REPAIR AND STRENGTHENING SPECIALISTS

SPECIALISED ENGINEERED SOLUTIONS FOR STRUCTURES

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Established in 1935, CCL has a long history in providing specialised engineered solutions for buildings and civil structures around the world. The company uses specialised techniques for the design and execution of new projects and for the maintenance, repair and strengthening of existing structures.

CCL prides itself on its focus on quality and innovation. Experience gained from projects undertaken across the globe allows CCL to develop solutions for clients which are specifically tailored to suit their requirements.

Through its presence on five continents and significant investment in research and development, CCL has the proven ability to deliver exceptional results.
CCL HISTORY

When CCL was first established, it originally supplied products for the electrical transmission and distribution industry. Diversification into the construction market came as a result of the development of a wedge-type connector which was universally adopted for use in prestressed concrete. At this point CCL’s progress as a leading supplier of prestressed concrete engineering solutions began in earnest. The prestressing of concrete by means of CCL’s proprietary systems of cables, allows full utilisation of the high compressive strength of this material to construct large span structures beyond the limits of conventional construction.

During the 1970s, CCL increased its range of services with the introduction of structural bearings and pre-tensioning materials and equipment. It was also at this time that the company carried out the first post-tensioning of slabs within buildings in the UK. This type of application was to become a significant part of the business, complemented by the post-tensioning of bridges and other civil structures.

Further diversification came in the form of repair and strengthening activities designed to maintain and rehabilitate structures, and preserve existing building stocks.

Recognising the importance of servicing markets at a local level, in the early 1980s CCL began its worldwide expansion. It established subsidiaries and partnerships in the United States, Africa, Australia, Europe, the Middle East, the Far East and the Gulf, completing many successful civil and building projects in these areas.

CCL has continued to develop, establishing a geotechnical business enhancing its offering to the precast market, to include total solutions for precast factory start-ups.

Today, CCL is an independently-owned, private company which continues to pursue policies of innovation and progress through ongoing research and development programmes.
**CCL VALUES AND PHILOSOPHY**

CCL is made up of a dynamic, culturally-diverse group of people, working in a variety of challenging roles around the world, who share the values of Professionalism, Respect, Integrity, Meritocracy and Agility, and adopt these across their professional lives.

The company’s philosophy is simple: to offer clients the best structural solution to suit their market and their project, in terms of design, supply and construction, whilst having due regard for sustainability.

**CCL MISSION**

CCL is here to extend the limits of construction techniques for enhancing the built environment.

The company works to improve the performance of construction, allowing its partners to design, build and maintain efficient and durable structures, more rapidly, and for the benefit of individuals and the community.

**CCL SUSTAINABILITY**

CCL is committed to the development of solutions that preserve the environment and promote the use of resource-efficient construction products and techniques. To this end, the company’s environmental performance and policies are continuously reviewed and updated.

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**CCL CORE VALUES**

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<tr>
<th>PROFESSIONALISM</th>
<th>Responsible and professional behaviour, combined with skill in both judgement and action.</th>
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<tr>
<td>RESPECT</td>
<td>Politeness and consideration towards customers, suppliers, shareholders, fellow employees and the community.</td>
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<tr>
<td>INTEGRITY</td>
<td>The demonstration of honesty and strong moral principles.</td>
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<tr>
<td>MERITOCRACY</td>
<td>A working environment which recognises and rewards ability.</td>
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<tr>
<td>AGILITY</td>
<td>The ability to think and act quickly in an intelligent manner.</td>
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CCL SERVICE
CCL offers assistance to help clients meet the requirements of their projects while respecting local and international technical codes and standards. The company is able to add value throughout projects in terms of inspection and evaluation, design, technical assistance, value engineering, supply of materials and equipment, and implementation. CCL has a reputation for delivering a responsive, flexible, cost-effective service and high-quality engineering solutions.
CCL QUALITY
In order to ensure unrivalled quality, supply and service, CCL has invested heavily in its research and development, engineering, manufacturing and operations.

