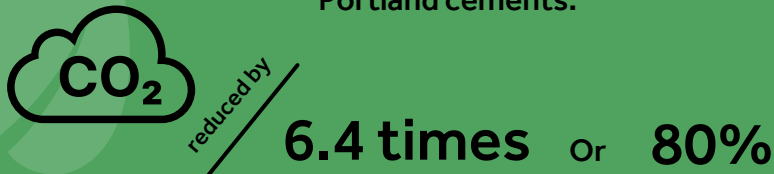


What is LoCem®?

LoCem® is an alkali-activated cementitious powder formulation (AACM), manufactured with industrial waste by-products with no heat which in turn yields a binder that has an ultra-low CO₂e.

LoCem® can reduce CO₂e over 6x, compared to Portland cements.



Over the years we have developed a range of design mixes to provide a range of restoration and build products engineered to extend the whole life of structures through corrosion protection (**impressed current and galvanic protection**), fire, environmental impact, and chemical attack. LoCem® can be applied by hand-placement, gun, spray, form & pour, precast.

These vertically integrate with our embeddable sensors and open network control electronics (Achilles Suite of Structural Healthcare Systems) to provide **full control, real-time performance data and service life tracking** on our reporting server, AiMS.

LoCem® can be used on structures such as bridges, parking structures, bridges, heritage buildings and tunnels **to provide sustainable resilience to their environment and managed for their whole life.**

Resilience

- Fire to 1200C for 5 hours with no change in form
- Compressive strengths to 60MPa (8,700psi)
- Corrosion control for over 100 years to chloride and carbonation attack
- Chemical resistance to sulfates, potash and acids
- Environmental resistance to ASR, freeze-thaw effects



Up to 90% reduction in cost to restore structures (depending on scope)



Environmental Social Governance compliant



Control of health and safety



Cost certainty with fixed long-lasting components



Balance sheet certainty of assets



Data to prove performance and for due diligence in asset sale

LoCem® Case Studies

All projects save millions of tons of embodied carbon with our control systems strategy



90 Church St in NYC

Challenge	Preserve the stonework to 2 corners and protect the structural steel from corrosion
Traditional Approach	Strip off stonework, clean steel, re-coat in 3 layers, replace stonework
C-Probe strategy	Remove the bed joint between stones, retuck with +point® anode mortar, blend
Impact	Save 90% of restoration cost (\$350k vs \$3.5m) 3-month install compared to 12-18 month traditional repair Extend service life by 100 years, whereas revisit would be needed with traditional approach in 10-15 years.

Omni Centre Car Park, Edinburgh UK

Challenge	Preserve parking decks by repair, cathodic protection (2 decks), inhibitor treatment (2 decks)
Traditional Approach	Demolish and reconstruct parking decks with new steel and concrete
C-Probe strategy	Install +chase® anode mortar to deck slots, galvanic anodes to repair areas and monitoring, and control throughout with AchillesICP and AchillesIES
Impact	Save 90% of restoration cost (\$7million vs \$70million) if demolished 15 months vs impossible demolition strategy due to underground facility and electric tram on land Extend service life by 100 years for ICCP and 15+ years for other strategies



Developmental Fireproof Precast Segmental Tunnel Ring, Mullingar, Ireland



Challenge	Provide high fire resistance for future use in segmental tunnel constructions
Traditional Approach	Portland cement construction
C-Probe strategy	LoCem® low carbon AACM binder construction
Impact	84% reduction in CO2e Fire resistance to 2200F for min 5 hours without collapse vs 700F for 30mins to explosive failure Remove the need for additional fire resistant liners Cost neutral and carbon negative