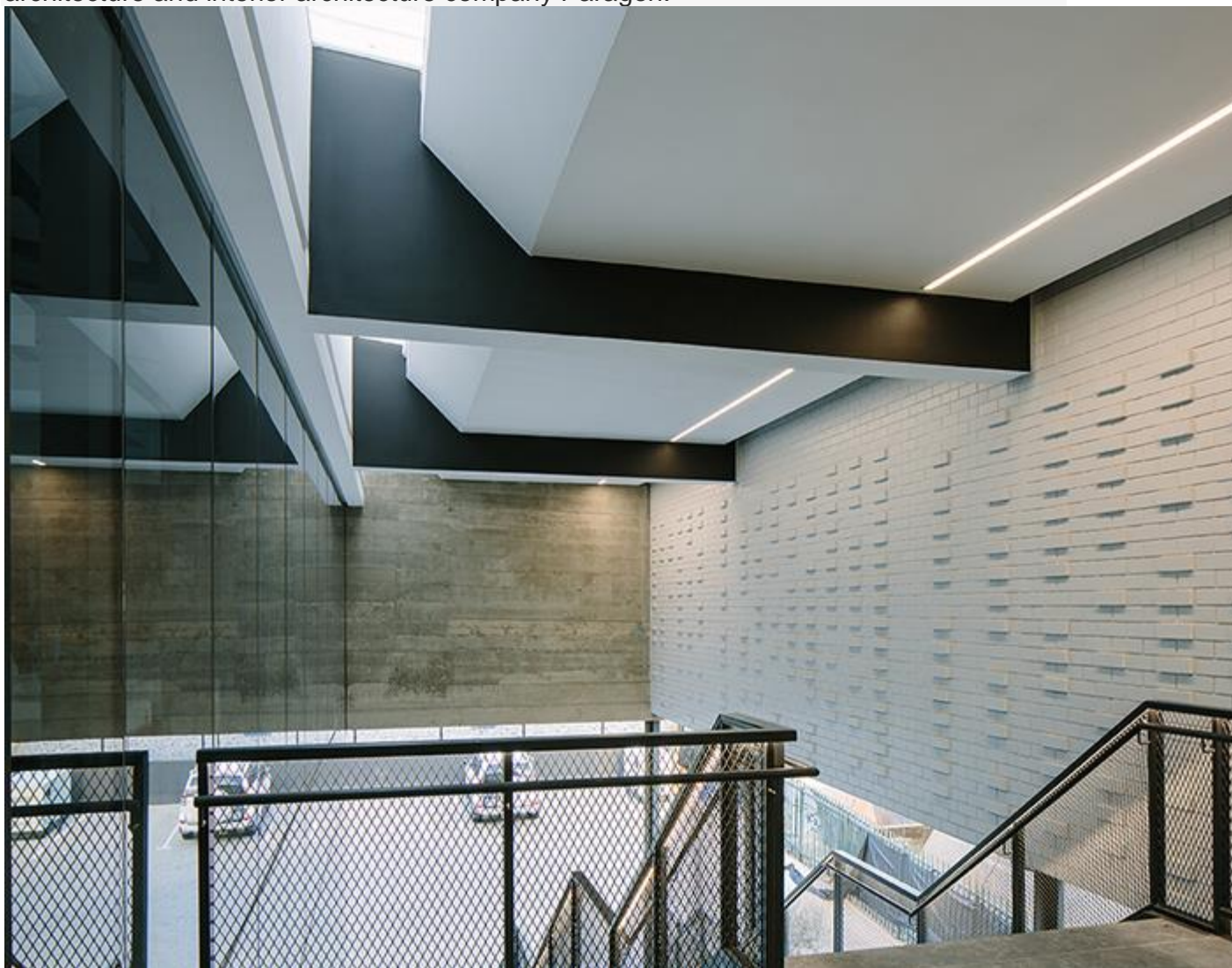


## Lighting concept complements architectural language in sustainable renovation

In an age of sustainable or responsible architecture, the rehabilitation of existing buildings is often the 'greenest' solution. An example of this approach was the 37 Commerce Crescent renovation project in Kramerville, Johannesburg, undertaken by architecture and interior architecture company Paragon.



The project was the rehabilitation of an existing industrial building into a retail and showroom development. "The decision by the client to recycle the building had merit, but did complicate the project," Paragon Architect Kim Newell explains. The original building was a two-storey warehouse with a steel roof.

