

CASE STUDY:

# Huapai Bridge, Auckland





...the project called for a handrail and balustrade solution that was structurally sound...

## BACKGROUND

Designed and engineered by Bluebarn Consulting and constructed by Oxcon.CLL, the new Huapai Bridge creates a connection between the Huapai Triangle Special Housing development and the Huapai Commercial area. A maximum total of 1200 dwellings applies across the precinct.

A critical condition for the housing development was to provide future residents with safe pedestrian access to the Huapai Commercial area, making Huapai Bridge a substantial part of the project.

## CHALLENGE

Footbridges over busy roads, railway lines or watercourses need safety barriers to prevent falls from height.

In New Zealand, the design of road safety barrier systems is governed by the New Zealand Transport Agency's Bridge Manual SP/M/022 (NZTA Bridge Manual), specifically B2.4 "Pedestrian barrier" and B2.5 "Cyclist and equestrian barriers". Structures shall also comply with the New Zealand Building Code, particularly the safe design and structural requirements of F4 "Safety from falling", D1 "Access routes" and B4 "Structure".

As safety and compliance were top priorities, the project called for a handrail and balustrade solution that was structurally sound and met all the necessary regulatory requirements. A local supplier was also preferred to not only support the local economy, but also ensure stock availability to meet tight construction deadlines.



## SOLUTION

Moddex NZ was the perfect partner for this project as their handrail and balustrade systems are long-lasting and fully compliant with industry and regulatory requirements. Every pre-designed modular configuration is the product of many years of research and development, and the company's outstanding end-to-end service helped reduce design and installation costs.

"We found the advantages of the Moddex system and their BIM capabilities very beneficial for our project and that was why we specified Moddex barriers within Huapai Bridge," explains Ioannis Prionas, who was the Director of Structural Engineering at Bluebarn Consulting during the project (now Director and CEO of Tekton Consulting). "The high durability demands and aesthetics of our projects were also satisfied by Moddex with their high end solutions."

The modularity of the Bikesafe® system was a key factor to the project's success. For their pre-engineered solution, Moddex had BIM files that had already been tested and approved by an engineer, saving the architect from having to manually draw a balustrade and obtain an engineer's sign-off and approval.

In total, 500m of Moddex Bikesafe® BS45 was supplied for the project, forming a cohesive barrier solution and smooth continuous top rails to help prevent or mitigate injury for both pedestrians and cyclists. The solution was galvanised to HDG500 for extra corrosion protection and delivered in powdercoated green to match the colour of the surrounding structure. Most importantly, Bikesafe® was specifically

designed to comply with the NZTA Bridge Manual, giving project stakeholders peace of mind.

"Moddex provided a full one-stop-shop solution – from design through to installation with continuous support throughout all stages of the project," elaborates Prionas. "Their modular proprietary system with site flexibility meant there were no additional costs during the construction, and the solution was designed and detailed to suit the exact project requirements."

Moddex was able to use the client's 3D pre-cast model as the basis for the barrier system's design, speeding up the design process to only a few days. This in turn sped up the casting process. Pre-cast baseplate fixing bolts and baseplates meant no drilling into the concrete on site, saving significantly on time during installation.

"Moddex were very professional, able to meet deadlines and budgets, and ensured there were no surprises during the process. We were very satisfied with their final product," says Prionas.

"Moddex provided a full one-stop-shop solution – from design through to installation..."

IOANNIS PRIONAS, DIRECTOR AND CEO OF  
TEKTON CONSULTING

