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AECOM in Australia and New Zealand thrive on finding smarter and more efficient solutions to some of the world's most challenging infrastructure projects.

Our advisors, engineers, designers and planners work together as part of an integrated team that is committed to client success.

From our offices in over 100 countries, AECOM teams share and source knowledge, insights and experience globally to apply lessons learned locally.

We are known internationally for our creative, sustainable and holistic design approach which, from the outset, embraces low-carbon and economic operational performance.

Our professionals around the world strive to deliver visionary buildings that maximise naturally occurring energy and minimise waste. From creation to completion and beyond, we help clients reach the optimum potential of every project.

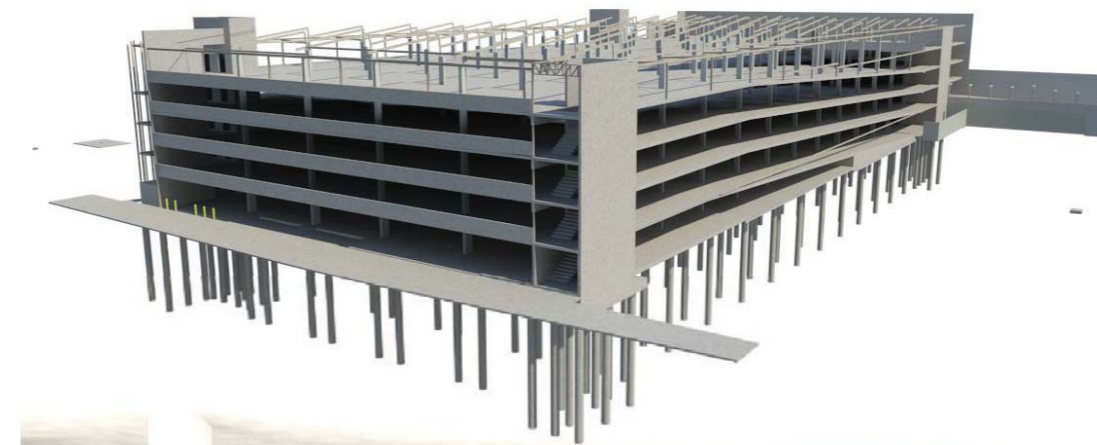
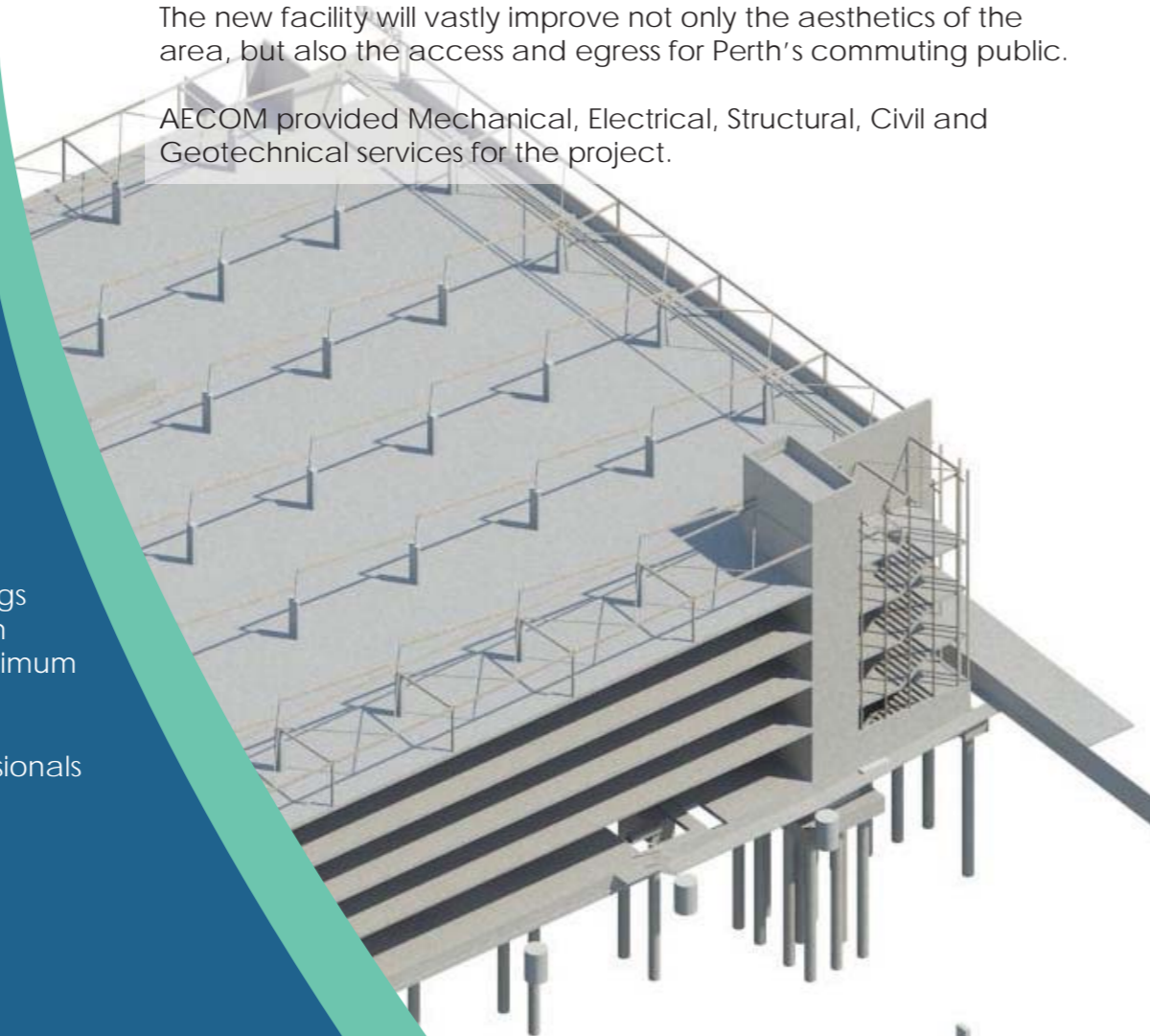
In Australia and New Zealand, AECOM has more than 3,800 professionals working in over 25 offices.

