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PROJECT FEATURE

NOVARTIS HEAD OFFICE

NOVARTIS HEAD OFFICE
Waterfall City, Gauteng

DEVELOPERS
Atterbury Property Developments

LAND OWNER
Attacq

PRINCIPAL AGENT / ARCHITECTS
Aevitas Group; Empowered Architects

QUANTITY SURVEYORS
Pentad Quantity Surveyors

CIVIL & STRUCTURAL ENGINEERS
DG Consulting Engineers

MECHANICAL ENGINEERS
RPP Consulting Engineers

ELECTRICAL ENGINEERS
Plantech Associates

WET SERVICES
Wat-Sol Design Technology

FIRE CONSULTANTS
Specialised Fire Technology

GREEN BUILDING CONSULTANTS
Aurecon South Africa

LANDSCAPE ARCHITECTS
Uys & White Landscape Architects

SAFETY CONSULTANTS
Cairnmead Industrial Consultants

MAIN CONTRACTOR
Group Five Building

TEXT / PHOTOGRAPHY
Supplied by Aevitas Group

Waterfall City is a new city development which is conveniently located between Sandton and Pretoria with easy access - via Allandale Road - to the N1 highway. It is the largest urban concept development in South Africa and brings all the advantages of being able to plan a new city from scratch. With 800,000m^2 of development rights in the CBD alone it will be a truly integrated mixed-use development that focuses on best-practice Urban Design Principles to create a pleasant and sustainable live/work environment. Novartis was one of the first major corporates to occupy an entire building in the CBD for their new head office.

Their site is positioned within the new Waterfall City CBD with very good exposure to Allandale Road and easy access from the main ring road of the City. The site itself is very narrow on the eastern side, widening out towards the west. There is also a considerable slope across the site with almost a 6m level difference from east to west.

Brief

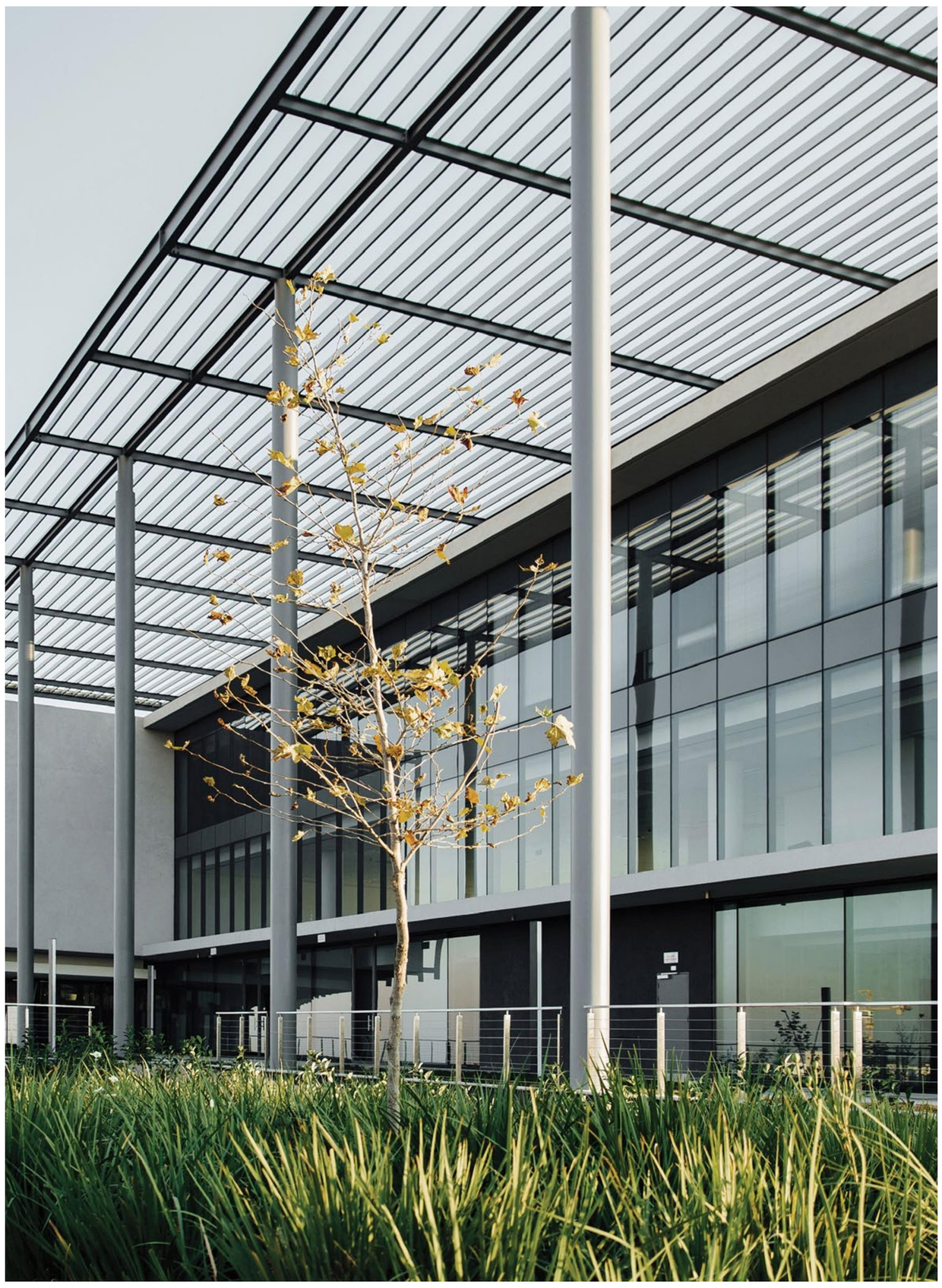
The brief was to create a contemporary, P-grade building to house a new head office for Novartis. The architecture needed to be in line with the quality of buildings that Novartis was occupying internationally while creating a strong local identity for the company. The planning needed to be flexible to accommodate growth and movement for various business units and subsidiaries within Novartis. It was also critical that the building created a healthy environment for its staff and that it encouraged interaction and communication between staff.

