15 Alice Lane South

The building is a simple rectangular shape with a particularly interesting façade and external creativity to make this yet another iconic landmark in the heart of Sandton.

TEXT: PARAGON ARCHITECTS, TIBER CONSTRUCTION, COURTESY OF CONSTRUCTION WORLD
PHOTOGRAPHY: ANDREW BELL FOR PARAGON ARCHITECTS

15 ALICE LANE SOUTH
Sandton, Johannesburg

DEVELOPERS
Zenprop Property Holdings
Growthpoint Properties

PROJECT MANAGERS
CAPEX Projects

ARCHITECTS
Paragon Architects

QUANTITY SURVEYORS
Schoombie Hartmann

CIVIL/STRUCTURAL ENGINEERS
Sotiralis Consulting Engineers

ELECTRICAL ENGINEERS
Quad Africa Consulting

MECHANICAL ENGINEERS
Adaptive Resource Engineers

WET SERVICES ENGINEERS
GK Pereira Consulting

FIRE CONSULTANT
TWCE

FAÇADE CONSULTANT
Andrew Riley & Associates

GREEN BUILDING CONSULTANTS
PJ Carew Consulting

LIFT CONSULTANTS
Liftech Projects

WEB-BASED INFORMATION SYSTEMS
Iqela Software Solutions

MAIN CONTRACTOR
Tiber Construction

15 Alice Lane South is located off Sandton Drive, adjacent to Sandton City Shopping Centre. This four storey office park, with 3 basement levels, designed by Paragon Architects for Zenprop Property Holdings and Growthpoint Properties, is a simple rectangular shape with a particularly interesting façade and external creativity to make this yet another iconic landmark in the heart of Sandton.

Architecture and Design

The context of this project had a profound impact on its design. This is the sixth building on the Alice Lane Precinct and sits in the southern corner.

An early decision was made to rehabilitate the existing structure, originally consisting of 5 storeys, including two basements, rather than demolish it. There were compelling reasons for doing so, including cost and time benefits. However, it did complicate structural issues somewhat, both vertically and horizontally.

Adjusted Plan

The original plan was stepped and this subsequently required the accommodation of three different grid systems across the building, into the interstitial spaces around it and the adjoining buildings. Three of the existing five levels were retained and converted to parking. This has subsequently joined the existing super-basement below the precinct, which will provide a total of 3,500 parking bays.

An additional parking level and transfer structure was added as well as five storeys of office plates, each with a floor area of approximately 4,200m². The length and width of these plates initiated the need for a single internal atrium running the length of the building that brings natural light and reduces the plates to a more manageable size.

The transfer structure sits above P zero level and acts as a junction for the transfer of forces from one grid system to another. A connection is created to the ABSA Towers building from parking level 0 to the existing ABSA Towers canteen where employees can make use of the existing kitchen and canteen area.

