

## Don't forget the P in ACRA (for "Protection")

The name says it all. Or does it?

Arguably ACRA should be **ACRAPA** to remind us all that ACRA is not only about concrete *repair* but rather that the body is the "Australian Concrete Repair (*And Protection*) Association".

### Need for "P"

Most repair projects end with a protection brief. After all, unless the repair were the result of purely mechanical damage, it makes little sense to fix deterioration by corrosive agents and then fail to block further attack by those agents.

Even if it were purely mechanical damage on a protected structure, you would hardly leave the repair a weak link in an otherwise well-defended asset.

And no matter the destructive agent, if the repair is on a so-far-unprotected structure, you shouldn't pass up the opportunity to rectify that while scaffolding is up, crew on site, and access and safety protocols in place. Doing such value-added work enhances the worth of the structure. Or it saves having to pay more to rectify the shortcoming as a new project later on rather than as an add-on now.

Note too that a good many projects in fact involve protection alone. No repair. Just the realisation by the asset owner that life extension pays off.

### Protectors

Broadly, protection can be provided by

- Protective coatings
- Moisture barrier systems
- Coatings for the steel reo
- Electrochemical methods
- Impregnation of corrosion inhibitors
- Sacrificial anodes.

The last two are relatively new techniques which a future column will



ALL PROJECTS NEED PROTECTING

review. Some points on the rest follow here:

**Electrochemical methods** comprise cathodic prevention and cathodic protection, realkalisation and chloride extraction. They have an excellent track record both in existing structures, for repairing reinforced concrete attacked by chloride ions and carbonation, and in new structures, for boosting the corrosion resistance of the reo.

**Coatings for steel reo** include polymer-modified cementitious materials and products based on epoxy resins formulated to prevent anodic dissolution of steel.

**Moisture barriers** aim at ensuring the reo in particular is in a dry environment. The materials used are formulated to resist chemicals and wear, to seal and bridge cracks, and to have controlled water vapour permeability. They include conventional paints and special coatings such as a cement-based materials embodying microsilica to densify and to reduce permeability.

**Protective coatings** and sealers for buildings and civil structures include acrylics, copolymer emulsions of acrylic, silanes and siloxanes. They all have their place. But they are effective only given the quality of materials used and know-how in their choice and application.

### Useless unless...

These two quality "musts" are, of course, critical to all six categories of protection, and are precisely what you can expect from ACRA consultant, materials supply and contractor members.

Next issue: cases of protection.