

BULLETIN

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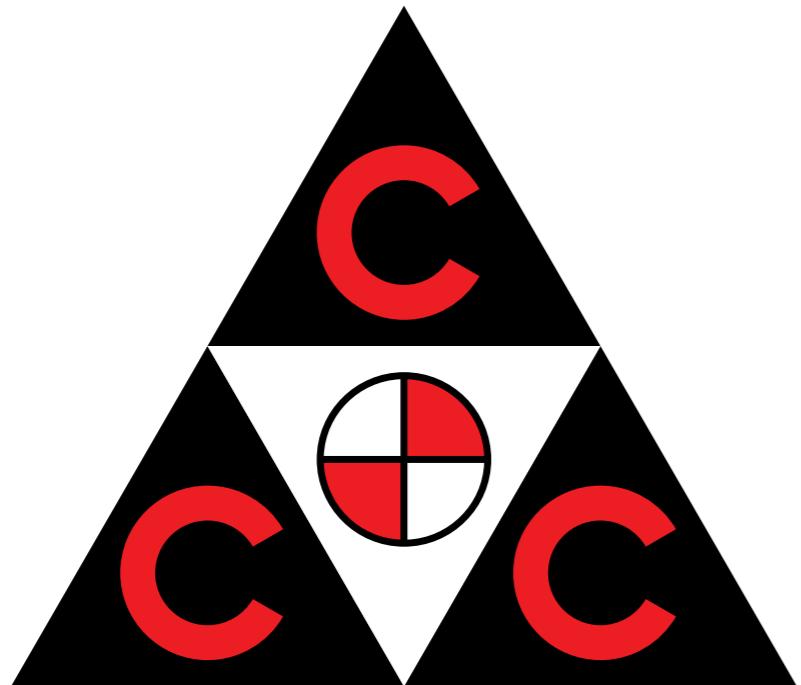


STARTUPS

BIM, Drones and 3D Printing in Construction

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FROM THE DESK OF ...



SAMER S. KHOURY
Chairman



2021 Major CCC Reset

CCC, like the majority of international firms, faces the challenge of a major reset this year, and while we are optimistic that we shall achieve good sales results this year, we cannot lose sight of the big picture of steering CCC to a different direction.

Here are the three prevailing trends:

1. Organization Reset

We are creating a new, lean and efficient organization with young leadership. At the same time, we are bringing back CCC's good elements into the organization. Capabilities, professionalism, respect of CCC's values and good personality should be the top criteria when it comes to new staff appointments.

2. Country Reset

We should focus our efforts on countries with the highest potential where CCC can bring added value and where we can have a clear competitive advantage against others as we can no longer afford to be present everywhere. We must be selective.

3. Industry Reset

As a result of COVID-19, all industries have been impacted. The clear winners are Healthcare, Logistics, Technologies, Artificial Intelligence and Green Industries. CCC needs to find a niche for ourselves in some of these fields.

I am confident that with our new leadership and our young and innovative staff coupled with the full support of the family owners, we shall succeed in creating a stronger and resilient CCC for the years to come.



RECENT AWARDS

We are pleased to announce that CCC was awarded 5 new projects in the North African Area. The projects are all high-quality buildings with a variety of Hotels, Residential Villas and Shopping Malls between Egypt and Tunisia.

**The Address Hotel and Luxury Villas Marrasi**

Award Date: April 2020
Client: Emaar Misr Developments S.A.E.
JV Partner: CCC/HAC
Location: North Coast, Egypt
BUA: Hotel 47,000 m², Villas 51,000 m²

Project Brief and Scope of Work

The project is part of Marassi's large development in Sidi Abdel Rahman, about 120km from Alexandria in Egypt. The Address Marassi Beach Resort and serviced apartments (H9) will be operated by Address Hotels and Resorts, located at the centre of the splendid constructed functional Golf Course.

**The Address Hotel & Serviced Apartments**

The scope of work compromises the construction and finishing of the H9 Hotel (guest rooms & apartment buildings) which includes 140 guest rooms and serviced apartments with associated facilities, on 5 levels with a total built-up area 47,000 m². The package also includes external works (landscape & infrastructure). Special restaurants, all-day dining, gym, SPA, pool bar terrace, residential lobby & hotel lobby are limited to core & shell including blockwork and are served by networks linking the different areas.

Village A Villas

The scope of work compromises the construction of 91 residential villas. The package includes the skeleton, MEP and finishing works for all building types. The building site includes earthworks, infrastructure, roads and landscape works including soft & hard landscape, grading fences & gates, public irrigation, signage & lighting.

**Cairo Festival City Mall Expansion**

Award Date: November 2020
Client: Al-Futtaim Commercial & Administrative Centres (AFCAC)
JV Partner: CCC/HAC
Location: New Cairo, Egypt
BUA: 85,000 m² (approx.)

Project Brief and Scope of Work

The CFC Mall Expansion Project is located in New Cairo, Egypt. CFC Mall is part of the master scheme of 700 acre community that includes residential, commercial and leisure facilities. The construction of the CFC Mall expansion consists of two-story buildings that include approximately 100 shops including retail, food and beverages and anchor units, in addition to the 2 entertainment centres with all the services needed including 2 basement levels which provide car parking facilities connected directly to the mall.

**Madinaty Four Seasons Hotel Structural Package**

Award Date: December 2020
Client: Talaat Moustafa Group
JV Partner: CCC/ATRIUM
Location: New Cairo, Egypt
BUA: 115,000 m²

Project Brief and Scope of Work

The Four Seasons Hotel, Cairo Capital is located within Madinaty; a large urban development in the New Cairo Area. The structural package undertaken by CCC contain both concrete and steel structures for the five main buildings, ancillary buildings and an underground parking structure. The five buildings include the hotel, ballroom building, SPA building, Lakeside restaurant and kids for all seasons building.

**La Cigale Gamarth**

Award Date: December 2020
Client: Majida Tunisia
Location: Gammartin, Tunis City, Tunisia

Project Brief and Scope of Work

The scope consists of structural works which contain deep foundations, finishes for the back of the house, facades and full MEP works for the:

- 300 key Five stars Hotel (1 basement + upper & lower GF+ 3 floors - BUA 91,710 m²)
- Conference Centre (divided into 3 halls 1 basement + GF +2 floors - BUA 36,512 m²)
- Mall, Leisure Building and Tent - BUA 95,694 m²
- Parking (BUA 23,471 m²)
- 60 villas (31,382 m²)



Standards and their Relationships Management Systems

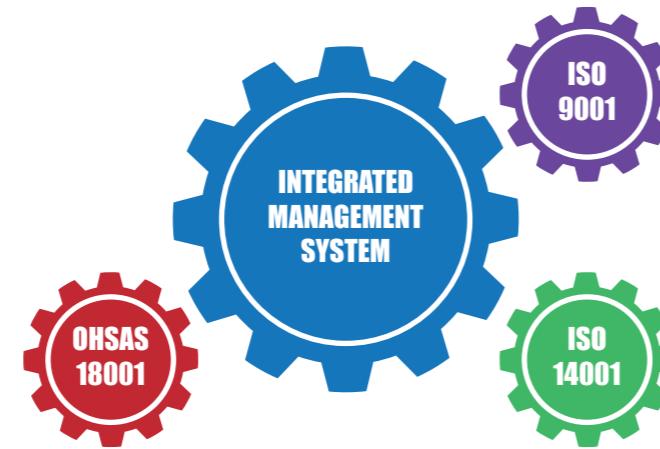
Article by: A. Papadopoulos

Management System Standards

Through the years we have been accustomed to adopt at least 3 of the basic Management System Standards (MSS) which have a significant role in the construction industry, namely

- ISO 9001
- ISO 14001
- ISO 45001 (formerly OHSAS 18001)

These standards apply to quality management, environmental management and health & safety management respectively. In fact, there are more than 80 MSS, and one of the fundamental principles is that all the standards are compatible to work together.



But how do they inter-relate?

And are there more management system standards becoming relevant to our business?

The ISO organization provides a clear perspective to answer these questions as we can find out starting with the underlying philosophy at the top.



What is a Management System?

The precise definition of a management system given by ISO is:

"A management system is the way in which an organization manages the inter-related parts of its business in order to achieve its objectives. These objectives can relate to a number of different topics, including product or service quality, operational efficiency, environmental performance, health and safety in the workplace and many more."¹

QUALITY MANAGEMENT: [Management Systems Standards and their Relationships](#)

How does the ISO Management System Model Help Organizations?

ISO management system standards help organizations improve their performance through a step-wise iterative feedback approach. Management system standards key principles can be summarized as follows:

- Specify repeatable steps
- Implementation of these steps to achieve the organization's goals and objectives
- Create an organizational culture that espouses the P-D-C-A cycle of improvement of operations and processes
- Enable increasing employee awareness and management leadership and commitment.



The benefits of an effective management system to an organization include:

- More efficient use of resources and improved financial performance,
- Improved risk management and protection of people and the environment,
- Increased capability to deliver consistent and improved services and products, thereby increasing value to customers and all other stakeholders.

MSS and Related Standards: The Big Picture

This picture below explains the different types of ISO documents supporting the management of an organization and what these documents deal with:

- Management System Standards
- Sector-specific MSS
- Management system related standards and implementation guidance
- Management standards

Examples of standards for each quadrant are indicated, while a [complete list](#) of the more than 80 MSS is available on the ISO website.



Standards Working Together: Shared Structure and Terminology

One of the fundamental principles is that all the standards can work together. Those who already use an MSS in one part of their business (e.g. for Quality) and are considering implementing additional ones in another area (e.g. for Information Security Management), will find that ISO management standards are structured in the same way, regardless of the domain of application. We are thankful to the high-level structure, which makes the implementation process as intuitive as possible.

The shared structure includes parts of a standard where identical text can be used (termed 'Annex SL'). Meaning, that in addition to having the same structure, MSS can contain many of the same terms and definitions.

ISO 9001 Management System Standard for Quality

International Standard ISO 9001 -latest edition 2015- specifies requirements aimed primarily at giving **consistent confidence** in the products and services provided by an organization and thereby enhancing customer satisfaction.

Its proper implementation can also be expected to bring other organizational benefits, such as:

- Better understanding and control of the organization's processes
- Improved communication

This standard, ISO 9001:2015, belongs to the 9000 'family' of standards which include:

STANDARD	GUIDELINE
ISO 9001:2015	Sets out the requirements of a quality management system
ISO 9000:2015	Covers the basic concepts and language
ISO 9004:2009	Focuses on how to make a quality management system more efficient and effective
ISO/TS 9002:2016	Provides guidelines for the application of ISO 9001:2015
ISO 19011:2011	Sets out guidance on internal and external audits of quality management systems





QUALITY MANAGEMENT: Management Systems Standards and their Relationships

↳ continued from page 7

ISO 10000 'family' for Customer Satisfaction - Supporting Quality Management Standards

The International Standards Organization (ISO) has many supporting standards which are used in conjunction with the ISO 9000 series. While some are process specific, the intention of most is to provide guidelines for improving a quality management system.

The ISO 10000 standards group relate to Customer Satisfaction and support the ISO 9000 series. These include:

STANDARD	THEME	GUIDELINE
ISO 10001	Customer Satisfaction	Guidelines for Code of Conduct for Organizations
ISO 10002	Customer Satisfaction	Guidelines for Complaints Handling in Organizations
ISO 10003	Customer Satisfaction	Guidelines for Dispute Resolutions external to Organizations
ISO 10004	Customer Satisfaction	Guidelines for Monitoring and Measuring Customer Satisfaction
ISO 10005	Quality Plans	Guidelines for Quality Plans
ISO 10006	Projects	Guidelines for Quality Management in Projects
ISO 10007	Configuration Management	Guideline for Configuration Management over the life Cycle of a Product
ISO 10008	Customer Satisfaction	Guidelines for Business-to-Customer Electronic Commerce Transaction System
ISO 10012	Measurement Management Systems	Requirements for Measurement Processes and Measuring Equipment
ISO/TR 10013	Documentation	Guidelines for Quality Management System Documentation
ISO 10014	Financial	Guidelines for realizing Financial and Economic benefits through application of quality management principles
ISO 10015	Training	Provides guidelines to assist Organizations in addressing Issues related to training
ISO/TR 10017	Statistical Techniques	Guidelines on Statistical Techniques for ISO 9001. Statistical Techniques allow better use of variable data to assist in decision making
ISO 10018	People Involvement	Guidelines on People Involvement and Competence
ISO 10019	Consultants	Guidelines for the selection of QMS Consultants and use of their Services

QUALITY MANAGEMENT: Management Systems Standards and their Relationships

Other Management System Standards Increasingly Relevant to the Construction Industry

Construction is both a complex and highly competitive industry, and while every organization is different, there are several concerns universal to the construction industry that standardization can help with. To successfully bid on projects, construction firms must run their operational activities efficiently, be proactive about safety, quality, the environment and sustainability, and at the same time be flexible to respond to evolving industry demands.