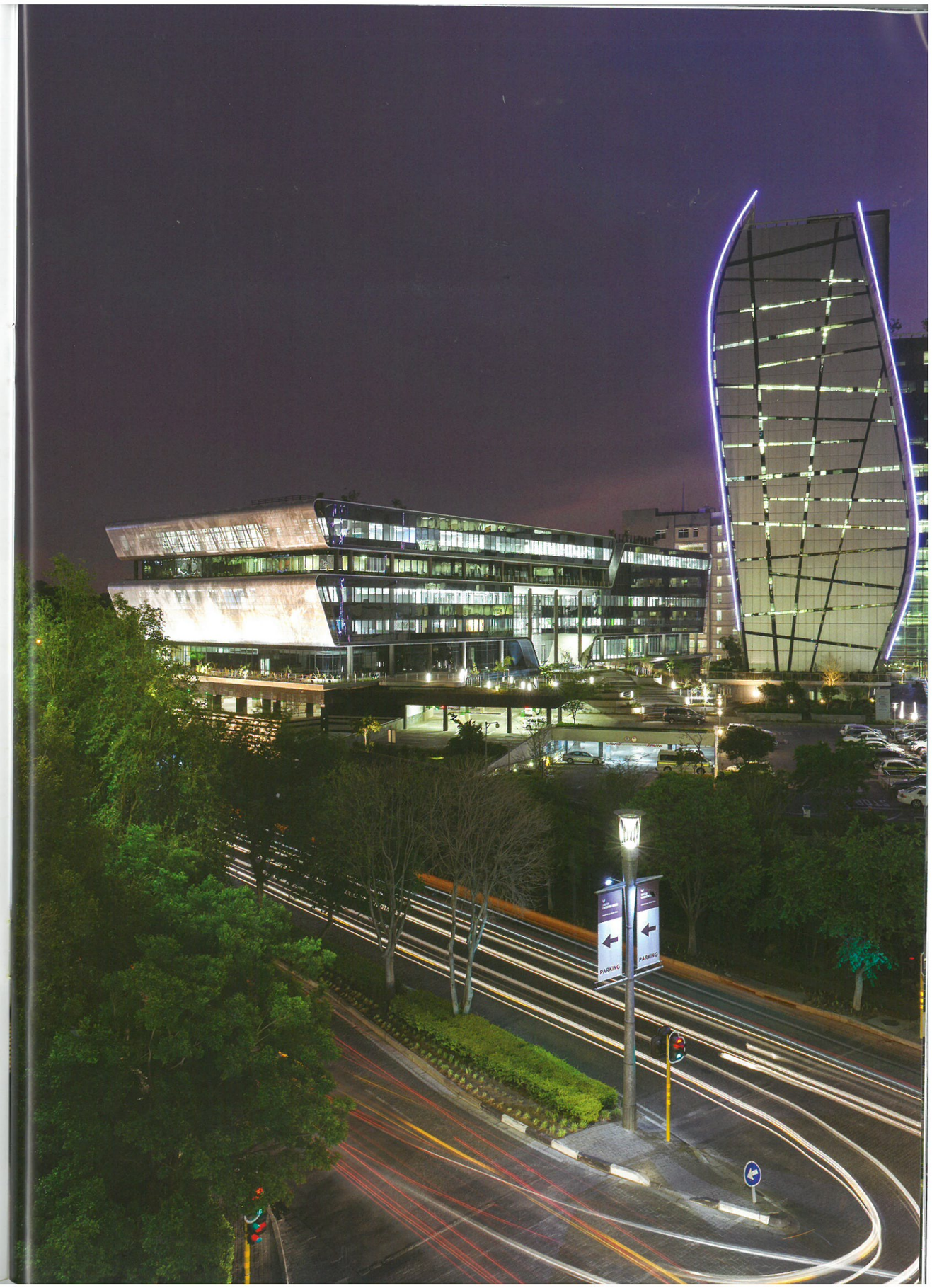
15 ALICE LANE SOUTH

DATA

Basements Gross Bulk Area:
26,310m²

Office Gross Bulk Area:
21,420m²

Gross Lettable Area:
19,400m²



The ends of the building are softened with the curved glazed ends generating an inverted trapezoidal form

The context of this project had a profound impact on its design. This is the sixth building on the Alice Lane Precinct and sits in the southern corner.

Design

The long narrow atrium opens the east and west cores to accentuate the vertical circulation provided by two scenic elevators. The ends of the building are softened with the curved glazed ends generating an inverted trapezoidal form. This contrasts with the concrete which flanks the main entrance, the construction of which was also complicated. Together, it complements the plan which is, in itself, a parallelogram, necessary to accommodate all the geometric conflicts.

Façade

The building form is further softened and layered with the addition of perforated aluminium screens, suspended off the full height glazing on the east and west elevations, to shade the building from the morning and afternoon sun.

The perforation pattern has an opening percentage of approximately 30% to 35%, which means that a minimum of 65% to 70% of sunlight is blocked from the face of the western and eastern façades.

