



Asset Engineering

Fire Damage Assessment

Risk	Remaining life	Whole-life cost	Asset management	Maintenance optimisation	
Materials	Durability	Quality	Assessment	Repair	Cathodic protection

Assets

- Buildings
- Hotels; schools
- Shopping malls
- Basements
- Car parks
- Highways
- Bridges
- Tunnels
- Airports
- Pipelines
- Storage tanks
- Water treatment works
- Desal plants
- Power plants
- Ports, harbours
- Jetties
- Dry docks
- Oil refineries
- Chemical plants
- Historic structures

Materials

- Concrete
- Metals
- Plastics
- Masonry
- Timber
- Coatings
- Facades
- Flooring; roofing

Halcrow is a leader in the assessment of fire-damaged structures. Even after a severe fire, structures are often capable of being repaired and cleaned, rather than demolished. Our materials engineers routinely assess fire-damaged structures and specify well-informed repair solutions.



Halcrow's experienced fire safety practitioners provide bespoke, cost effective designs for new build and refurbishment, using leading-edge computational tools. Halcrow employs 60 fire safety engineers and materials technologists on fire engineering commissions worldwide.

Assessment

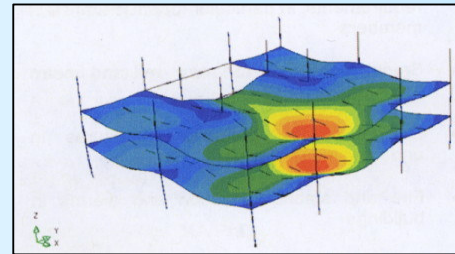
Halcrow provides damage assessment of affected structural members on-site using visual inspection and non-destructive testing. Where necessary, samples may be removed for strength and hardness testing or microscopical examination, which allows definitive determination of the depth and consequences of excessive heat. The combined findings are used to prepare key diagrams and schedules detailing the damage.

Halcrow engineers contributed to the recently published Concrete Society Technical Report 68: Assessment, Design and Repair of Fire-damaged Concrete Structures.



Design

Halcrow designs bespoke repairs for fire-damaged structures in accordance with relevant codes of practice, to provide the required strength, fire resistance, durability, form and appearance. Tools available include finite element calculations to model the structural deformations due to fire-induced heating, and fluid dynamics software for calculating smoke spread.



Repair

Many different repair methods exist for concrete and steel structures. Halcrow's materials specialists select practical, durable and cost effective repair techniques to the latest standards. Halcrow can prepare detailed designs, specifications, bills of quantities, cost estimations, tender documentation and quality management systems and then supervise the repair and cleaning works.



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