A multitude of Management System Standards are lately becoming increasingly relevant to the construction industry's domain of operations, driven by market forces and individual client's requirements. Such MSS include:

STANDARD	TITLE	MANAGEMENT SYSTEM	REQUIREMENTS
ISO/IEC 27001	Information Technology - Security Techniques	Information Security Management Systems	Requirements
ISO/IEC 27701	Information Technology - Security Techniques	Enhancement for Privacy Management	Requirements
ISO 29001	Petroleum, Petrochemical and Natural Gas Industries	Sector-specific Quality Management Systems	Requirements for Product and Service Supply Organizations
ISO 30301	Information and Documentation	Management Systems for Records	Requirements
ISO 30401	Human Resource Management	Knowledge Management Systems	Requirements
ISO 37001	Anti-bribery	Management Systems	Requirements with Guidance for Use
ISO 37101	Sustainable Development in Communities	Management System for Sustainable Development	Requirements with Guidance for Use
ISO 37301	Compliance	Management Systems	Requirements with Guidance for Use
ISO 41001	Facility Management	Management Systems	Requirements with Guidance for Use
ISO 44001	Collaborative Business Relationship	Management Systems	Requirements and Framework
ISO 50001	Energy	Management Systems	Requirements with Guidance for Use
ISO 55001	Asset Management	Management Systems	Requirements

ISO designed each of the above standards to be broadly applicable to any organization, containing a set of repeatable processes and targets for monitoring performance and initiating a cycle of continuous improvement, i.e. the key principles of the ISO management system model.

References:

ISO 9001:2015, "QMS Requirements" & ISO 9000:2015, "QMS Fundamentals & Vocabulary"

¹. ISO Organization: Management System Standards

Khazzan Central Processing Facility CPF Phase II

Ghazeer Project

Article by: B. Elias



SUCCESS STORY

The Jewel on BP's Crown

Delivery of Construction Projects successfully relies primarily on the teams executing them. Talent selection, mentoring & supervision, training & development, entrusting & delegating as well as adequate two-way communication are among the key factors that must be disseminated by the project management within their teams. Achieving such organizational setup would endorse deployment of the best practices, methodologies, processes and equipment that would enhance the project execution and add more assurances for meeting all its targets.

The success of the Ghazeer project started with this fundamental principle of "Teamwork", deploying a homogenous and professional team with a vivid vision, unrelenting aspire to excel and unyielding commitment to achieve the best results. Their ultimate goal was to portray the execution and results of the Ghazeer Project to be the "BEST in Class" for CCC and the oil and gas industry.

Recent EY's Global Oil & Gas Center study on 365 oil and gas mega-projects revealed that around 64% of these projects suffered cost overruns and around 73% of them went through considerable schedule delays. Needless to say that this in return, generated owners' dissatisfaction, budget overruns, contractors; losses and several disputes among the various stakeholders. A key contributor to such gloomy results was the incompetency of the teams deployed for executing these projects and the lack of adequate collaborations and communications among them.

Ghazeer Project execution went against all odds prevailing in the oil and gas industry. It demonstrated a consummate project execution to what a client desires and what a Contractor aspires for, meeting schedule, budget, and quality and safety targets. The following is Ghazeer ("The Jewel on BP's Crown" as called by BP) story of success running down the deeds and doings undertaken to deliver it successfully.



SUCCESS STORY: Ghazeer Project - Khazzan Central Processing Facility CPF Phase II

Background

Ghazeer Project is the second phase for the development of Khazzan Central Processing Facility ("CPF") owned by BP ("Company"). It is located in Block 61 in Sultanate of Oman. It is composed of a Gas Train of 525 mmscf/d, a Liquid Train of 35,000 bcpd, an Export Gas Compressor, inlet facilities with slug catcher, a new flare system as well as the integration with the CPF Phase I Facility in operation.

Company awarded Petrofac the EPC works ("Main Contractor"), with CCC nominated as Construction Subcontractor for performance of construction works as well as the EPC Works for buildings.

Project Outcome

Ghazeer's success is illustrated in Figure 1 below, emphasizing on financial, client, organizational development and cultural dimensions outcomes.

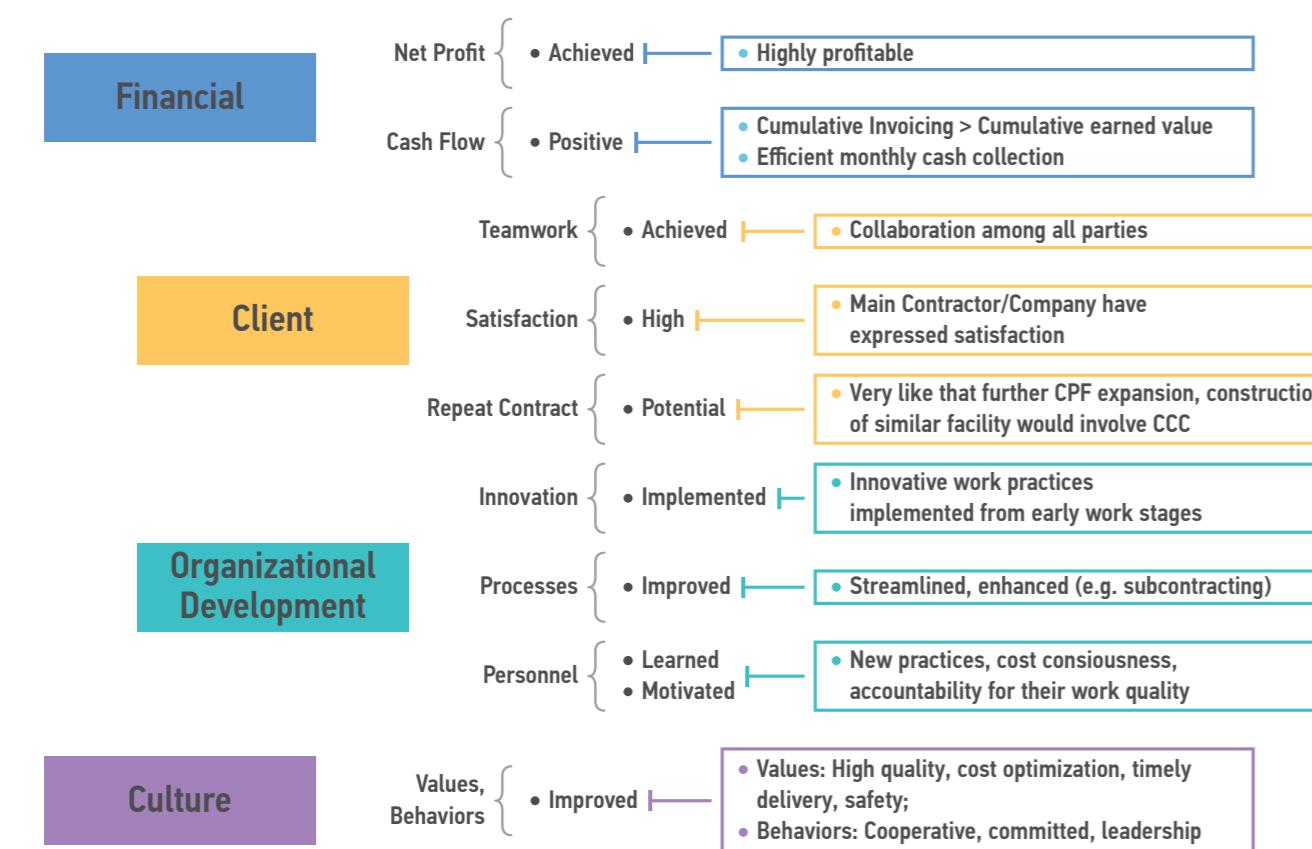




SUCCESS STORY: Ghazeer Project - Khazzan Central Processing Facility CPF Phase II

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Performance Indicators

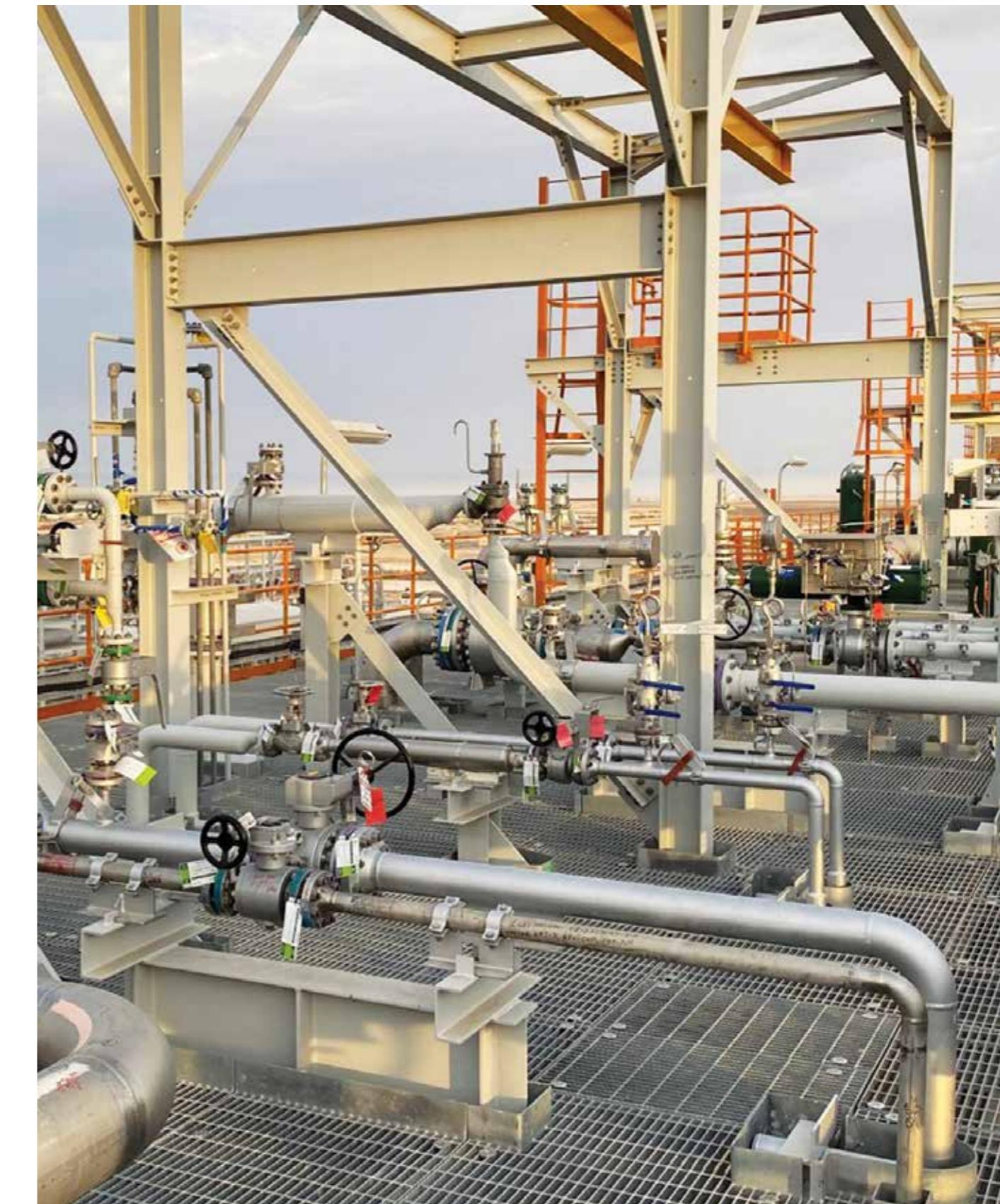


Ghazeer's Success Across all Dimensions

The project exhibited great performance on its main areas, as shown in the following table.

DIMENSION		OUTCOME	REMARKS
Safety	LTI's / Fatalities	None	LTI's performance is remarkable, considering the overall project work hours (19 million)
Quality	NCRs	8 (negligible)	Timely closed
	RFIs Rejection Rate	0.35%	Target not to exceed 3%
	Weld Repair Ratio	0.74%	Target not to exceed 3%
	Nitrogen-Helium leak testing (Commissioning)	Total leaks found is 16 minor leaks out of 13,500 flanges tested	Leaks found represent 0.12% of the whole scope
Schedule	Punch Items	Less than the set target (5,000 no.)	25% of Phase I total punches issued Progress remained ahead of schedule from inception until completion. It reached ~ 10% advanced progress at month 10 which lasted until month 19. During the last project stages it tracked close to the planned Base Line progress, yet ahead of it.
	Mechanical Completion (Overall)	Ahead of Schedule	
Cost	Overall Project Cost	Within Budget	Exceed Expectation

SUCCESS STORY: Ghazeer Project - Khazzan Central Processing Facility CPF Phase II





SUCCESS STORY: Ghazeer Project - Khazzan Central Processing Facility CPF Phase II

↳ continued from page 13**The Road to Achieving Success**

An array of various measures and initiatives deployed at several areas were the main project success factors. The most relevant are listed below.