At the same time the building had to set a bench mark for future buildings within Waterfall City. It was essential that the building demonstrated best practice in responsible Urban Design and Environmental Sustainability.

Concept & Planning

The basic concept was to create a building that took direction from and accentuated the physical attributes of the site. There were two major attributes which were immediately

NORTH EAST ELEVATION



The sweeping curve of the southern boundary was used to create a feature that contrasted with what was viewed as an otherwise rectilinear building

prominent. Firstly the significant slope across the site. And secondly the sweeping curve of the southern boundary as it followed the street edge.

The Architects aimed to use the steeply sloping site to create the impression of a building that emerged from the ground - rooted on the high side and floating on the low side. Of course, a floating building also needs to connect to the street if it is going to respond to its context and integrate itself into the City. In the end, this challenge turned into one of the great opportunities and attributes of the building, which was a grand staircase that linked an elevated ground-floor platform with a falling site. The staircase not only merged the building with its surroundings but also ensured a healthy response to the street by blurring the lines between private and public space.

By placing the building on a podium it also resulted in a powerful presence for the building which further reinforced the brief to create a strong identity for the tenant.

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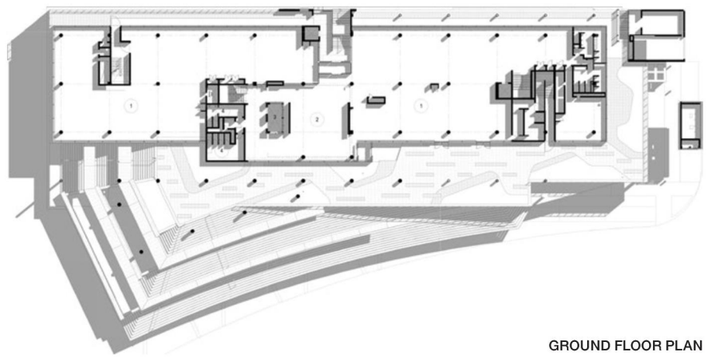
On the northern perimeter, the building follows the straight boundary line resulting in a wide strip of office space that is very efficient and flexible. This space is nearly 20m wide and makes for ideal open plan office space without compromising natural light. Peeling away from the northern wing of the building is a sweeping curve that follows the southern boundary and street edge. This curve culminates in a floating feature glass-and-aluminium 'box' that hovers above the grand staircase.