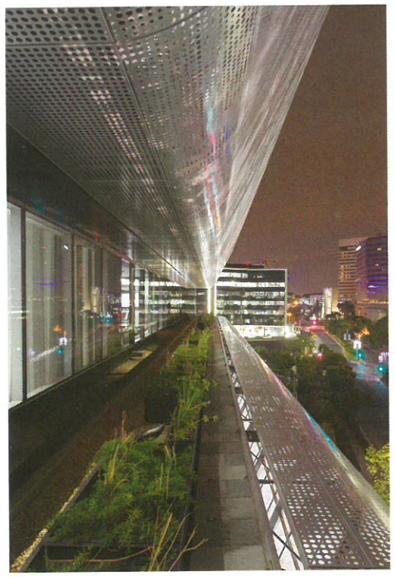
In addition to their functional role, the screens provide a powerful aesthetic to the building, and are expressed as circular perforations on a regular grid to form tree motif.

Design Continuation

The concept of the tree motif continues into the building and informed the interior design. Tree patterns in various materials were added to the lobbies and ablutions to give an illusion of space. Back-lit forest screens, in both the mens' and womens' bathrooms, illuminate the areas. Playful mirrors dot the walls and emphasise these panels. External planting and cascading levels reduce the elevated scale of the entrance which provides a softer and more tangible environment.

The floors are connected over the atrium through link bridges. The bridges are located on the west side on the 1st floor and on alternating east and west sides from the 2nd floor to the 4th floor. These were cast integrally with the structure and assist with flow between floor plates.

The building form is softened and layered with the addition of perforated aluminium screens



A timber deck has been constructed at the main canteen area on the north eastern ground floor level. The position of the timber deck provides scenic city sunrises and sunsets, with shading to be provided through the use of umbrellas that complete the laidback design.

In the eastern and western atria are scenic lifts from parking level 2 to the 4th floor. A view of the reception desk, planter areas on either side of the atrium and trees, provides a tranquilising effect, providing the impression of being outdoors whilst still within the building. The eastern lifts lead to basement level 2 parking and the western lifts lead to basement parking level 3.

The main entrance staircase is illuminated on each individual riser. Polished concrete floors are used on the landings and precast concrete stairs throughout. This provides a continuous and seamless design. The stairs rise from parking level 0 to ground floor with multi-layered landscaping on both sides.

Construction Process

Tiber Construction was responsible for the demolition and construction of the building.

Prior to new construction commencing, two floors were demolished above ground floor. The demolition of the existing building took seven months.

The foundations began in October 2012 and the project achieved practical completion in May 2014, resulting in the project construction period of 18 months, despite challenges and difficulties faced throughout the construction industry. One of the biggest challenges was the underpinning of foundations and introduction of micropiles to strengthen and underpin the existing structure, a process which was very time consuming and laborious.

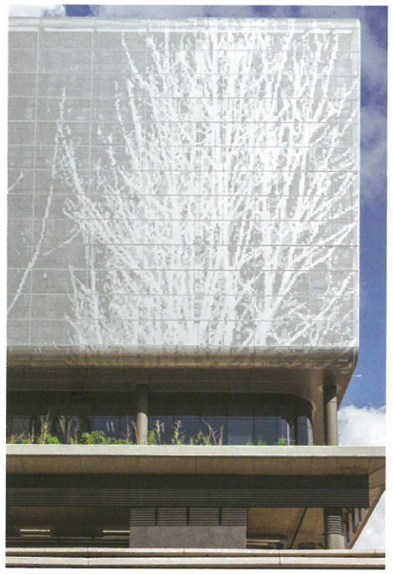
Structure

The superstructure is supported by 13 shear beams that span 31,9m x 1,5m x 2m at parking level 0. One particular challenge with these was the requirement for a continuous concrete pour of four beams at the same time around the escalators which lasted 22 hours.

Fly ash extender was used on all concrete which decreased the quantity of Portland cement required and, therefore, assisted in diminishing the negative environmental effects of raw material depletion. Fly ash is a by-product of steel manufacture and its introduction contributes to the reduction of negative impacts on the environment through construction.

To shape the eastern and western gables, sloping columns were constructed. These columns required intricate setting out and special shuttering. The columns needed to be set out and poured at an angle in order to achieve the desired slope.