## efficient building engineering elders street carpark

Elders Street Car Park is located in Perth's CBD. The 4 storey redevelopment of the Car Park is viewed as an important step towards addressing the need for additional parking in Perth's Central Business District.

The new facility will vastly improve not only the aesthetics of the area, but also the access and egress for Perth's commuting public.

AECOM provided Mechanical, Electrical, Structural, Civil and Geotechnical services for the project.



The project consists of a new state-of-the-art parking facility, which replaces the existing 2 storey car park on the site.

The existing site conditions limit the design options for the redevelopment due to:

- maintain existing services running through the site
- minimising the environmental impact by not removing the existing foundation
- limit potential environmental impact of contaminated soils
- poor bearing capacity of existing site

The above constraints necessitated the use of a piled foundation, providing the additional benefit of minimising settlement to the new structure. The main car park structure comprised of insitu reinforced concrete, utilising a reinforced Tapered Band Beam System on grid spacing of 8m.

The Band Beam System facilitated in maximising the number of uninterrupted car bays, ensuring economy of structure and more importantly safe traffic flow.

The implementation of a Perforated Facade System provided a dual benefit:  
 - disguising the car park structure, allowing it to blend into its surrounding environment  
 - providing natural cross ventilation, removing the need for mechanical ventilation

The Perforated Facade System ensured the structure met the client requirements for a visually impressive green building.

A 3D design environment enables the team to analyse and interrogate their proposed solution accurately and communicate their solutions to the rest of the team clearly and effectively.

Revit structure and MEP were the primary applications used to document and design the project; in collaboration with the Architect and their Revit Architecture model.

The Key benefits gained by using Revit Structure and MEP

- Setting a new bench mark in intelligent documentation
- Coordination and Clash detection of Architectural, Structural, Electrical and Mechanical models
- Material quantities output
- Excellent communication tool
- Inspired the Design team creating a motivated and enthusiastic work environment
- Visualisation of the 3D Models allowed faster more efficient and effective resolution of site issues