Joining the two wings at the heart of the building is a triple-volume atrium that is flooded with natural light and serves as the central vertical circulation and service core of the building. The atrium creates a visual connection between all levels and is a great meeting place where staff can interact. Two panoramic glass elevators form one of the main features of the atrium. They are framed with aluminium slats and feature LED lights that form a portal around the open walkways that connect the building on higher levels.

In front of the open walkways are simple and elegant glass balustrades. Behind the walkways is a feature timber wall that carries through all the floors and forms a tree pattern that makes reference to the building's local context.

KEY TO PLANS
1 Open Plan Office
2 Triple Volume
3 Lifts
4 Restrooms



GROUND FLOOR PLAN

ABOUT AEVITAS GROUP
Aevitas is a young commercial architecture practice with a strong focus on innovative design.They aim to continually challenge accepted norms in their goal to consistently deliver unique buildings of the highest quality.
They recognise that their ultimate responsibility is to create buildings that are bespoke, viable and growing investments for their clients.
Aevitas are used to working with complex briefs which require an innovative and sophisticated response to site, constructability and budgetary constraints. They do this with a focus on service and collaboration and an uncompromising commitment to quality.

237 basement parking bays are located below the building podium and are completely concealed from the city-side of the building. They are connected by shallow-sloping parking decks to ensure maximum efficiency in what is quite a narrow site. 71 visitor's parking bays are provided on-grade along the northern servitude.

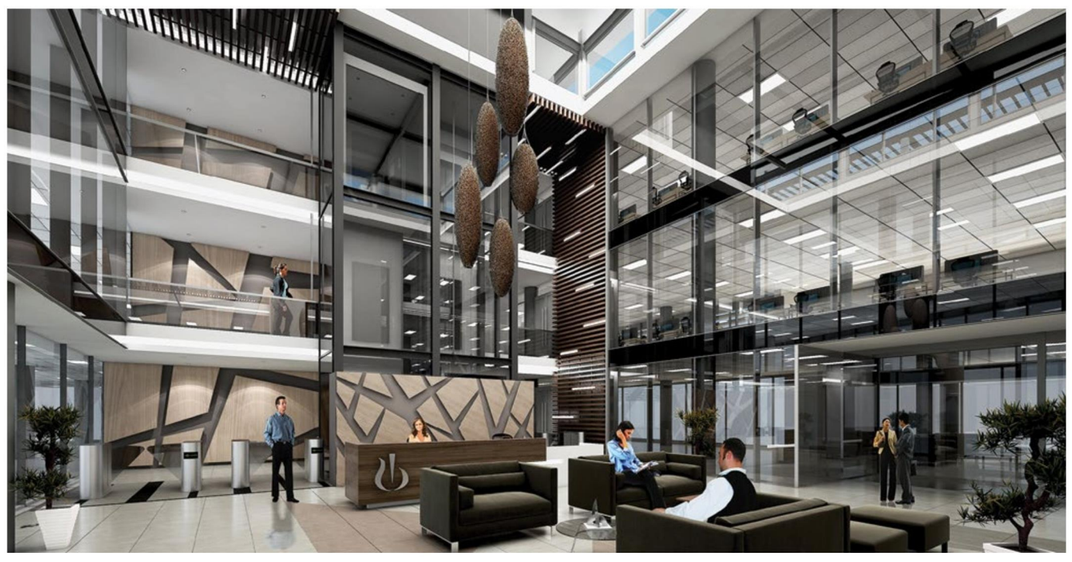
A Building Without Fences

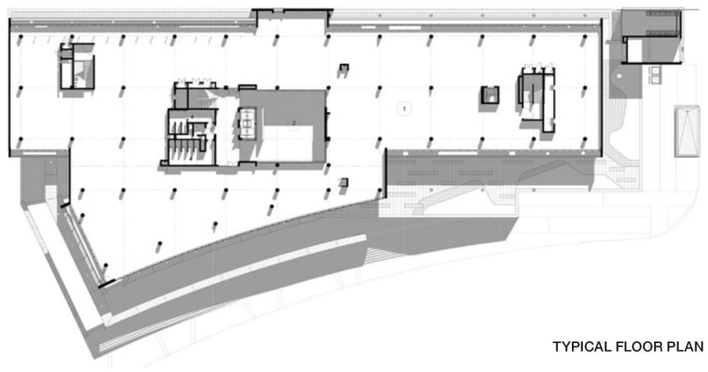
In responding to the building's context a decision was made very early on that the building was not to have any fences. The Architects were quite clear that in order to truly integrate the building into the fabric of the city they would not only have to ensure that pedestrian access was easy and convenient but also that the building created a welcoming impression.