- a. Strong Project Management Team (PMT) and leadership with clear vision to complete the project ahead of schedule, with excellent quality, safety and financial performance, drove the team's plans, goals and strengthened its commitment;
- b. Early engagement of PMT supporting the AO Sales and Proposals team in the negotiation and Contract review stages with the Main Contractor resulted in signing a Subcontract Agreement that protects CCC's interest and prevented to a great extent gray areas that might have created disputes during the project execution.
- c. Early project execution planning with involvement of the construction support team, provided the road map and allowed an early start of the works;
- d. Selection of high performing and self-motivated key personnel, enabled an efficient performance of tasks in all functional areas;
- e. Timely mobilization of resources (staff, workers, equipment and materials) allowed a quick start and achieved progress ahead of schedule; which in turn increased the team's morale and intent to deliver a successful project on or before the contractual completion date;
- f. Application of a "cloning" approach of the CPF Phase I design, expedited the preparation and approval of documents (Method Statements, Inspection Test Plans, Procedures, etc.);
- g. Usage of the existing site facilities accelerated the mobilization process, and allowed the team to focus on performance of the construction Works from an early stage;
- h. Implementation of relationship management facilitated the development of teamwork with Company and the Main Contractor, which eased the resolution of issues, obtaining their willingness to explore solutions and provide support;
- i. Implementation of Advanced Work Packaging (AWP) in the Brownfield, requested by Company and the Main Contractor, generated high level of coordination between Engineering, Procurement and Construction activities, efficient utilization of resources, and enhanced productivity (the decision to implement AWP in Greenfield was taken at a later stage after construction had started; therefore it was limited to some disciplines as most of the others were ahead of schedule).
- j. The project utilized the three-dimensional construction software (C3D) to present visually the three months look ahead forecast to all stakeholders, which provided confidence and visibility on the construction forward plan. Company used to print the slides and post them on the display board in their conference room to compare the actual progress achieved at the end of each month against the relevant visual C3D forecast.
- k. A new system was created by the project ISD Team, in coordination with the Corporate Quality Team, to monitor and control the faced flanged piping connections and joints, by utilizing the in-house application "Talisman". The new system satisfied Company's and CCC's requirements and proven to be functional and user friendly.
- l. The development of innovative approaches to carry out parts of the Works (illustrated below), increased productivity and personnel enthusiasm, whilst reducing costs;
 - Welding of pipe supports (and painting) to spools in fabrication shop prior to site erection;
 - Painting of inaccessible large bore field weld joints on ground prior to erection to save the cost of building scaffolding towers for painting purpose;
 - Fabrication of HDPE and GRE pipe spools in the fabrication shop. This method contributed to achieve great progress at an early stage of the project and resulted in fabricating 70% of that scope at the shop (under controlled environment), before even the start of trench excavation works. Cost saving were generated by using project-owned machines;
 - Early delivery of pipe racks with ancillaries (platforms, ladders, handrails, etc.) based on well-studied sequences, opened large works fronts to other disciplines, while enabling savings in time and cost by elimination of the subsequent potential need to install temporary scaffolding to replace missing handrails and staircases;
 - Delivery of structures with joint plates welded instead of loose;
 - Installation of cable ladder risers on the ground in lieu of after erection of columns;
 - Hilti threaded studs were used to fix cable trays instead of welded to expedite installation and avoid repainting;
 - Construction engineer shall inspect his own completed works to ensure compliance with specifications and drawings before offering it for QA/QC inspection to eliminate issuing punch items;
 - Closure of documentation simultaneously with completion of works, to expedite issue of Mechanical Completion Dossiers;
 - Use of rotary drum trenchers instead of rock breakers boosted productivity and produced back filling material;
 - Use of CCC Engineered Formwork System (DOKA);
 - Use of reusable molds instead of wooden panels for concrete foundations;
 - Use of a trailer as a mobile platform to install barbed wire in security fences;
 - Availability of standby equipment and spares on Site to ensure continuity of works in the event of break downs;
 - No mobile phones on Site, except for few key personnel;

SUCCESS STORY: Ghazeer Project - Khazzan Central Processing Facility CPF Phase II

- Electronic Requisition System (ERS) was an idea created by PMT and developed by site automation team. It is a fully automated web based program that aims to reduce cost by eliminating paper work, enhancing control on ordering materials and expediting approvals. The process diagram is shown here below:



- Undeclared overtime authorization is another web based electronic system developed on site to control the issuance and approvals of requests for overtime electronically saving both time and cost by eliminating the need to print and fill hundreds of hard copies. Process diagram is shown here below:



- m. Continuous (weekly) monitoring and analysis of progress and productivity generated a strong focus on striving for high performance;
- n. Use of the NAM (Najah Min Awal Mara) Program (that had been jointly developed by Company, Main Contractor and CCC and implemented in Khazzan CPF Phase I), to focus on defect prevention from the initial project design to start-up and operation of the Facility. It uses and applies proven techniques to deliver a defect free project. The NAM Program operates in a "no blame" culture which encourages all to speak openly, identify shortfalls and give recommendations to overcome obstacles that may impact quality and work progress, thus adopting a continuous improvement mind-set.

- The Program focuses on critical activities such as:
 - Pipe fabrication, welding, cleanliness, installation, testing and reinstatement;
 - Electrical Integrity;
 - Instrument Integrity;
 - Valves Integrity;
 - Flange management; and,
 - Preservation.
- o. A Subcontractors Performance Management Process was implemented and key performance indicators and mitigation measures were developed and discussed on a monthly basis.
 - The creation of a culture and commitment to achieve high performance, via frequent discussions about their potential to add value to the project execution, increase the subcontractors' reputation and enhance their personnel competencies; the frequent assessment of the performance achieved, identification of gaps, and development of corrective measures; and the treatment of subcontractors' teams as "extended" CCC's teams, improved subcontractors' productivity, expedited their works schedules, and prevented costs overruns and disputes.

Conclusion

Implementing project management tools and best work practices, including interlinked work breakdown structures with real-time data input by competent and strong project management team will improve performance and reduce risk of cost overruns and schedule delays.

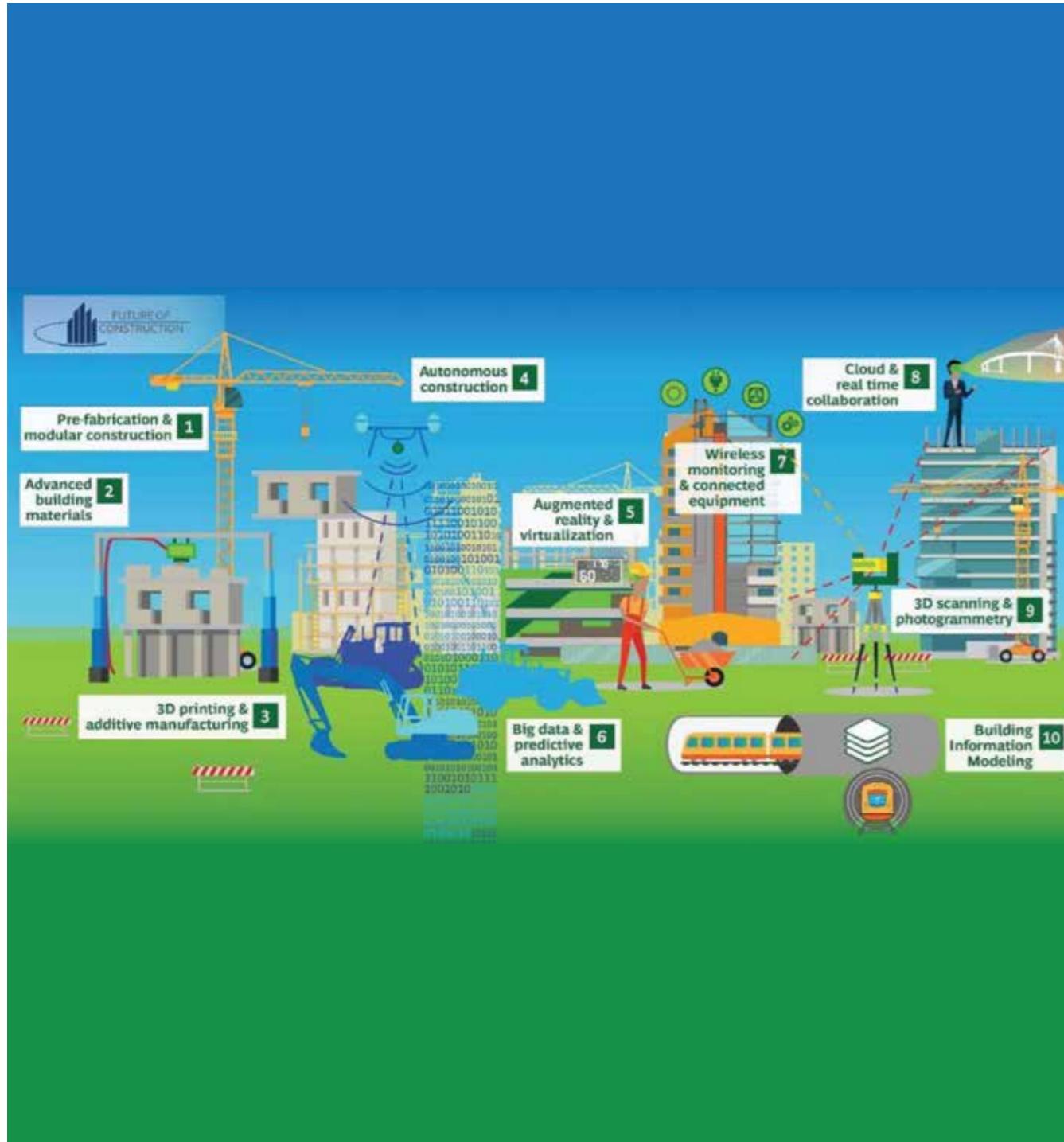
CCC Startup from an Idea to Reality

Background, Activities & Vision

Article by: A. Boualwan



FEATURE



FEATURE: CCC Startup - From an Idea to Reality

Awards

CCC won several awards at the **MEED Project Awards**, in a ceremony held in Dubai on December 16th, 2020. The awards celebrated the GCC's dynamic projects industry and recognized the best projects in demonstrating excellence across architecture, construction and engineering.

The 2020 edition of the awards received over 130 entries from leading organizations, project owners, contractors and consultants. Other organizations from UAE, Saudi Arabia, Kuwait, Bahrain, and Oman were commended for their achievements across 19 unique categories for delivering outstanding projects, reiterating the efforts that the entire GCC is taking to develop infrastructure that is strategically vital to the growth of the region.

CCC was named the winner of one GCC Award and three National awards:

- **GCC Award**
 - ↳ **Innovation Medal 2020**
3D Printed Single Family House for the Saudi Arabian Ministry of Housing, Saudi Arabia
- 1. **Innovation Medal, Saudi Arabia**
3D Printed Single Family House under the Building Technology Stimulus Initiative for the Saudi Arabian Ministry of Housing
- 2. **Innovation Medal, UAE**
Empowering EMAAR's Opera Grand Tower Project with Innovative IoT Technology to improve Safety and Productivity
- 3. **Sustainability Medal, UAE**
Off-Grid Portable Cabin (Accommodation and Office Units).



It is worth mentioning that CCC has also won many awards in the innovations and startups field during the last few years.

CCC won the **IPLOCA New Technologies Award 2019** sponsored by BP for utilizing the Internet of Things (IoT) to create a smart construction helmet that connects workers at construction sites using mesh networks to improve safety and productivity.

CCC was the winner of the **IPLOCA Environmental Award 2018** in recognition of realizing significant achievements in minimizing environmental impacts. Specifically, for developing the Off-Grid portable power cabin, a 100% solar powered mobile cabin that can be used as part of site establishment activities to power communication and mobile equipment for offices and camps.

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Introduction

The technological advances of the **Fourth Industrial Revolution** have drastically changed the world around us. It is altering the way we work and live & our everyday life.

What is the Fourth Industrial Revolution? How does it affect the Construction sector? How does it relate to the smart city strategies that will enable countries such as the GCC, to leverage technologies boosting citizen wellbeing and delivering more efficient and sustainable urban services? Why would the Global Infrastructure Hub (GI Hub), a G20 organization, along with the World Economic Forum, launch the Infrastructure 4.0 initiative? An initiative that is meant to transform Infrastructure or better say "Bringing the Fourth Industrial Revolution to Infrastructure".