The same precision, detail and construction was required for the main entrance sloping walls. These walls required specially designed PERI shutters and support formwork with meticulous workmanship to achieve architectural off shutter concrete resulting in an impeccable finish.



The main Entrance landscaping is designed to create a layered feature, creating the effect of a budding rose from a bird's eye view. Each planter is set out to individually constructed curves

The long narrow atrium opens the east and west cores to accentuate the vertical circulation provided by two scenic elevators

Sloping walls designed on the northern and southern façades from the 3rd floor slab to the 4th floor soffit also required intricate setting out and special curved shutters to be utilised.

Green Construction

Overall, the site diverted 84% of waste generated through demolition and construction from landfill. All office equipment and fittings have been reused from the existing building.

The project goal was to reduce/ recycle/ salvage/ reuse a minimum of 70% of the waste generated through demolition and construction. To reach this goal, all trades needed to reduce waste and recycle materials as directed in the Waste Management Plan. The abovementioned goal was achieved through monitoring of waste generated on site and the use of waste management facilities.

Three loads of waste timber were delivered by Tiber to Nokhuthula special needs school in Alexandra, for use in the woodwork classes offered by the school. The waste timber was used for woodcraft by the students. Furthermore, the use of a special waste separation facility, created by Skipwaste, helped in reducing the quantity of rubble directed to landfill. A total of 42% of the clean

The superstructure is supported by 13 shear beams that span 31,9m x 1,5m x 2m at parking level 0

rubble removed from site was reused by Skipwaste in brick production.

The site location is approximately 8 kilometres from Alexandra which is where the majority of general labour was sourced. The project aim was to source at least 80% of materials within 50 to 400 kilometres from the site and this objective was achieved.

Sustainability

The building has achieved a Four Star Green Star SA – Office V1 Design rating. A number of sustainable aspects include:

Fuel-efficient vehicles are catered for with 33 parking bays provided. These parking bays are conveniently located near the escalators and lift areas. Change rooms and showers are provided in the basement parking for employees to refresh after a bicycle ride to the office.

The fire protection system has been designed not to expel any water during testing. Water is directed back into storage tanks.

Motion occupancy sensors detect when spaces are not occupied and switch off light fittings accordingly.

At least 57% of the office area has natural daylight levels sufficient to allow lighting to be turned off during daylight hours.

Wet Services

Apart from the standard Wet Services design applicable to a Green Star Building, Sutherland's (formerly GK Pereira) design managed to capture a large percentage of the roof rainwater into a single piped system and collect this water into a concrete storage tank in the lowest basement. This water is then filtered, cleared and used for all toilet and urinal flushing throughout the building.

One of the interesting challenges was how to get the rain water into a storage tank in the third basement level, with a street level overflow to rain water system, as well as having an automatic main council water by-pass for when there is no rain water available. This was achieved using a float control that would only allow council mains water into the tank when the rain water level dropped below 30% full.

The building is fitted with an industrial kitchen to provide high level catering to all tenants. The kitchen drainage system is piped to a stainless steel grease separator and is fitted with non-return valves to ensure no soil contamination into the system.

The concept of the tree motif continues into the building and informed the interior design. Tree patterns in various materials were added to the lobbies and ablutions to give an illusion of space

Landscaping

The main Entrance landscaping is designed to create a layered feature, creating the effect of a budding rose from a bird's eye view. Each planter is set out to individually constructed curves. A combination of steelwork, bondeck slabs and concrete walls were used to build up the various layers.

The objective was to build architectural off shutter concrete to all exposed upstands which was achieved despite the incredibly complicated design (in excess of 1,000 setting out points over 4 layers covering 5m height differential).

The main water feature at the main entrance further enhances the attractive entrance through the flow of water from the ground floor level to the landscaping deck. A water feature was constructed on the south of ground floor level to convey the natural design of the indoor planter which can be seen while moving down the escalator.

Conclusion

Sandton has been named the financial and premier business centre of Johannesburg as well as the financial hub of Africa. This prestigious development promises to not only enhance the brand awareness of its tenant mix but also to secure a prominent corporate presence in Africa's most exclusive business node.