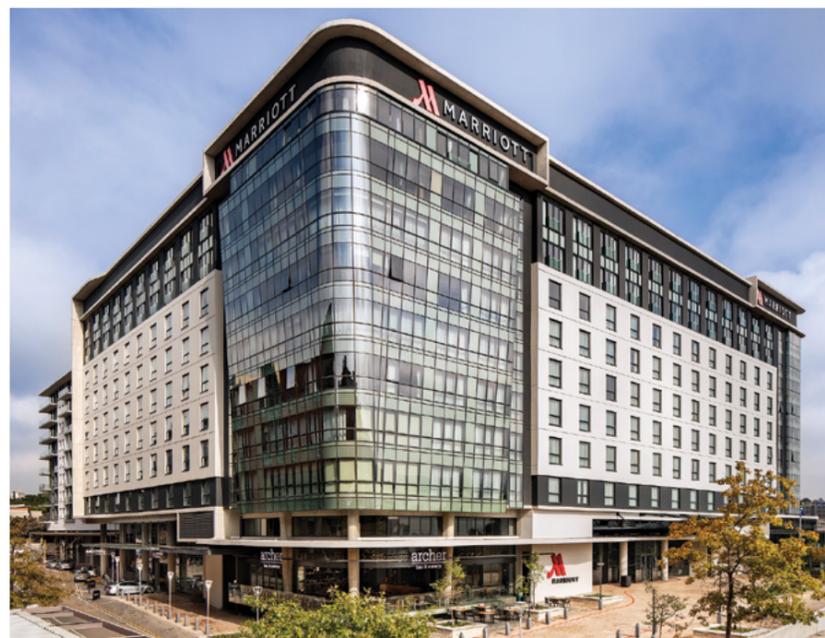
The brief from the client, Amdec, to the design team was to design a mixed-use development comprising of a new 5-star Johannesburg Marriott Hotel & Executive Apartments and a multi-level apartment building above a luxury motor showroom. The design was to seamlessly integrate the building with the existing principles of New Urbanism already established in the Melrose Arch precinct.

The Marriott Hotel, in tandem with a similar height One on Whiteley Apartment building (OoW), was designed to enclose a private, common landscaped courtyard for the two buildings.

Additionally, a double volume perimeter retail component was envisioned to create a more human scale interface with the public at street level and to expand the existing retail/commercial offering within the precinct.

## Concept

The Johannesburg Marriott Hotel offers the public access to a unique new offering within the greater precinct, with an aesthetic affinity to the existing architectural expression, but an expression of materials which provides a distinct identity. The Marriott Hotel is the signature brand of Marriott International whose F&B offering is integral to the guest experience, including The Archery Bar & Eatery as well as Keystone Bistro.



ONE ON WHITELEY





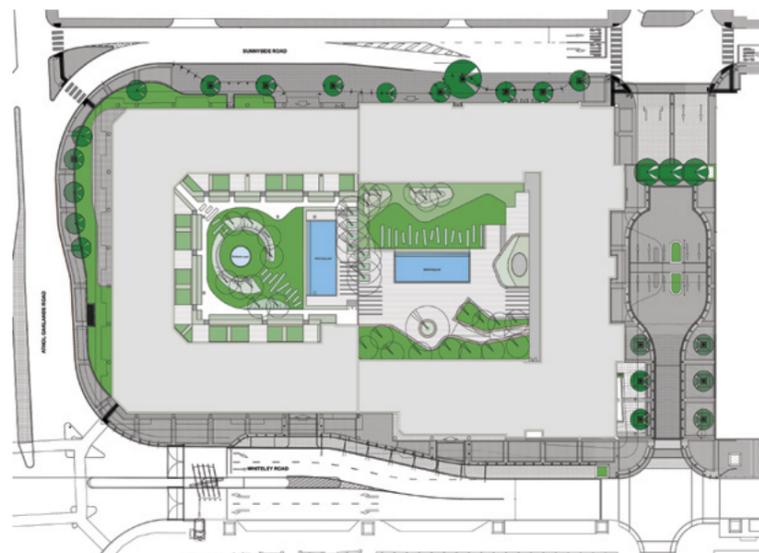
Core to attracting the Marriott Hotel target age group of 25 – 45 is providing the latest trends and innovations in hotel design including Bluetooth access control, mobile guest registration, Wi-Fi and USB charging in all FOH spaces, an in-house gym and VIP M-Club Lounge.