Pedestrians can enter the building from three sides. On the southern edge which faces the future city and soon-to-be-completed Mall of Africa, Novartis employees will be able to use the grand staircase to walk to and from the Mall, bus stop and City. On the eastern edge they will be able to walk to and from their shaded outdoor terrace which spills out from their canteen. On the northern edge they will be able to walk to and from their dedicated on-grade visitors parking.

Materials

The majority of the building employs a very simple and contemporary material palette. Concrete, glass and steel is softened by aluminium louvres and feature timber panelling.





TYPICAL FLOOR PLAN

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Challenges

Technical Services Area: One of the tenant's subsidiaries, that works with large and highly specialised medical equipment, required a clean and secure way of receiving, storing and repairing their equipment. The challenge from a planning and architectural perspective was to address these requirements without compromising the design of the building. Ways of making the delivery vehicles completely secure and almost invisible were investigated, while ensuring that the route from the loading area to their Technical Services Area was also secure and invisible. In the end a solution of integrating the loading area into the design of the guard house and hoisting their equipment directly into the basement below was decided upon.

Green Building

The new Novartis Head Office is the first building in Waterfall City to be registered for a Leadership in Energy and Environmental Design (LEED) Silver rating. LEED is a U.S. Green Building Council rating system that focuses on the efficient use of energy and water, selection of green material and the establishment and maintenance of high quality levels of indoor environments.

HVAC

With HVAC being one of the largest single consumers of energy in a building, their mechanical engineers spent a great deal of time designing a highly efficient and effective system. There is a very sophisticated, multi-functional central air-cooled chiller that is positioned on the roof of the building. This chiller can produce ice, chilled and hot water and can recover heat.

Adjacent to the chiller are a series of ice storage tanks. At night, when the system is not running at its peak (and when the outside air temperature is cool) the plant produces and stores ice that is then used to reduce the load on the system during the day. Together with this, the reticulation on each floor is designed on the principle of perimeter cooling/heating which forms an air curtain and cools/heats the air immediately adjacent to the façades where most of the buildings thermal heat gain/loss is experienced.

Solar Energy

294 Photovoltaic Panels were installed on 700m^2 of the roof. They are expected to produce 147,000KWh of energy per year or roughly 12% of building's total energy consumption.

Insulation

Of course, one of the most effective ways to manage a building's energy consumption is to ensure that it is properly insulated. Energy models were run right at the beginning of the project's design phase. This was a very effective tool in understanding the affect of the local climate on different areas of the building.

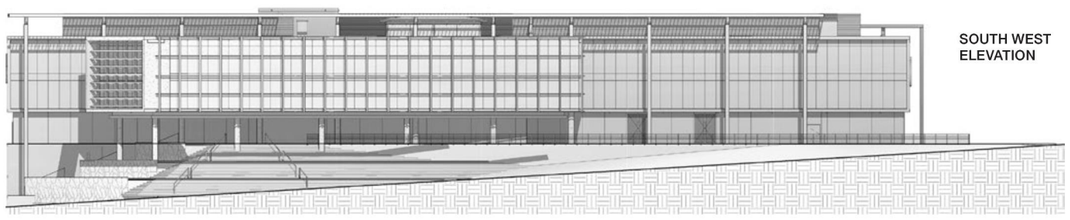
Double-glazing together with air-tightness tests were employed to ensure that we designed the building relative to its specific micro-climate. The end result was not only a drastically reduced load on the building's systems but also vastly improved comfort levels for the building's end-user.

Water Consumption

Reducing water consumption was also critical in ensuring the overall efficiency of the building. The plumbing system is designed with low-flow fixtures and fittings which manage the volumes of water consumed by the building. This is supplemented with a rainwater harvesting system. Rainwater is collected from the roof of the building via a Geberit Pluvia System and is stored in 5 x 5,000l JoJo tanks in the basement.

Conclusion

The building was delivered in just 13 calendar months largely thanks to a very effective and collaborative working relationship between Client, Professional Team and Contractor. The end product was a highly sophisticated building that delivered on the requirements of the brief while remaining uncompromising on quality.



SOUTH WEST ELEVATION