

New MDA office awarded Net Zero Carbon pilot certification

Designed by Activate Architecture, with Solid Green Consulting as sustainability consultants, the new MDA Attorneys office in Houghton, Johannesburg, is one of the first buildings in South Africa to receive a Net Zero Carbon pilot certification.



Images by Jesse Harman for Solid Green

As a growing practice of construction and technology law specialists, MDA needed to expand its physical footprint and acquired a prominent site on the corner of West and Riviera in Houghton. The existing building was an old home-office conversion that had been unceremoniously gutted and altered over the years. Green principles were a key consideration from the outset, and the opportunity to pursue the Net Zero Carbon certification, together with additional resource-efficient features, became apparent as the design process unfolded.

Respect for the natural environment

Vaughan Hattingh, director at MDA, played an active role in the project's design and construction and commended the professional team. "The philosophy and design of MDA's new office centres around a respect for the natural environment and a clear understanding of our business needs. The project has surpassed our expectations both in terms of its execution and net zero certification, and firmly positions us as a thought leader in our sector, in terms of sustainability."

Activate's approach was to re-orientate the building to allow a view and frontage over the M1 highway, and to add a floor to the building to bring the gross floor area up to 912m². "The new addition is a steel structure hovering over the old single storey portion of the project," explains Michael Magner, director at Activate. "This design allowed us to create a large open-plan space without adding loads to the structure below, while providing an eye-catching new image for the building. It also enabled a fairly time- and cost-efficient construction process."

Vivien Yun, project architect, adds, "The office boasts various spaces to work privately and collaboratively, and to interact socially. The intention was to enhance the essence of the 100-year old house while adding a new, modern intervention to reflect MDA as a forward-thinking organisation."



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Designing for net zero

Chilufya Lombe, director at Solid Green, explains that when designing a building for net zero, it is crucially important that passive design and energy efficiency features are incorporated before renewable energy systems are even considered. He says, “Due to this design approach, the MDA building is three times more efficient than a standard office building in South Africa. The City of Johannesburg is a signatory to the Net Zero Carbon Buildings Declaration and, as such, is aiming for all new buildings to be net zero by 2030. The MDA building has demonstrated that, with foresight and commitment, it is indeed possible to achieve net zero.”

Energy efficiency and generation were the underlying principles that will result in the building producing more energy than the base building consumes. “The office areas are designed to be naturally lit for a significant portion of the year thereby reducing reliance on electrical lighting, and high-performance double glazing has been used for all curtain walls,” Lombe says. “The passive design principles for this building were optimised so that even though the building has an air conditioning system, it only has to be used on really hot days. Staff can make use of openable windows for fresh air and comfort.

“Efficient LED lighting is provided throughout most of the building, and the lighting system also features occupancy lighting controls to minimise consumption. And, thanks to the client’s vision, an extensive photovoltaic (PV) system was installed on the roof above the new floor, completely offsetting the building’s electrical needs.”



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Water, energy, waste efficiency

To further reduce dependency on natural resources, the building was fitted with a rainwater harvesting system which will be used to offset potable water use in the tenancy. Water-efficient sanitary fittings were installed throughout the building, and the site is xeriscaped to reduce the need for irrigation.

From an operational perspective, submetering and monitoring systems for water and energy facilitate ongoing management of the use of these resources; while a waste recycling storage area was provided to encourage the recycling of resources used within the building in order to reduce waste to landfill.

In order to encourage users to adopt alternative means of transportation, the building contains cyclist facilities for both occupants and visitors. Chosen for its central location, the site is within 600m walking distance of bus and taxi services and close to several local amenities such as gyms, restaurants and shops.

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