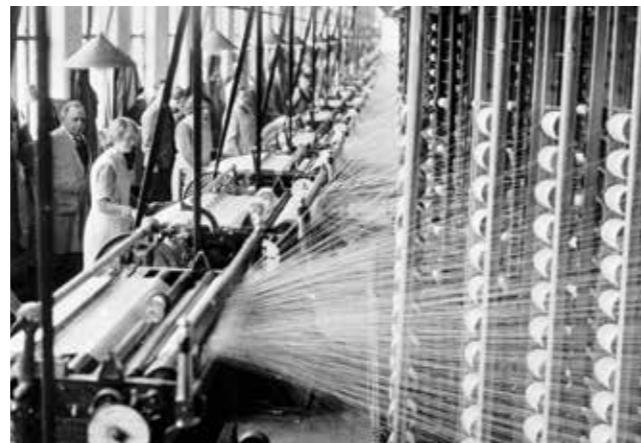
In the below article, we will try to answer briefly the above questions and share with you how CCC is reacting to all that.

Fourth Industrial Revolution

We frequently hear during the last few years the term Fourth Industrial Revolution. The best way would be to go through all the industrial revolutions the world has lived until today:

▪ First Industrial Revolution

At the end of the 18th century to the beginning of the 19th, a transition from handheld production methods to machines through the use of steam power and waterpower took place. Impact was clear on industries such as the Textile manufacturing, iron, agriculture, and mining.



▪ Second Industrial Revolution

Technological advancements combined with a new source of energy, such as Oil, led to the creation of the internal combustion engine at the end of the 19th century. Accordingly, the faster transfer of people was a result of installations of extensive railroad, and later the inventions of the automobile and the plane, while faster transfer of ideas was a result of telegraph networks. This combined with increasing electrification allowed for factories to develop the modern production line which resulted in mass production.



▪ Third Industrial Revolution

In the second half to late 20th century, with the invention of electronics, telecommunications and computers, the Digital Revolution was born. Besides the impact of automation against all fields, the creation of the internet and mass communication led to what is called Globalization.



▪ Fourth Industrial Revolution

Building on the Third Industrial Revolution, combined with the breakthroughs in emerging technologies such as Robotics, Artificial Intelligence (AI), Internet of Things (IoT), 3D Printing, 5G, Autonomous driving, Additive Manufacturing, etc., the fourth was born. This revolution represents a fundamental change in every aspect of our life and the way we work. It is a turning point in humanity, and how it develops, empowered by advancements that leverages what took place at the first, second and third industrial revolutions.

As per the WEF report, "*it is merging the physical, digital, and biological worlds and fusing technologies in ways that create both promise and peril. The speed, breadth, and depth of this revolution has forced us to rethink how countries should develop, how organizations create value, and how people from all walks of life can benefit from innovation. Now, as the world grapples with COVID-19, there is an opportunity to further embrace this revolution in ways that create a more inclusive, human-centered global economy.*"

↳ continued on page 20



FEATURE: CCC Startup - From an Idea to Reality

↳ continued from page 19**Where is the Engineering & Construction industry from all the above?**

While the E&C did gain a lot from the advancements that took place in the first and second industrial revolution, the question remains how much did this industry transform itself with the third industrial revolution and where does it stand from the fourth?

Many studies have been released showing how productivity norms in other industries, such as manufacturing, has grown exponentially in the last 50 years while productivity in construction has barely increased at all. Other studies associated that with the fact that the E&C industry is one of the least digitized. So, has the E&C industry missed the transformation other industries underwent during the Digital Revolution (or what is called the third industrial revolution)? To some extent this is true. Take for example BIM. The concept of BIM has been in development since the 1970s, but it only became an agreed term in the early 2000s. Development of standards and adoption of BIM has progressed at different speeds in different countries; standards, for instance, developed in the United Kingdom from 2007 onwards have formed the basis of international standard ISO 19650, launched in January 2019.

When it comes to the Fourth Industrial Revolution, the scene is totally different. In the last few years, we have seen much hype in ConTech. ConTech is a phrase that has been coined to identify advanced construction technology; it is the technology used to innovate the way to plan, design, and build structures, as well as the manufacture and installation of their components. There are a wide range of technologies used as enablers for ConTech, starting with 3D Printing, Drones, Robotics, AI, IoT, Additive Manufacturing, etc.

Coupling the fact that most of these technologies have been maturing lately (or at least evolving rapidly) with the boom in entrepreneurship and Startups ecosystem we are currently witnessing 100s if not 1000s of Startups specializing in ConTech!

How should construction corporates react to this fact? Resist it? Ignore it? Perceive it as a threat or Opportunity?

Well, we at CCC are a strong believer that this is a big opportunity to advance our agenda towards a sustainable, resilient, and affordable construction. This can only be done should we embrace this revolution and play an active role in this transition. Our answer is "CCC Startup"!



FEATURE: CCC Startup - From an Idea to Reality

↳ continued on page 22**Where is the Middle East from all this?**

The main goals of a smart city are to improve policy efficiency, reduce waste and inconvenience, improve social and economic quality, and maximize social inclusion. Without the need to deep dive into the details of Smart Cities, the impact that it will create on the construction industry is huge.

Recently, GCC countries have been investing in major national transformation programs to stimulate economic growth by transforming into knowledge-based economies and creating opportunities for the development of smart cities. Effective and efficient implementation of smart city strategies will enable the Gulf cities to leverage technologies to boost citizen wellbeing and deliver more efficient and sustainable urban services.

Just to name a few, where Dubai announced its Smart city initiative that aims at creating "opportunities for digital innovation, helping build new economic ventures, improve service delivery and facilitate citizen engagement"; And Qatar Smart city initiatives, [TASMU](#), that aims to "harness the power of [ICT](#) (Information and Communications Technology) to deliver outcomes to the citizens, residents and visitors". And [Neom](#), a city that will be powered only by solar and wind power (Renewable energy) where the city will be designed and constructed from scratch, with innovations in infrastructure and mobility have been suggested. To Oman launching a pilot project for smart cities with the objective to implement technologies relevant to the Fourth Industrial Revolution, such as the [Internet of Things \(IoT\)](#), [Artificial Intelligence \(A.I.\)](#), blockchain and others.

In the last few years, one can also see the direct impact of the above on some ongoing projects and upcoming requirements. For instance, KSA launched BTI (Buildings Technologies and Innovation) to develop smart, affordable and sustainable housing units for the future, with a mission aiming to address the affordable housing demand gap through driving the adoption of innovative building technologies in the construction sector in KSA. This is the entity that awarded CCC the 3D Printing House that was completed late 2018!

Also, Sheikh Mohammed bin Rashid Al Maktoum has announced Dubai 3D Printing Strategy during which the use of 3D printing in Dubai's construction sector will increase by 2% yearly targeting 25% of buildings to be 3D printed by 2030.

Above Smart Cities initiatives will create big opportunities for the industry, as the number of construction projects will increase. It will however create a big challenge for traditional construction companies to transform themselves to conduct Smart Construction. In a way, it will be a kind of everlasting marriage between Construction and Tech firms!

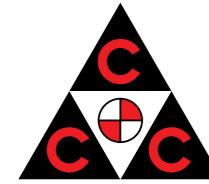
Thus, establishing a unit focusing on the Fourth Industrial Revolution in the construction sector and building partnership with key Startups and technology providers in the field, like CCC Startup, is becoming a necessity for big corporates, like CCC, to align themselves with many of the GCC countries' 2030 visions, as well.



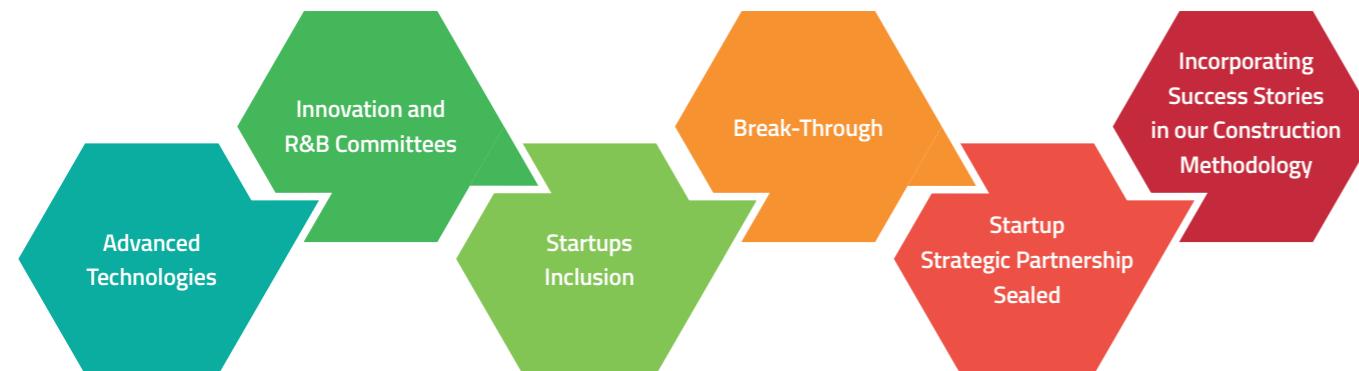
FEATURE: CCC Startup - From an Idea to Reality

↳ continued from page 21**CCC Startup Background**

Despite all above, the construction industry is still one of the least digitized industries, with continued reliance on manual intensive labor as the primary source of productivity. Driven by all the megatrends listed above and the increase in complexity of construction projects as well as challenging market conditions, the construction sector is at a cusp of a new, dynamic era of engaging technological construction solutions that will ultimately result in cost reductions, improved safety measures, and enhanced quality standards.



Building Business Through Innovation The Strategy



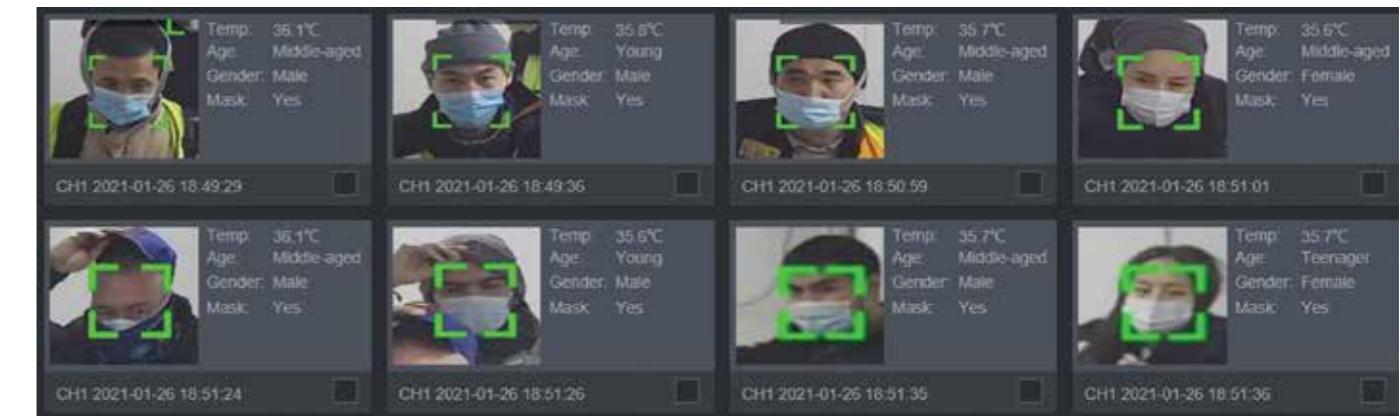
As a response to all that, & aiming to promote digital transformation by aligning our organization's business & operational model with futuristic visions and strategies, CCC announced in the last few years the "Innovation and R&D initiative" as a major milestone for the years to come. The aim of this initiative is to maintain CCC's position and legacy as a market leader, not only by improving current practices but also by finding a new niche for itself in the marketplace. Accordingly, any new idea or technology to be researched or piloted needed to fall under two groups:

- **First** group focusing on topics related to driving internal efficiency, productivity, & general improvement within the company (e.g. LEAN, BIM, IoT for labor optimization, Drones in Construction, etc.)
- **Second** group focusing on initiatives that would create new business opportunities for CCC (e.g. 3D Printing, Modular construction, renewable energy, etc.)

To implement it within CCC, we launched a R&D task force to drive the innovation initiatives across the company. We have created focus groups by launching surveys to collect good ideas and to source internal process improvement as well as business ideas. Experts are then grouped in committees to address the various emerging technologies and assess the ideas sourced.

