



# Materials and Asset Engineering

## Repair and strengthening

Specialised knowledge of materials performance, particularly concrete and steel, is key to the success of infrastructure projects.

Whether working with clients in rail, in mining and resources, in water, in highways, or even in ports, we use this knowledge to help them to achieve their desired outcome in terms of cost, programme, risk and quality.

Our worldwide experience covers a wide variety of asset types and construction materials.

Clients seek us out to help manage assets such as buildings, car parks, bridges, tunnels, water treatment works, desalination plants, industrial facilities, ports and harbours, coastal and river defences, and airport and highway pavements.

We deal with maintenance issues for concrete, metals, plastics, masonry, grout, coatings, ceramics and timber.



### Our services

Halcrow has experience of structures in a great variety of climatic conditions around the world looking at:

- investigation
- assessment
- repair and maintenance.

### ■ Investigation

We have experience of combining standard and non-standard approaches to investigating structures.



These include non-destructive techniques, such as corrosion potential and resistivity, as well as remote survey methods and load testing.

Assessment of structural and other service requirements together with risk analysis approaches can be used to allow survey work to be targeted on critical areas.

## ■ Assessment

Halcrow durability models for chloride and carbonation induced corrosion can be used with structural analysis to assess residual life.

Whole-life costing allows the nature and timing of any work to be optimised.

The findings of the assessment are typically provided in an optioneering report.

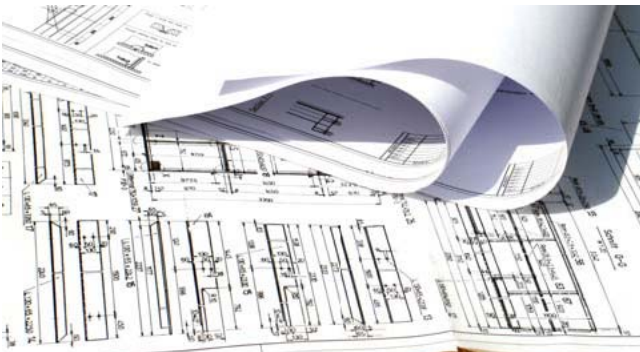


## ■ Repair and maintenance

Detailed design can be made for repair, strengthening and protection schemes including:

- traditional concrete repairs
- sprayed concrete
- strengthening
- protective coatings
- cathodic protection systems
- chloride extraction
- re-alkalisation.

Halcrow has technology partners to provide on-site FRP strengthening options, such as plate bonding and fibre-wrapping.



Contract documents (drawings, specification and bills of quantities) can be prepared and the works supervised.

Halcrow is able to provide on-going monitoring services in the form of Life-Care Plans.

## Why Halcrow?

We have been working for clients throughout Australia, New Zealand and the Asia-Pacific region since 1993. We have offices in Sydney, Melbourne, Brisbane and Perth.

At Halcrow we pride ourselves on our strong local delivery capability and client focus. However, when you work with Halcrow you also draw upon our global skills, expertise and experience.

Our success has made us one of the world's leading consultancies, contributing global thinking and local knowledge to water, transportation and infrastructure development commissions in over 70 countries.

And because we are now part of global engineering and program management company CH2M HILL, we have an even wider range of services to offer our clients.



## Contact us

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