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# SETTING A NEW

The Waterfall Public Transport Holding Facility, developed to meet the need for  
project to achieve a 5-Star G





# BENCHMARK

a taxi holding facility in the Waterfall area in Gauteng, South Africa, is the first Green Star SA PEB v1 rating.



**A**s part of the Waterfall development, Attacq was required by the local government to build a public transport holding facility to provide a base for the various modes of public transport operating in the area. Located on the east side of the N1, adjacent to the quarry on Waterfall Farm, the development consists of offices, a canteen area, an ablution area, a refuse area and a transport facility parking area. Solid Green was the green building consultant on the project.

Sean Pillan of Empowered Spaces Architects says that different zones were designed to accommodate the different functions required, and each building was oriented to create visual security around a central courtyard which functions as a rest and meeting area for drivers. Four planters on the edge of the courtyard provide partially shaded seating and act as a buffer between the exit road and the courtyard. These planters attempt to soften the hard edges around the facility, and have built-in USB ports for drivers to charge their cell phones. This rest area opens up to the south side of the site and offers views overlooking Johannesburg.

“We were asked by the client to design a facility for taxi drivers to use during the day whilst waiting to get sent out on their specific routes. The client wanted to do something unique and interesting for the project and not make it a standard, boring facility. They asked for the facility to be a 5 star green rated building and wanted it to fit in with the surrounding context as much as possible,” explains Pillan.

Based on a courtyard typology, Empowered Spaces Architects allowed the site and building envelope to almost determine the overall design. “We looked at all five elevations to the project and designed around each street elevation, providing an interesting view for the passer by and approach for the taxi drivers,” notes Pillan. “We looked at the vacant site adjacent the facility and accommodated a back of house (BOH) area for the cooking staff to provide some privacy later on when a project gets built on the site.” The courtyard typology allows the edges of the building to form a relationship with the street and surrounding context. The inverse would occur for the taxi drivers where they would form a relationship with the spaces and buildings from the inner courtyard. It would also become a more private area for the Taxi Drivers slightly hidden from street view. The buildings bullnose edges are an attempt to soften the hard robust materials used in the facility. This also allowed the architects to scale the buildings accordingly.

The complex’s zones include a canteen building that acts as a barrier to the adjacent site, with six micro-shops facing onto the courtyard that provide opportunities for entrepreneurial women to sell food to the off-duty drivers. A site manager’s office overlooks the courtyard and its activity during the day, while provision for additional offices has been made to allow for future growth of the facility.

A dedicated refuse area includes a sorting facility for street recyclers to sort through refuse materials in a secure area, out of sight of the street.



[Click here to find out more about the different zones across the site](#)

This area is also provided with posters to encourage and educate users on what materials can be reused and recycled.

“The most notable feature of the design would undoubtedly be the planters,” says Pillan. “They are the first elements the drivers notice before entering the courtyard. Secondly would be the canteen canopy roof.” Large overhangs on the building blur the distinction between interior and exterior spaces. Hardscape surfaces and roofing material with qualifying Solar Reflectance Index (SRI) values were chosen to minimise the urban heat island effect; and robust materials such as sheeting, steel and face brick were chosen for easy maintenance. Clearvu fencing has been used on the ablution block and canteen for security as well as for maximum cross ventilation and natural light.

Because the client requested the facility to have a 5 star green rating, the environment played an important role in the overall design and materiality of the project. “We started with the site and assessed the slope. This allowed us to position the facility (building) and parking accordingly to allow for a natural storm water runoff. In the initial conceptual design, we looked at the orientation of the spaces required by the client and decided to separate each function. By doing this we were able to maximize the amount of natural lighting into each space which would reduce the amount of artificial lighting need,” says Pillan. “The smaller buildings also allowed us to eliminate the need for mechanical ventilation by allowing for cross ventilation through the space. Because solar was going to be the only source of power for the project, these aspects are important to think about in order to reduce the power consumption of the site.” By also separating the buildings and orientating them in a courtyard typology, it allowed airflow through the space, natural storm water run-off, visual security overlooking the entire site and a private space for the taxi drivers to gather in the centre.

The building is completely off grid, with a solar PV installation located on top of the ablution block to provide power for the offices, canteen and refuse area. Solid Green’s Annelidé Sherratt reveals that this installation is capable of producing 6177kWh of electricity, resulting in a net positive building. The horizontal zoning of the building eliminates the need for vertical circulation and water heating facilities, which also saves energy.

All sustainable building features have been incorporated in such a way to educate building occupants on how the sustainability initiatives implemented in the building work, and the associated environmental benefits of these initiatives. Water efficient sanitary fittings have been specified, and water and energy consumption results available from energy and water sub-meters are displayed on a dedicated screen for public viewing.

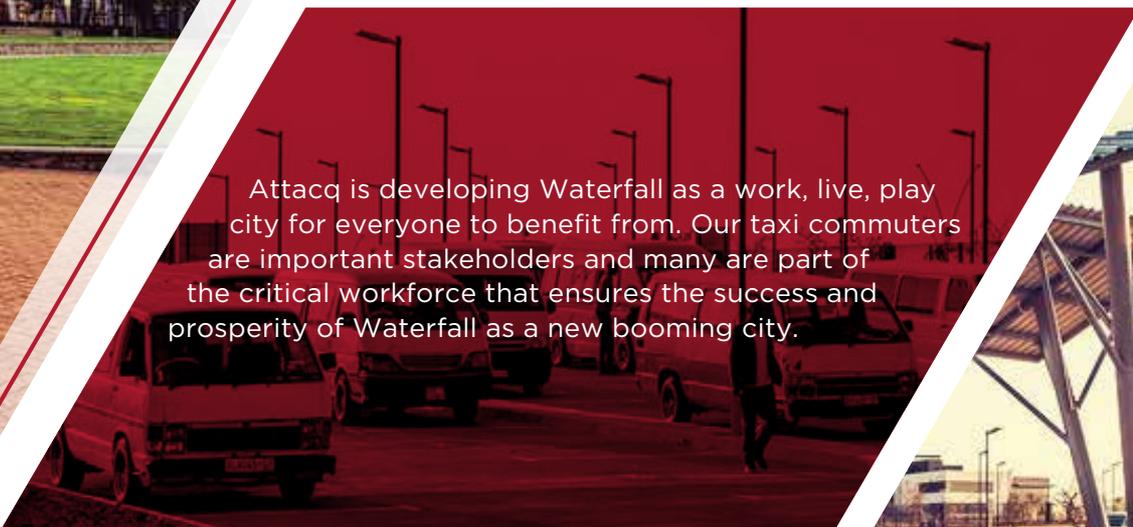
In addition, a Building Users’ Guide was developed to inform visitors and staff working in the building of relevant building operations that influence them and on which they have an effect; to provide information on management systems that optimise the building’s environmental performance; and to ensure that all future alterations, additions and programme changes adhere to the intent of the Guide.

## WELCOMING TAXI COMMUTERS TO WATERFALL



Commuting is often a time-consuming journey and Attacq now welcomes commuters to Waterfall, with a state-of-the-art taxi holding facility, to make the arrival at and departure from Waterfall a more pleasant commute.

The Waterfall taxi holding facility follows the same high sustainable environmental standards adopted for all new developments in Waterfall. Solar PV installations power the convenient office, canteen and ablution facilities. Easy traffic flow and sensible urban design ensures that using the facility is a positive experience for commuters and taxi drivers.



Attacq is developing Waterfall as a work, live, play city for everyone to benefit from. Our taxi commuters are important stakeholders and many are part of the critical workforce that ensures the success and prosperity of Waterfall as a new booming city.



## DEVELOP