Realizing very soon the need to tap into the Startups ecosystem to source latest innovations in the field, CCC Startup was established. "CCC Startup" leverages CCC established presence, countless fields of operation, and the cross-disciplined subject matter experts to establish a very robust collaboration and cooperation framework between CCC and the Startups world. This collaborative approach will give the startups the opportunity to pilot their new technologies at large scale, in different locations, and in a live environment. After successful pilots, we develop strategic partnerships with startups at various stages of their life cycle thus bridging the gaps by offering the domain and market knowledge needed. Most importantly, with this approach, we are continuously sourcing innovation into CCC construction methods and daily operations and in many cases good practices have been documented in CCC official guidelines and procedures.

FEATURE: CCC Startup - From an Idea to Reality

↳ continued on page 24**Success Story****AI & Thermal Cameras**

CCC has successfully implemented, commissioned and tested the first Artificial Intelligence video analytics technology to fight COVID'19 outbreak in 3 Camps. Two Camps located in Kazakhstan and One in Qatar. We leverage artificial intelligence technology functionalities to the next level that will facilitate and improve project controls such as facial recognition that will be used in time attendance, automated head count, security measures and to seize / contain the spread of covid-19 outbreak in construction sites.

▪ **Kazakhstan**

Two camps from MEI project were selected for this pilot. The RV camp that hosts 1200 employees and the Nomad camp with 700 employees in total. In both cases a shipping container was modified to include Thermal Screening checking the Employee's temperature as they pass through and Sanitization spraying systems to curtail their disinfection. The Thermal cameras other than checking the temperature of staff, were used to for facial recognition and headcount. These cameras could recognize the employees even with their facial masks on.

▪ **Qatar**

In Qatar we successfully run the pilot project in Um Said Camp that hosts 2200 employees. Again, two shipping containers were modified to Sanitize, check the Employee's temperature and facial recognition as they enter and exit the camp.

3D Printed House

Together with Netherland based startup, **Cybe**, "CCC Startup" oversaw, executed, and completed a mainstream 3D Printed House Prototype - the world's first realistic approach to the real-life mass production of 3D Printed Houses with MEP (Mechanical, Electrical, and Plumbing) integration while printing. The Prototype took 3D Printing from an 'abstract future vision' through to real-life implementation as a mainstream solution.





FEATURE: CCC Startup - From an Idea to Reality

↳ continued from page 23**Off-Grid Cabin**

In close collaboration with German Technology Provider **TESVOLT**, the world's first 100% 24-hour solar-powered portable cabin for the construction industry was engineered, installed, and commissioned at 3 different projects within CCC's operation in the Gulf. The solar powered cabins with battery storage system meet day and night energy demands, maintaining round the clock operation and room temperature of 25°C. The above project later successfully won the 2018 IPLOCA Environmental Award, an award sponsored by SHELL.

**IoT Technology**

IoT (Internet of Things) technologies are wide spreading in several industrial sector. New systems are been developed for adoption in new fields of application, like safety and performance at work. In recent years, several projects and prototypes as well as industrial solutions have been developed using IoT technologies proving the added value to many Industries.

▪ **WakeCap**

Utilization of IoT technology to enhance safety and performance was always on CCC's innovation roadmap hence came our investment into Dubai-based WakeCap with the mission to overcome the challenges in digitizing construction sites through a tracking device that integrates seamlessly in the hard hat of construction workers. WakeCap comprises an IoT-enabled helmet, which does not compromise its structural integrity, a battery-powered and wireless-mesh network that connects the worksite securely and scales up with the project as well as a dashboard monitoring system and ability to be integrated into existing applications and project management software.

▪ **R&D IoT committee**

In Kazakhstan MEI Project, the IoT committee is running a RnD Project to develop Wearables that will enhance the productivity and safety of our employees in our construction sites. Currently the Team is working on the designs and technical evaluations while shortlisting the IoT manufacturers, bearing in mind that such technology does not exist in the market.

The initial requirements were to research and develop Wearables that will track and measure:

- Productivity of direct manpower.
- Health and safety of employees.
- GPS tracking.
- Routine administrative and accounting requests for employees without human interaction.
- Contact Tracing and proximity measures (COVID-19).

FEATURE: CCC Startup - From an Idea to Reality

↳ continued on page 26**Additive Manufacturing**

Additive manufacturing also known as 3D printing is becoming increasingly important. It is playing an increasingly important role in the manufacturing industry and is mainly used in toolmaking and prototype construction. Early applications suggest that use of AM technologies for construction have the potential to decrease labor costs, reduce material waste, and create customized complex geometries that are difficult to achieve using conventional construction techniques. CCC as leaders in the MENA region, is already working with **Immensa Labs** in order to adopt such techniques and methods in current and future projects.

- **3D Printing Mods Reviving concrete casting techniques with 3D Printing:** Working side by side with Immensa Labs, CCC released the result of a world-first joint effort to recover a series of concrete casting techniques with the aid of large-format 3D printing. The 'Sensorial Adaptive Concrete Column' is made from 3D printed formwork produced in Immensa Labs' facility after a series of technical consultations, constructive feedback, and guidance by CCC's subject matter experts.
- **Digitizing Inventory:** We worked with Immensa to evaluate the benefits that 3D printing could bring to CCC machines' spare parts and successfully reverse engineered, 3D printed,



and installed spare parts on some of CCC's machinery fleet. The futuristic application of "Just in Time" Inventory (if successful) will potentially reduce the size of inventory warehouses and avoid the risk of unexpected costs incurred in having to custom produce replacement parts in small lots in addition to the down time in remote areas.

▪ **Implementation in Future Project???**

Currently a team of Engineers are trying to work with Immensa to manufacture 3D printed Molds for GRC Casting Panels for the Boulevard Bridge B5, Tunnel 1, Tunnel 2, and Tunnel 3. This will speed up the construction time and reduce cost.

Also, the team will propose how to incorporate Immensa technics at Tunis La Cigale Gammarr Project.





FEATURE: CCC Startup - From an Idea to Reality

continued from page 25**Drones**

Drones technology has recently boomed in the construction industry, turning numbers into billions of dollars. CCC has been an early adopter and has become sure-footed in drone technology usage in construction in collaboration with Drones Startups. The next step in leveraging the new technology was adopting drones across the construction lifecycle. Accordingly, a corporate guideline for drone's has been issued on April, 2019 (No.: CM-CSQM-006) where it was distributed and communicated by construction support department to all projects and operations. Moreover, a corporate manual for Geomatics Survey Work Standardization was issued dated on October 2020 (No.: CS-CSQM-020), which has a detailed section about drones and its applications along other modern Geomatics applications.

The advancements of the technologies that accompany drone technology such as the introduction of stronger materials, carbon fiber, high capacity batteries, IMU, GNSS, AI, imaging devices and LIDAR have given rise to drones that are smarter, stronger, and can fly faster and further than ever before. Hence, "CCC Startup" has been very active in sourcing innovative drone startups that utilize the technology to its full potential.

Engineering & Surveying

Drones are mainly used in the construction industry for Engineering, surveying and inspection purposes. They are equipped with several sensors, such as RGB, multispectral, and thermal cameras. They can capture a great deal of aerial data in a short time.

A drone is an added value tool for construction projects, as it is significantly faster than the traditional surveying method, the accuracy is compromised to an acceptable level. The Drone usage in construction is cost-effective in comparison with traditional methods, as it minimizes the manpower, saves time, improves communication, and documents every detail throughout the job site.

By processing the captured data, it becomes easy to use for quantifications and volume calculations. Moreover, drones have been utilized in the reconstruction of BIM models, enhancing the extraction of the As-built data, assisting in creating digital twin models and clash detection.

CCC led several projects while utilizing drones such as highway infrastructure project in Oman (ATD Project). The drone has been used to perform precise surveying of the constructed roads and to perform volume calculations of the produced stockpiles in borrow pits and crushers.

Progress Monitoring

Progress monitoring for construction projects becomes easier, faster and more precise by utilizing drones.

It allows to monitor construction progress at regular time intervals from exactly the same location. The project team can fly Drone to capture images or record videos, which will be used to generate the weekly progress reports and reflects what have been constructed into progress percentage.

Planning team considers drones as a step change in their methodology. Currently, it is widely used in infrastructure projects as an outdoor activity. Yet, it can be used for indoor activities, however, it will have some limitations.

CCC projects in Qatar have utilized drone throughout different phases of construction; from initial planning to regular progress monitoring, and finally with the as-built model and reports. Moreover, it has been used in Abu Dhabi Plaza High Rise tower project in Astana to perform several inspections of the core wall during construction for safety and QC purposes.



FEATURE: CCC Startup - From an Idea to Reality

Cargo

Cargo-lift cargo carrier drones have been making headlines. Their ability to carry air cargo in various conditions to remote locations represents a powerful use case. This type of aircraft could be a game-changer for the air cargo industry, although it could make a real difference even in the Construction Industry by delivering materials on the right place and at the right time, effortless. Instead of sending truckloads of goods on a set schedule, cargo-carrying drones can ship fewer items more often but with less of an impact.

Challenges

Drones with their current technology has a massive role in the construction industry. Drones capabilities, functionalities and application are improving day-by-day. However, there are some limitations that have to be considered while using the drones such as weather conditions, proper training and seeking local authorities' permits.

**CURA**

CCC in collaboration with the open source project **CURA**, successfully converted a container into a portable Intensive Care Unit (ICU) as part of its capacity building efforts in the GCC. CURA (acronym for "Connected Units for Respiratory Ailments" and also "Cure" in Latin) proposes a quick-to-deploy solution to expand emergency facilities and ease the pressure on healthcare systems treating patients infected by coronavirus. CCC is studying the feasibility of manufacturing more units to support hospitals and communities as they struggle to treat an increasing number of patients with respiratory infections. CURA aims to facilitate the work of medical staff in avoiding cross infection and hospital bottleneck.



CURA is an open-source design for emergency ICU units. Each CURA pod is fast to be mounted outside a hospital and is as safe as a regular isolation ward. It uses repurposed shipping containers to create plug-in Intensive-Care Units (ICU) with bio containment through negative pressure that can restrict the COVID-19 virus from leaving the chamber. Through erecting CURA containers, CCC aims to improve the efficiency of the existing design solutions of field hospitals, producing a compact ICU pod that is quick-to-deploy and safe to work in for medical professionals.

Reforestation using fourth industrial revolution tech

The Greek Minister of the Environment and Energy recently announced the launch of Greece's largest reforestation campaign. The reforestation effort would lead to the planting of over 30 million trees over a period of 10 years. CCC wants to take part in this initiative, by promoting a new revolutionary Reforestation method by using Drones. For this reason, CCC is on the run to collaborate with startups that uses precision drone technology to replant seed pods into deforested areas worldwide. For this effort, CCC will study the feasibility of reforest 100 hectares burned by wildfires in the Pentelikon Mountain.



Mall of Oman Project Case Study

BIM in Action

Article by: A. Abu Alia

Overview

The Mall of Oman project with a total built-up area of 387,000 m² will be the largest retail shopping center in Oman, and a flagship destination for visitors near and far, including the Sultanate Largest VOX cinemas, the Family Entertainment Centre, the Magic Planet and restaurants, as well as the iconic snow park that will be the first of a new generation of real snow and ice indoor amusement parks. In this article, we will focus on certain innovative BIM workflows that were applied and added value to daily operations at Mall of Oman project.