The concept for the design and planning of the OoW Apartment component of the building was led by two major influences: a central courtyard and the sweeping city views. An elevated first floor allows for a voluminous showroom on the ground floor, further enhancing the extensive views. Apartments of various sizes were envisaged to wrap the inner and outer façades.

#### Planning

The Marriott Hotel is divided into three distinct vertical zones. The multi-volume Basement -1 and Ground Floor host the public facilities such as the Keystone Bistro, The Archer Bar & Eatery Bar, all day dining, meeting rooms, boardrooms and four salon ballrooms which can be accessed from either basement parking or from the adjacent precinct. The majority of the back-of-house kitchen, staff and maintenance facilities are also housed on these two levels, with a 'race-track' type design developed around the public facilities to allow staff access to these facilities without having to cross public spaces.

COMBINED SITE PLAN



ONE ON WHITELEY

Level 1, although also a guestroom floor, provides access to the private gym, internal landscaped courtyard, swimming pool and pool bar. Levels 2-5 accommodate the rest of the King, Double/Double and Junior Suite Guestrooms.

Levels 6-8 are exclusively for long stay guests in the Marriott Executive Apartments (MEA) as 1-bed, 2-bed or 3-bed configurations which mimic residential units replete with separate kitchens and lounges. The MEA guests have access to the same facilities as the hotel guests, but access for guests to Levels 1-5 or 6-8 is strictly electronically access controlled.

A central corridor with dual loaded apartments forms the spine of the OoW Apartment building. The eight levels of apartments range from studio and 1 bedroom, to larger 2 and 3 bedroom offerings. The ground floor hosts the primary access and concierge where residents and visitors can access directly off Whiteley Road. Two more central cores punctuate the building connecting all eight floors to the secure, multi-level parking facility, providing quick and direct access.

#### Façade

Off-shutter concrete and anthracite tinted glazing feature prominently in the aesthetic of the hotel, which frames the silhouette of the building at roof level, as well as a horizontal distinction between the public spaces below and the guestrooms above. Dramatic eight storey high shear concrete walls create visual bookends to the hotel, and visually separate the Hotel from the Apartments.

The SE corner double glazed unitised curtain wall inclines outwards at 3.5° with the floorplate increasing accordingly, while the NE corner curtain wall is vertical. The ground floor has a combination of folding stacking doors, sliding doors, weather-tight vestibules, frameless glass shop-fronts, atrium skylights, and a 23m wide by 9m tall



cantilevered glass and aluminum porte cochère. This theme of expressed raw materials continues internally in the smoked glass balustrades, feature stair and scenic lift, as well as copper wall cladding and wrought iron doors with alternating glass fretwork.

Vertical and horizontal lines to the OoW Apartments are accentuated with the use of a wrap-around aluminium canopy at ground floor and a beveled off-shutter crest at roof level. These features further delineate the functions happening within the building. The ground floor showroom is deluged with light from the 7m high frameless glazing system. Similarly, floor-to-



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floor glazed sliding doors and oversized windows accentuate the views. Glazed balustrades provide an unobstructed connection between inside and outside. The façade plays with colour and relief in the vertical bands which dissect the horizontal axis.

The 3.5° inclined 7-storey unitised double glazed curtain wall to the hotel was custom designed to not only allow for accessible internally illuminated spandrel panels, but also to accommodate varying glass curvatures and floor plate depths, while still meeting the structural and fire life safety requirements.

**Construction Highlights**

Framing the external envelope of the building, as well as creating visual separation between

vertical zones, extensive use is made of off-shutter concrete using the highest possible tolerance – ‘Special Off-Form’ to create an extremely smooth surface finish which required no additional sealant. Shuttering to both vertical and horizontal planes was very carefully considered and designed in conjunction with the formwork fabricator to achieve concrete seams as flush as possible, circular ferrule holes with clean edges, and visually appealing shutter patterns.

The two 12.3m high off-shutter columns in the pre-function space were cast continuously using three individually designed oiled steel shutters, while the inclined ellipsoid columns around the hotel bar had custom made shutters to cast these 6.7m columns as a single entity, and then

This Spread: Hotel Images





reinforcing dowelled in afterwards to connect the cantilevered slabs.