CCL is an ISO-registered company that complies with BS EN ISO 9001. CCL companies are members of accredited quality associations which are committed to developing the practice of concrete repair and allied disciplines, as well as advancing education, technical training and health and safety issues within this specialist construction sector.

QUALITY IN SERVICE
CCL's repair and strengthening services are tailored to meet local and regional requirements. All subsidiaries comply with regulations relating to their markets, and hold relevant local and international certification. Highly-proficient engineering and construction teams enjoy many years of experience, much of it gained at an international level. Continually trained and mentored, they are able to react swiftly to any issues which may arise.

CCL Engineering and CCL Stressing, the company centres for structural and product design are both ISO certified and operate rigid quality management systems.

In its attempt to minimise environmental impact and promote best practice, CCL has achieved ISO 14001: 2004 Environmental Management System; BS OHSAS 18001 Occupational Health and Safety Management (UK) and GSAS Global Sustainability Assessment System (Qatar).

CCL RESEARCH AND DEVELOPMENT
CCL's R&D function carries out research activities on a systematic basis to uncover new engineering products, approaches and procedures, and to improve existing ones. Research relies on engineering studies and work experience to develop practical solutions and tackle the multifaceted challenges encountered in the repair and strengthening sector.

Professional development is an integral part of the company’s engineering philosophy. CCL engineers are members of international associations and regulatory bodies, and are actively involved in engineering committees for design and education purposes.

ENGINEERING SERVICES
CCL Engineering comprises teams of highly-talented, professional engineers and technicians who use their skills to provide specialised structural design services for the CCL group of companies, licensees, agents, distributors and clients across the globe. Their shared knowledge base reflects a wide experience gained through involvement in hundreds of varied projects.

Through ongoing education and training, CCL continues to set ever higher standards. The centralised engineering services provide a basis from which CCL is able to focus on design, ensure compliance with all relevant code requirements and promote sustainable repair and structural strengthening techniques. Engineers have access to the most recent software and publications to ensure they remain up to date with the latest technologies.

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CCL LOCATIONS
CCL subsidiaries and partners act as a collaborative network offering the company’s full range of products, services and expertise whilst maintaining the benefits of local independence.

CCL QATAR
In 2001 CCL began its operations in Qatar from its base in the United Arab Emirates (UAE). Involved in prestressing and its development throughout the region for many years, CCL was a major influence on the introduction of post-tensioning technology in buildings in Qatar. In 2005, as the Qatari market developed and demanded more high quality, more innovative and more complex structures, CCL Qatar was officially established as an independent local company, to provide a range of services and support, tailored specifically to that market.

In addition to its prestressing activities, CCL Qatar provides a comprehensive range of repair and strengthening services designed to rehabilitate and maintain structures. These include inspection and monitoring, hydrodemolition, concrete repair, corrosion prevention and structural strengthening.

With a large specialist design function, highly-skilled technicians and engineers based in Qatar, and a comprehensive fleet of specialised equipment, CCL Qatar is able to react promptly to any project requirements, and meet even the most urgent demands.

CCL Qatar has built its reputation on providing value engineering and professional technical support for clients. It works closely with consultants and contractors to design, supply and implement the most innovative, efficient and cost-effective solutions.

The company is a leading advocate of ‘green engineering’. It places great importance on the use of more environmentally-friendly systems and the employment of resource-efficient techniques, which can reduce material usage and lower CO₂ emissions.

Today, as a result of its technical expertise, quality of service and its commitment to the local market, The company is recognised as the leading specialised engineered solutions provider in the state of Qatar.

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Structures require surveillance and maintenance over their design life to protect their overall functionality. CCL provides a range of solutions for the repair and refurbishment of concrete and steel structures using the latest methods and technologies available.