BIM Implementation

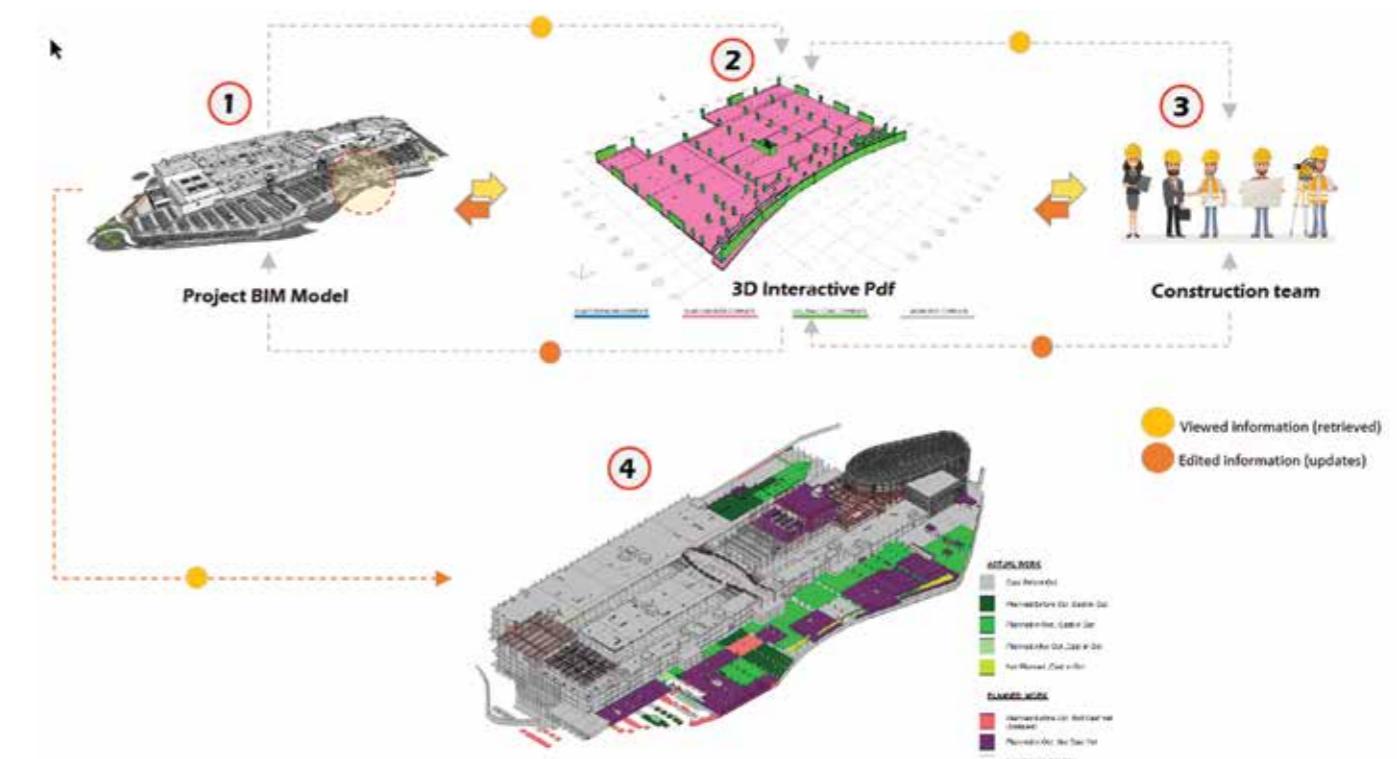
BIM technology was fully utilized during the entire design phase in the Mall of Oman. The BIM project model was handed over to construction teams (contractors/sub-contractors) and successfully used by all stakeholders during the construction phase. In addition, BIM was adapted to this project as part of Mr. Samer Khoury's innovation initiative for BIM-Based Controls systems at CCC.



1st Case: Utilizing BIM to Automate Progress Reporting

The Challenge

At the Mall of Oman project we had strict client requirements when it came to progress reporting, accordingly we have had to compile a very detailed and comprehensive weekly progress report to the client and without utilizing high end technologies, preparing this weekly report (500 A3 pages at the peak) would have been a tedious task.



BIM Solution

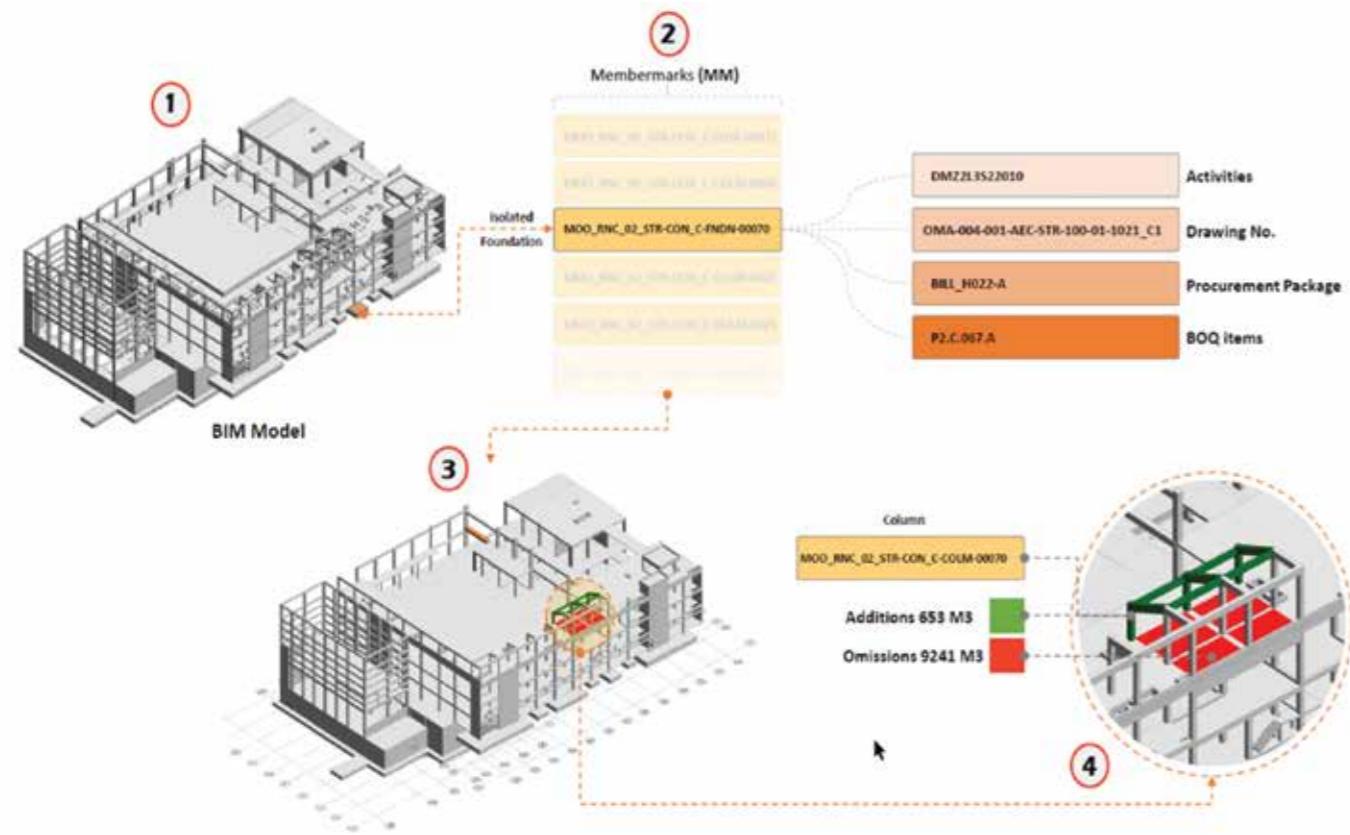
Throughout using BIM Models and the integration of **3D Pdf** technology, the BIM team generated **3D interactive Pdfs** that were used by construction teams on site to view data (such as quantities & types) as well as to edit (collect) progress records on **3D pdf**. In addition, through **3D interactive Pdfs** teams were able to access 3D models and to understand the complex structure using PDF technology that is easy to use. Eventually, the progress monitoring process automation saved time and improved quality of work.

BIM: BIM in Action - Mall of Oman Project Case Study

*continued from page 29*2nd Case: Utilizing BIM for Variations Management

The Challenge

Due to the incomplete design of the major parts of the Mall of Oman (MOO) project, there have been a large number of variations that needed to be evaluated in terms of cost and time impact (around 549 VOs, some of which include 270 affected drawings). Tracking, understanding and documenting the root causes of these variations using traditional methods was an extremely difficult task, as well as duplication of effort, since each project team (planning, cost, QS, procurement, construction and engineering) analyzed the variations separately in order to understand the impact on its department.



BIM Solution

By leveraging the BIM Models project, we were able to develop a BIM-based variation management system to quantify and visualize changes on 3D BIM centralized Model. A unique ID (Membermark) is assigned to each element of the BIM model and this ID is used to record and track all changes per object over the life of the project. As a result, all BOQ items, Shop Drawings, procurement packages, as well as activities were linked to these IDs within the model. For example, once a column has been modeled and being affected by several variations, these changes can be traced and quantified at any point in time as long as these changes are properly recorded within the BIM Model.

BIM: BIM in Action - Mall of Oman Project Case Study

The Challenge

Tracking the project's progress and verifying quantities was a major challenge due to the complexity of the project, the large built-up area and the involvement of many subcontractors (up to 60 subcontractors are working simultaneously on site & using traditional paperwork approach to report progress and monthly certified quantities).

Our Solution

An **Integrated Payment Platform** which is a cloud-based platform developed on Autodesk Forge to allow project stakeholders to access and share real-time data from anywhere via desktop and mobile devices.

How Does it Work

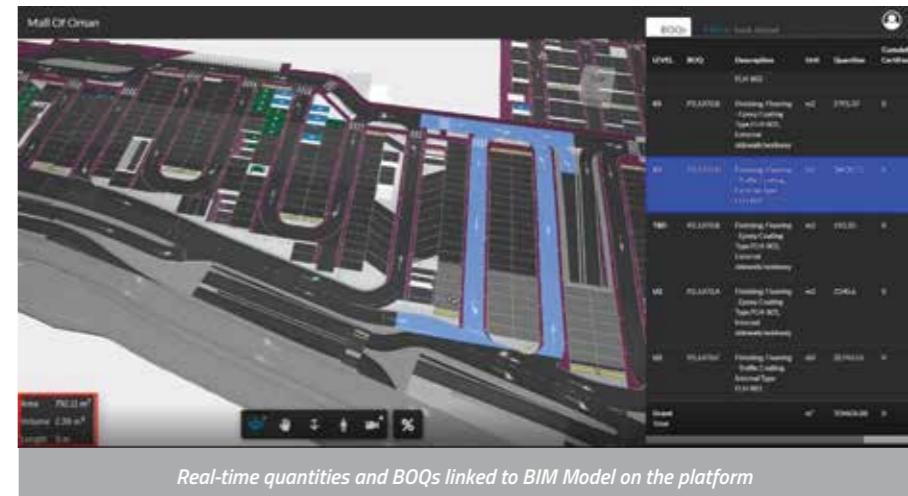
While the BIM technology was the cornerstone of our workflow by relying on the project BIM Model as the centralized database container in which all the project changes were being continuously incorporated to provide the latest robust information, the Autodesk Forge was used as cloud-based platform to allow project stakeholders access and share real-time data from anywhere at any time via desktop and mobile devices.

Key Benefits

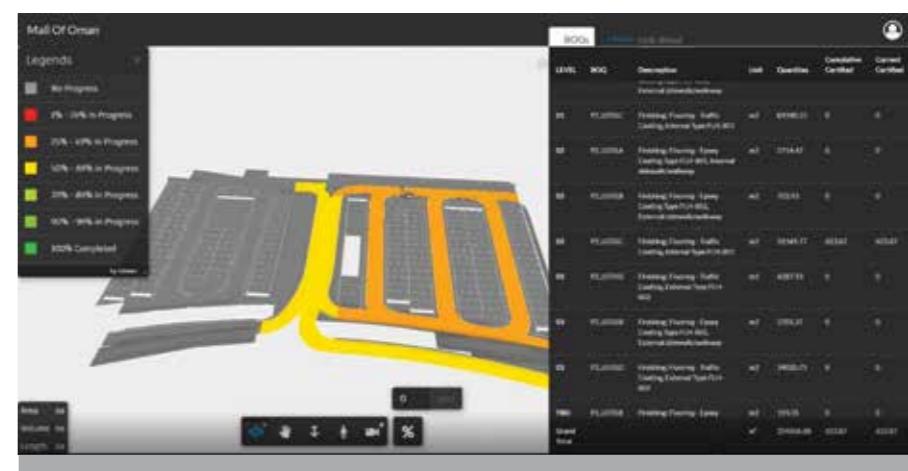
Centralizing the payment certification process via Autodesk's FORGE platform significantly reduced the payment certification process from many days to a few hours. The following benefits were also achieved:

- Enhancing the teams **Productivity** by reducing man-hours as well as costs through automation.
- Improving the teams **Collaboration** through real-time data sharing and integration among stakeholders.
- Promoting data **Tractability** throughout providing access to centralized BIM integrated data.
- Developing an **Eco-friendly** platform helped reduce printing by moving completely to a paperless workflow.