The 23m wide sensually curved porte-cochère over the entrance vestibule is a marvel of structural ingenuity, cantilevering 12m from the building from cylindrical steel stays which seem impossibly flat to hold up the combined weight of the 18mm thick glazing and steel joists. Stepping the perimeter joists and cantilevering the glass sheets has created a visually very thin and ethereal feel to the porte-cochère.

#### Engineering

The 12-storey One on Whiteley Structure at Melrose Arch consists of eight suspended slabs for residential and hotel use above a ground floor retail level with four levels of basement below that.

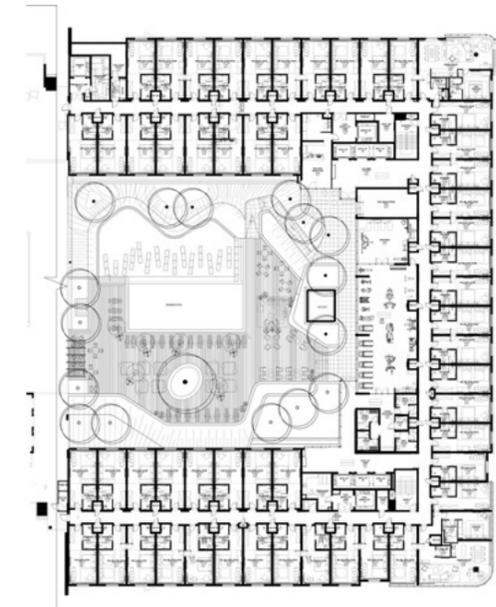
The basement parking structure was constructed using thin post-tensioned slabs whereas the residential slabs made use of bonded post-tensioned cables. The structure is split into two portions separating the hotel and residential floor plates running east to west.

Due to the varying depths of residual granite rock, the foundation method chosen was a combination of conventional pad footings and piles. Single large diameter piles ranging from 600mm to 1,800mm were chosen, firstly to reduce the risk of localised variability but secondly, mainly to achieve cost optimisation. Pile caps were also eliminated and the columns sprung directly out of the pile. Special column cages were dropped into the pile to achieve the desired stress transition.

The installation of the larger diameter piles posed quite a test for the piling contractor with ground



ONE ON WHITELEY



FAR LEFT:  
HOTEL 8th FLOOR

LEFT:  
HOTEL 1st FLOOR



water entering the augured hole and collapsing the sides at around a 9m depth. Fortunately the challenge was resolved successfully through the use of a novel idea of using a temporary plastic sleeve to support the sides until the steel cage and concrete could be poured.

As with most mixed use developments which have suspended outdoor podium space, the first floor structure was particularly complex. In this case an overall envelope depth of 1.5m was required to cater for pools, planters and other hard landscaping in the courtyard area.

#### HVAC & Plumbing

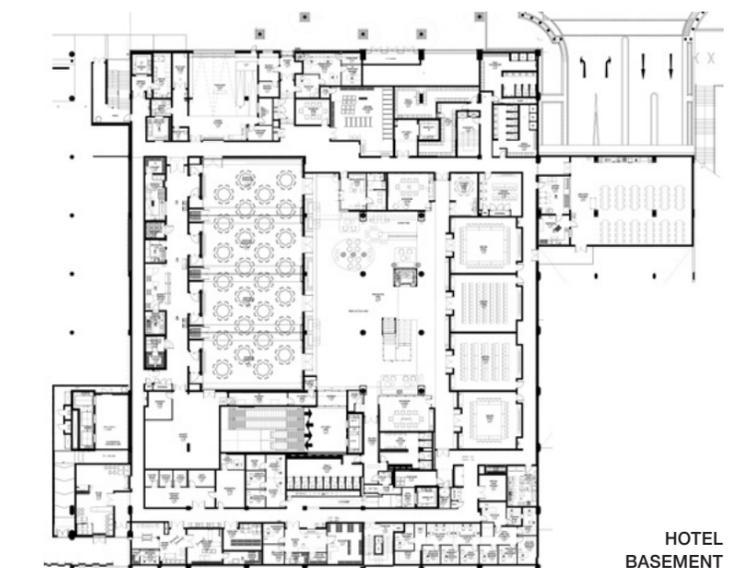
City Gas provides piped gas to the precinct where it is tapped off to provide the fuel for bulk water gas heaters with a separate supply to the residential, hotel and retail to maximise efficiencies resulting



HOTEL  
GROUND  
FLOOR



ONE ON WHITELEY



HOTEL  
BASEMENT



from counter-cyclical usage. This heated water remains in circulation via looped systems and can be used on demand by all bathrooms and public ablutions. Chilled water is distributed to the roof mounted air handling units, which is supplied via a ring main fed from the District Cooling Plant to provide air-conditioning to the buildings, with a combination of VRV and fan coil units provided to supplement the hot and cold air requirements of the individual spaces.