During demolition, the steel roof structure was disassembled, and an additional floor added to increase the Gross Lettable Area (GLA). The roof structure was then re-installed. The result is a multi-tenanted retail space with the upper floors containing larger tenants while the lower ground level is divided up into spaces for smaller tenants. The building layout was designed so the floor plates could be divided to accommodate at least two tenants per floor on the upper ground and first floors. Currently, the upper ground floor is let to a single tenant, but provision has been made for services and

smoke-extraction systems to accommodate two tenants on this floor should this be required in the future. The larger tenant spaces have balconies for outdoor functions. On the top floor the balconies provide open-air spaces for tenant functions and exhibitions. The upper ground floor balcony also provides a secluded outdoor retreat in an open-air setting. Newell points out that the architectural design drew inspiration from its industrial setting. Concrete was used for the structural expansion and offshutter concrete used as a textured façade material.

37 Commerce Crescent is the second building to be built in the precinct. Off shutter concrete was used in the design of its predecessor, the adjoining Casarredo building, and the material will be re-used throughout the precinct to continue the aesthetic. Once complete, customers will have the opportunity to visit a variety of tenants in a pedestrian-friendly precinct.

The use of simple, yet powerful, volumetric forms contributed much to the appeal of the building. The building's materials drew inspiration from its industrial setting; its simplistic envelope and the respectful approach to materiality set up a new language for the developing precinct.

The rough off-shutter concrete walls of the street façades are offset against large, flush-glazed windows. Concrete allowed for extensive uninterrupted spans and large expanses of glazing, which created generous display windows facing the street, ideal for the showroom function.

"We worked within a tight budget and a short eight-month construction period, but managed to transform the building. The off-shutter concrete contributes to the play of light on the facades, whether sunlight or LED lighting at night. Internally large, airy spaces have been created that provide for spacious showrooms," Newell elaborates. The lighting design strategy for the project was to come up with a lighting concept that tied in with the architectural language of the building, says Newell, and as such, linear LED strip lights were used in various ways to pick up on the architectural form, for example, strip lights concealed in the entrance stair handrail illuminate the expanded mesh balustrade at night and add additional indirect illumination to the spaces. "We worked within budget and used energy efficient light fittings. External uplighters illuminate the building at night which allows for a play of shadow on the rough concrete facades.

Natural light was incorporated wherever possible," she notes. All the tenant spaces have large shopfronts and strip windows for natural light, while an opaque skylight above the main entrance stair allows natural light to filter into the open air foyer from above.

"Our focus was on the common areas of the building. The individual tenants were responsible for lighting their own spaces," Newell says. "Our lighting supplier tested to ensure the required lux levels were achieved and battery back-ups have been provided on lights along escape routes to ensure that in the event of an emergency these routes remain illuminated."

Newell believes there is a direct relationship between good lighting and how a space is experienced, and that natural light positively affects user experience. "Naturally lit internal spaces enhance the user experience of a building and reduce the amount of interior lighting required for retail spaces during the day. Natural light increases the quality of space in the showrooms while the expanse of the shopfronts allows tenants to create large window displays."

### **The façade**

The detailing of the façades had economic and practical advantages. The use of face brick produced a façade structure and final finish in a single material. The brick façades were stained black to achieve the aesthetic intent while remaining maintenance free for the building's lifespan. The brickwork is punctuated by full height strip windows which afford views of the city to the south and allow natural light into the showroom spaces.

By using a traditional building material – the brick – in an unconventional way a new aesthetic is achieved. An abstract pattern, formed out of recessed bricks, which runs down the face of the building, gives the façade a tactile quality. This approach articulates the texture of the exterior and interior of the building. The façade, when experienced from the interior, echoes an inversion of the texture.

The textured brickwork is experienced internally from an industrial steel staircase in an open-air foyer lit with opaque polycarbonate skylights. The steel staircase, which provides access to the tenants on the first floor, references another traditional industrial material used in an unconventional way. Expanded metal infill panels were used for the balustrades, with LED strip lights in the handrails. The journey up the staircase allows the user to experience the textured brickwork up close.

Performance glazing was used to reduce the solar heat gain on the façades, and to reduce the energy consumption costs of heating and cooling the building. Insulation installed below the roof sheeting will reduce heat gain in summer and heat loss in winter. The concrete façades add thermal mass to the building. LED lighting was used throughout to reduce energy consumption even further.