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Real-time quantities and BOQs linked to BIM Model on the platform



Real-time progress collection and reporting using a cloud-based Integrated Payment Platform

SOC Mobile Application

Article by: J. Koroth

Setting Technology to Enhance Hazard-Identification, Reporting, Rectification & Trend Analysis

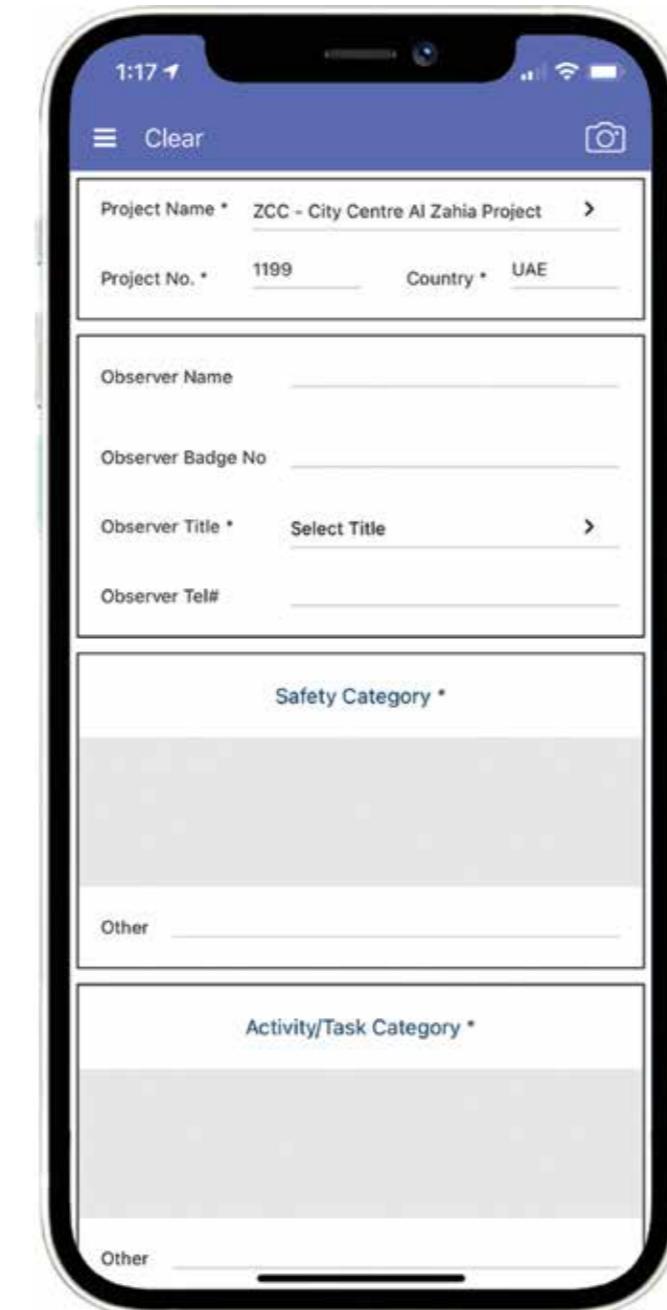
SOC (Safety Observation Card) plays an important and vital role in Hazard-Identification, Reporting & Rectification Process. It has been an important tool to carry out Hazard Trend Analysis to identify pattern and strategic hazards and risks on sites; therefore obtain lessons learned and improve. For decades, the safety observations are reported on printed cards and finally submitted to Management and Corporate HSE-Group Office in excel format (SOR). Project HSE-Managers collects the SOCs from safety Offices and others who fill the SOC cards, analyzes the SOR and therefore take corrective actions accordingly.

Corporate HSE-Group office collects SORs from all CCC projects on monthly basis to have a bird eye view on the ongoing trend-type hazards and risks at the projects and therefore provide the necessary support. Moreover, all SORs received from CCC projects are combined in one CCC SOR which indicates the overall and strategic trend-types hazards which applies to most CCC projects and areas of operation. Accordingly, HSE-Group office recommends strategic solutions that apply to all CCC projects to resolve these strategic HSE Challenges. Such strategic solutions are incorporated into our CCC HSE plans and procedure as a part of the 'Continual Improvement' and retaining lessons learned.

In our effort to improve and digitize the Hazard-Identification & Reporting Process which is the first and most important step for problem-solving, the new digital (SOC Mobile Application) has been developed jointly by the HSE-Group Office and CCC MOA IT to facilitate and improve the Hazard-Identification and Reporting System. The digital (SOC Mobile Application) shall eventually replace the SOC Card and the SOR Excel Sheet at all of CCC projects worldwide, with few exceptions where smart phones are not allowed.

The application is made available for both Android and iOS platforms and can be installed by any employee at the projects. The data submitted by observers through the new "SOC Mobile Application" from any project shall be promptly received by the Project HSE-Manager/ Clerk and the CCC Corporate HSE-Group Office for review and analysis.

The "SOC Mobile Application" shall be launched to CCC projects soon for implementation.



HSE: SOC Mobile Application

Key Features of SOC Mobile Application

Can be Used by Any Project Personnel to Record an Observation

The application is developed to work with all popular mobile platforms and it does not have any user restrictions. By letting anyone with a smartphone and who work in the project to make an observation, the chances for missing any safety observation or good practice will be nearly zero.

Make Observation with Photo

"A picture can speak more than words", the SOC mobile application will allow the observer to make an observation with picture captured in real time. It help us or anyone looking at the observation either positive or negative or even a near miss to understand and get a clear picture of what exactly the situation was.

User Friendly

Simple user interface makes it very user friendly, avoiding any confusion to use the app. Installation process of the app will be guided by the project SOC administrator assigned by the HSE Group and the app usage guidelines will be provided by the same personnel.

Offline Submission Feature

Mobile application is built with offline features which allows the user to make observations even if there is no internet connection available at the moment. The observations made while offline will be submitted automatically when the internet connection is restored.

The SOC Mobile application combined along with dashboard allows the Corporate HSE Group and project management to have more advanced control options and better analysis of data gathered. The whole database is graphically visualized in multiple ways and can be filtered or sorted according to project, location, observer, violator, time, status etc.

SOC Dashboard Overview & Features

Control Panel & Dashboard

SOC admin control panel will allow the project SOC administrator to edit project details, add or delete project specific data and control dashboard access to project users. The login system is connected to CCC email, which makes it easy access without the need of remembering a new password.

View the Details of Observation

Project SOC admin and other assigned users will be able to view the received observations and the details to take necessary action and more precautionary safety measures.

Close Open Observations

Authorized HSE personnel at project or the project SOC admin is allowed to close an open observation after implementing necessary action.

Fast and Effective Ways to Retrieve Data

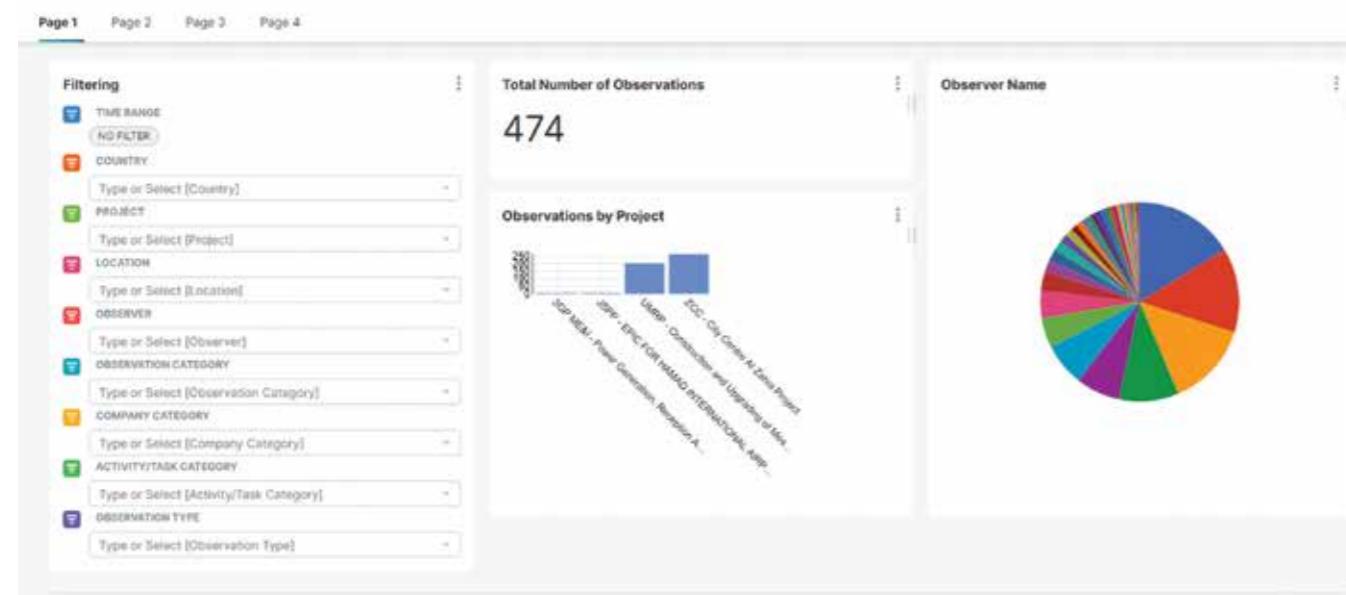
SOC Dashboard will allow the project management to pull the required data for individual project with ease for any client submission or presentation. The graphs can be saved to picture format and can be used in digital or printed materials. This feature will allow the corporate office to pull the data for all CCC projects for top management submissions and presentations.



HSE: SOC Mobile Application

↳ continued from page 33

SOC Dashboard



SOC Admin Panel

Safety Observation Card

ZCC - CITY CENTRE AL ZAHIA PROJECT
UAE - UAE

Observations

Top Violation Category
Fall from Height/Harness (34)

Top Commanded Company
Subcontractor (7)

Setup

Dashboard
No Dashboard defined

Locations
18

Titles
32

Sign out

© 2020 CONSOLIDATED CONTRACTORS COMPANY

Safety Observation Card

Observations All

- Workforce were engaged in painting activity and equipped with sufficient PPE. Also, activity provided with adequate supervision.
- Waste accumulated at Mall perimeter areas.
- Tree planting around the plaza areas was carried out.
- Activities utilizing MEWPs are provided with adequate supervision. Also, required exclusion zone are maintained..
- Safe shifting of materials from M8 to M6 using hydraulic trolleys enough manpower . The use of these machine have made the task easy and safe as they eliminate hazards of manual handling.
- Dubai Metal company has a welding task for steel structure, the certified welder prepared the full requirements of PPE, fire extinguisher, water bucket and barricades the area by fire blanket.
- Operative are unisite inside of BOH and behind the staircase

Observations within an area of 200 m² - safe work area distance, exclusion zone and the extent of restricted ammonia storage

HSE Group would like to thank the entire IT team at MOA, especially Mr. Jean Pierre Wehbe (Head of IT Section) & Mr. Baseem Koudsi (Manager - IS & Technologies) for making this application into reality. SOC mobile application is currently on its initial version and we intend to introduce more features later on as requirement arises, also depending on the user feed backs.





29 Winners of Qatar Sustainability Award 2020, honoured by Qatar Green Building Council (QGBC)

Article by: B. Kanj

The Qatar Green building council (QGBC), a member of Qatar Foundation, has honoured 29 winners of fourth Qatar sustainability Awards 2020 in a ceremony held on 4th March 2020 at City Center Rotana hotel. The winners were announced at a special event held in the presence of a large number of dignitaries and special invitees.

The awards recognize the efforts, commitment, and contributions of individuals, institutions and organisations in furthering sustainable development and environmental protection in Qatar and the region and shared the experiences in this regard.

The QGBC awards cover a variety of categories including green buildings, green hospitality, green service providers, building products and technologies, green research and sustainability initiatives.

Consolidated Contractors Company (CCC), has been awarded the Green Contractor of the Year award for applying best environmental practices and best sustainability initiatives and innovations in projects implementation works.

The award was received by Oussama El Jerbi, General Manager Qatar, Bassel Kanj, Environmental Manager and Saji Khoury, Business Development Manager. They all expressed their delight for winning this award that reflects CCC's commitment to the environment and green building.

The director of QGBC, Meshal al-Shamari said: "The Qatar Sustainability Awards is the culmination of the year round efforts of a growing base of stakeholders from the public and private sector and reflects the diversity of initiatives and achievements of an environmentally conscious community". The entries for the award were reviewed and scored by an expert jury, including senior sustainability and green building experts, professional practitioners, and academic researchers.

From about 100 entries submitted for Qatar Sustainability Awards 2020, a total of 29 winners were selected for their sustainable and innovative efforts in their respective categories.

Our sustainability report describes the percentage focus for integrating sustainability when performing our business activities, how we deliver our sustainability services including the company's sustainability construction guidelines and checklist, how to monitor business partners for sustainability knowledge and education through building green culture in the company. Also the report demonstrates our sustainability collaborations and engagement in Qatar and beyond and how we are practicing the green internal strategies focusing on the innovative techniques for a sustainable built environment. Also the report list the green building mega projects that are completed recently by CCC in Qatar and beyond and the projects which are still managing aiming for certification.