#### Sustainable Elements

Double glazing has been provided for 90% of the façade curtain walls to the building, with specific performance glass used on the N & NE façades which are likely to experience the highest levels of insolation. Acoustic and thermal requirements have been met through the use of double glazing on all bedroom windows and hotel curtain walls.

A high thermal insulation has been achieved on the roof through a composite construction combining reinforced concrete slabs, 80mm 'Ecospray' insulation, topped with 50mm lightweight screed, in turn sealed with cold applied waterproofing.

Building Management Systems together with Global Property Network Standards and a Room Management System combine to control electrical consumption whilst optimising the guest experience.

#### Hotel Interiors

The inspiration for the hotel interiors takes its reference from the confluence of street art, Highveld storms, the railway commuter, Ekasi street style and the play of shadow and light in the city. These ideas express themselves in the use of a very natural, verging on industrial, palette



including copper, brass, leather-look porcelain tiles, engineered timber planks, off-shutter concrete and textured wallpaper.

Examples of feature materials utilised to bring a more tactile feel as well as assist with acoustics to these vast public spaces are:

- an interlinked 'cascade coil' mesh which forms a 6m high by 40m wide continuous backdrop to the pre-function space.
- artificially engineered 'Cor-ten' like cladding panels which clad the 2 storey, curved executive office behind the concierge and reception desks.
- a mixture of fretwork glass, wrought iron pivot doors and fixed screens juxtaposed against vast expanses of oak panels stained with Jax Oleum polyurethane sealant.

Particular care has been taken in choosing the varied performance glazing used on the scenic lift, cantilevered feature stair, internal balustrades, vestibules and skylight to create a visual connection between the disparate elements with a sophisticated smoked charcoal appearance throughout.

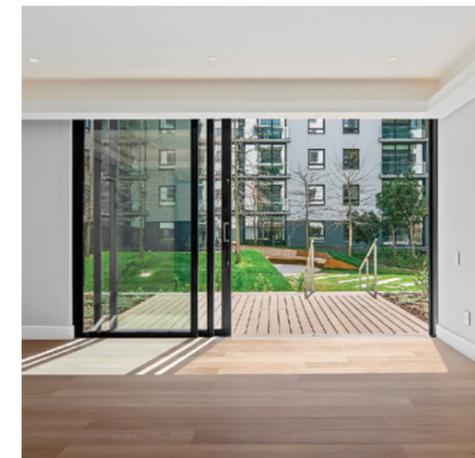
#### Apartment Interiors

Open plan kitchens are situated towards the rear, allowing the living space to flow out on to the balconies and maximise the ingress of light.

The materials and colour palette for the apartment interiors were carefully considered with many options being tabled. Key was finding balance with neutral tones and textures to provide a warm but still relatively blank canvas for residents to create their own space and identity.

#### Landscape Architecture

The central courtyard is divided by means of a sculptural steel screen wall with detail cut outs, as well as pergola structures. Creepers soften the view and visually screen off the courtyards. Each of the courtyards has a swimming pool with bamboo decking.



APARTMENTS FIRST FLOOR

The residential courtyard was developed on two levels. The upper level adjacent to the ground floor apartments was provided with bamboo decking and a detailed planting mix. An iconic seating bench with reflection pond, set within a sculptural earth mound, not only serves as a tranquil gathering space for the residents, but also as a focal feature to the development. All seasons evergreen lawn provides a lush finish, which is complemented by the diverse planting mix adjacent to the apartments. Quercus palustris trees define the central gathering space.

In the hotel courtyard a seating wall with Rustenburg granite finish was provided along the southern edge of the deck area and an indigenous planting mix softens the edge to the hotel. All seasons evergreen lawn was provided to the northern part of the courtyard along with stepping blocks.