Where damage or deterioration has occurred or when structural modifications are required, CCL uses sustainable, resource-efficient materials and techniques to maintain and rehabilitate existing structures, providing significant cost savings for clients, engineers and construction companies.

Specialist repair and strengthening services include:

- Inspection and surveying
- Hydrodemolition
- Concrete repair
- Specialist grouting
- Corrosion prevention
- Structural strengthening
- Protective systems and coatings
- Jacking, lifting and weighing
- Bearing inspection, design, supply, maintenance and replacement
- Structural monitoring
- Structural alterations
CCL SYSTEMS

CCL’s repair and strengthening business is complemented by a range of specialised solutions for slabs; post-tensioned concrete activities in the civil sector; total solutions for precast factory start-ups; and specialty geotechnical services.

**CCL SLAB SOLUTIONS**

CCL provides a range of slab solutions which help to overcome some of the restrictions faced by developers, architects, engineers and contractors. These include post-tensioned, lightweight voided and hybrid slabs to provide flexible layouts, reductions in the quantities of materials used, longer spans, and faster construction.

CCL’s slab on grade can reduce the costs of construction and ongoing maintenance by minimising the number of joints and coping with difficult soil conditions.

Surface jointless flooring systems provide the ultimate low-maintenance flooring solution and are tailored to meet the client’s exact needs and taste, delivering long-term savings and maximum visual impact.

**CCL POST-TENSIONING IN CIVIL STRUCTURES**

CCL’s post-tensioning systems are designed to meet the latest code requirements with an equal emphasis on efficiency, durability and speed of construction. Prestigious civil projects including bridges, oil platforms, sports stadia and nuclear power stations have used CCL systems and are a testimony of the company’s prominence in the post-tensioning field.
CCL SOLUTIONS FOR PRECAST

CCL pre-tensioning components are designed using the latest 3D parametric modelling and finite element analysis software to ensure total product integrity.

Its Spiroll production systems and a comprehensive range of supporting products and services including production accessories, prestressing equipment, design consultancy and training combine to deliver total solutions for precast factory start-ups.

CCL GEOTECHNICAL SERVICES

A range of geotechnical services includes piling and foundation support, retaining walls, slopes and ground improvements.

CCL provides geotechnical design, contracting and value engineering.

CCL STRUCTURAL BEARINGS

CCL Structural Bearings are designed to the highest standards and manufactured from high-specification materials. All bearings are designed individually, using the latest software, to optimise their cost and efficiency.

In addition to design and manufacture, CCL installs bearings, carries out remedial work and provides supervision of installation by the client.
PROJECT APPLICATIONS

As well as addressing the problems of structural damage and deterioration, CCL repair and strengthening techniques are used widely to facilitate modifications to existing structures arising from change of use, the need for additional capacity, design code changes or even site defects during construction.

STRUCTURAL STRENGTHENING USING CFRP AND STEEL

When change of use at a commercial development in Doha required the addition of an escalator and an elevator, CCL assessed the impact of the new loads on the existing floor slabs and provided the design to implement the necessary structural modifications using CFRP and structural steel.

CCL BEARINGS IMPROVE SRI LANKAN INFRASTRUCTURE

CCL was awarded the contract to supply elastomeric bearings on this ambitious project to build 600 permanent road bridges throughout rural Sri Lanka. In order to facilitate installation on such a large number of structures CCL worked to rationalise the number of different bearing designs across several bridge conditions.

SPECIALIST GROUTING ON COOLING TOWERS

Delamination of the secondary skin from the inner walls of cooling towers caused voids to form in the concrete that had been used to reinforce the original walls. CCL devised and tested a solution to fill the voids without causing damage to the existing structure.

CCL PT REPLACEMENT

CCL replaced unbonded post-tensioning cables which had been damaged during MEP work on a luxury residential complex in Dubai. This involved carefully removing the damaged cables, whilst leaving the plastic sheathing in place. New cables were then installed within the existing plastic sheathing, which remained embedded in the concrete.