2020-2025 CCC Sustainability Strategy

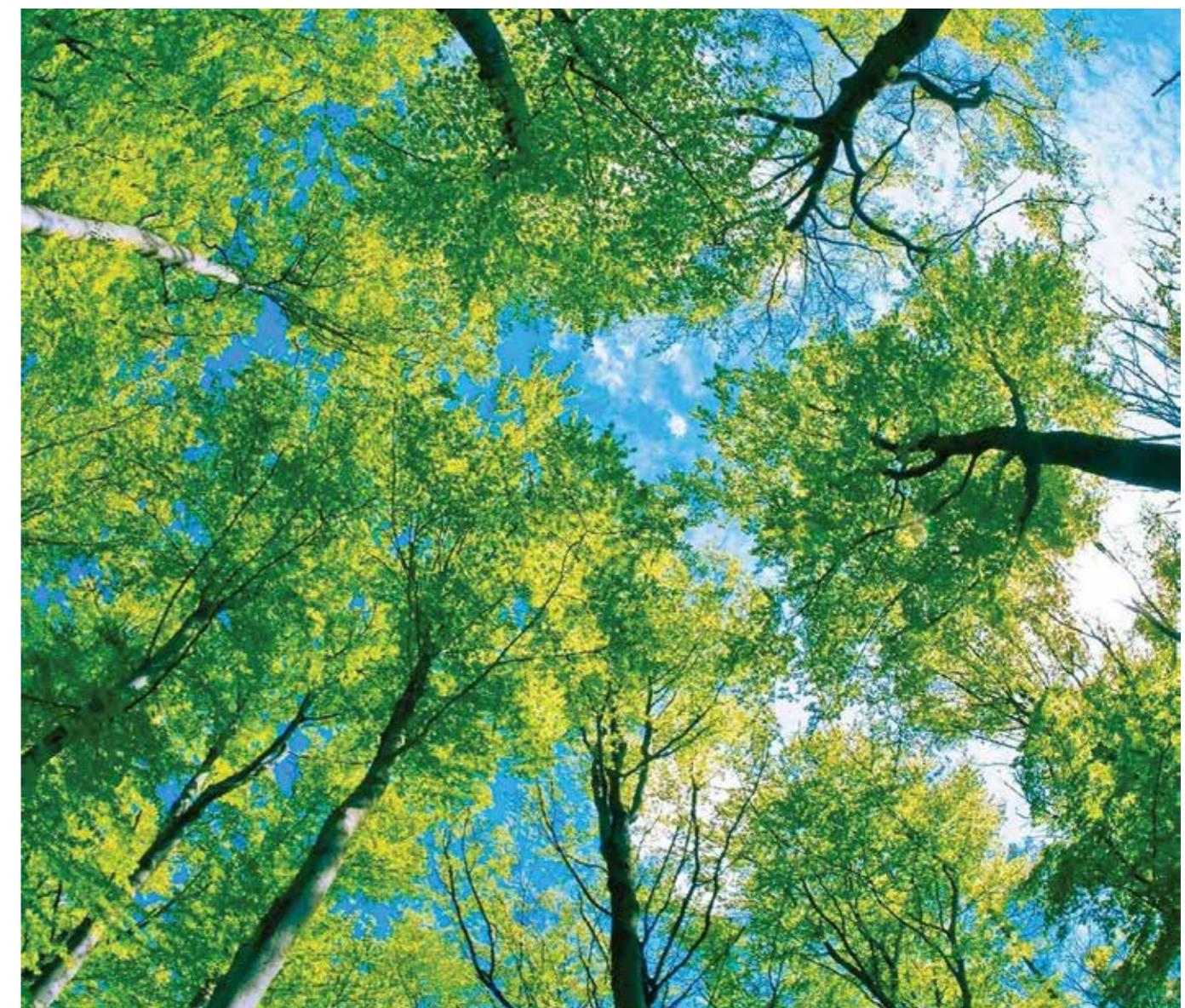
Article by: S. Thabet

CCC is on track to integrating sustainability into all our business activities. Our operation assessment allows us to identify and prioritize activities that address our direct environmental and social impact and explore opportunities where we can make a difference where we operate.

Our [Sustainability Strategy](#) is based on the three pillars of sustainable development: economy, environment and society.

We strive to align our strategy with the Sustainable Development Goals (SDGs), a call to action set by the United Nations General Assembly in 2015 to protect the planet and ensure that all people enjoy peace and prosperity.

CCC's vision is to foster a culture of sustainability that promotes economic prosperity, environmental benefits, and social value all geared to increasing our positive impact on the world.





Al Bustan North Street Project

2nd CCC Sustainability Competition

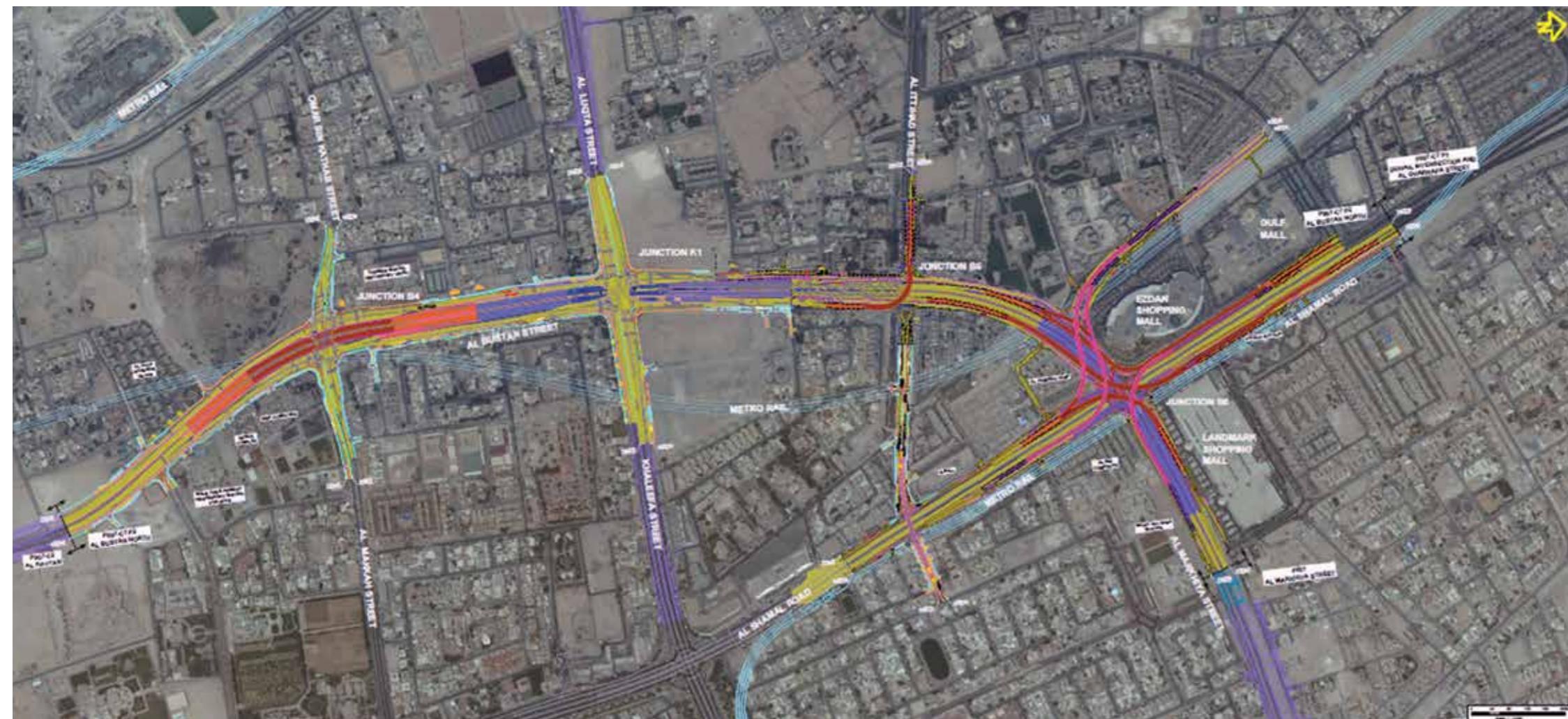
Article by: B. Kanj

BSNP Management and staff are fully committed to achieving highest environmental standards, satisfying legal requirements and limiting the environmental impact of its activities. To achieve this commitment, BSNP Management is also putting special emphasis on sustainability practices during the construction phase.

The BSNP had participated in the second CCC sustainability competition and was honored the highest prize. The evaluation process focused on the efficiency of cost effective measures in delivering sustainability objectives and savings in energy, water and greenhouse emissions, recycling waste and reuse of material clearly supported by facts and figures.

As a result, the ranking and winners are:

WINNERS			
PROJECTS & CAMPS	AREA	SCORE (%)	RANK
Al Bustan North Street Project - Qatar	Qatar	98.7	1st



SUSTAINABILITY: Al Bustan North Street Project: 2nd CCC Sustainability Competition

Following summary of below applying best sustainable practices in project implementation works.

- **Use of energy efficient HVAC** energy efficient air conditioning and electric heating system on project has help to ensure optimal energy consumption which lead to reduction in carbon emission approximately 234.368 metric tons of CO₂.
- **Use of Synchronized Powerhouse** running multiple generators in parallel condition on project has increased the load bearing capacity of powerhouse as well as the system voltage and frequency is operating with less deviations to increases energy saving and sustainability of powerhouse.
- **Use of milled asphalt waste material** for site temporary road access instead of bringing water through tankers from external sources away from the project site to reduce air pollution, fuel consumption reduction and dust emissions reductions. This initiative indirectly helps reducing CCC's CO₂ emission reductions by offsetting approximately 660.386 metric tons of CO₂ emissions into the environment. The waste is also considered as recycled material and reused on site instead of disposal off-site into a landfill.
- **Reuse of crushed concrete waste** with other suitable material for permanent works instead of offsite landfill disposal. This green initiative resulted into diverting the waste concrete going to offsite landfill and helped reducing the project's CO₂ emission reductions by offsetting approximately 278.392 metric tons of CO₂ emissions.
- **Reuse of slurry spoil material** with other suitable material for backfilling and road works instead of offsite disposal into landfill. This green initiative contributes in the project's CO₂ emission reduction by offsetting approximately 113.949 metric tons of CO₂ emissions.
- **Reuse of water from site drinking water station** for dust control to reduce air pollution and fuel consumption for tankers which lead to less CO₂ emissions instead of procuring water from external sources. This water conservation initiative program will save water demand from external sources & will lead to potential CO₂ emission reduction on transportation and fuel consumption by offsetting approximately 2.752 metric tons of CO₂ emissions annually.
- **Recycling of plastic waste** (barriers) to avoid offsite landfill disposal.
- **Reuse & recycling of metal waste** for site works instead of offsite disposal and procuring construction raw material from external sources.
- **Reuse of excavated material** as crushed aggregates and fill material for sub grade, sub base & backfill. This deployment of in-house processed material is contributing to economic benefits and will help achieving the environment and sustainability goals.

CCC Projects

Article by: R. Nasser

Contribution to CSR Initiative

CCC Staff are encouraged to come up with ideas and activities related to CCC's CSR Initiatives including [Going Green](#) and community involvement events. Please send your ideas, initiatives and achievements to "CSR-CCC" email address csr@ccc.net.

CCC and Alfanar Partner to Create Sustainable Livelihoods for Women Farmers in Upper Egypt, and Contribute to Egypt's 2030 Sustainable Agricultural Development Strategy

In 2019, CCC in partnership with [Al Fanar](#) implemented a corporate social responsibility (CSR) initiative to create sustainable livelihoods for women farmers in Minya, Upper Egypt. The project to assist women farmers trained 450 female farmers from 9 villages in Minya, and 8 Ministry of Agriculture Engineers to act as Farmer Field School instructors to ensure that the best practices are transmitted by the government to farmers in other villages. The project also assisted a group of 50 women farmers who wished to establish farming businesses, by training them on business planning, bookkeeping, marketing, profitability, and risk management.

The women farmers received training in best practices in agricultural and farming techniques and business skills, thus helping them improve their economic status by earning more income from their crops and livestock. They were also trained in a range of soft skills, and important social and public health topics, including relationship management, early marriages, domestic violence, child labor, problem-solving, communication, anger management, oral health, family planning, and prenatal care.

Furthermore, the Farmer Field School and Farmer Business School curricula were digitized so that the project can be scaled more efficiently to other communities in Egypt, and eventually across the MENA region. The curriculum can be accessed through an Android-based app on mobile phones and tablets, and can function without access to the internet. Unexpectedly, the outbreak of the COVID-19 crisis has since revealed the great value of this innovative digitized program, enabling women farmers to continue learning and enhancing their productivity throughout the current crisis.

With 65% of Egypt's economy reliance on agriculture, the need to modernize Egyptian farming and create dignified jobs for women in Egypt's rural communities has never been greater. The results of this project demonstrate how **CCC and Alfanar's partnership is at the cutting edge of the response to this great social and economic need.**



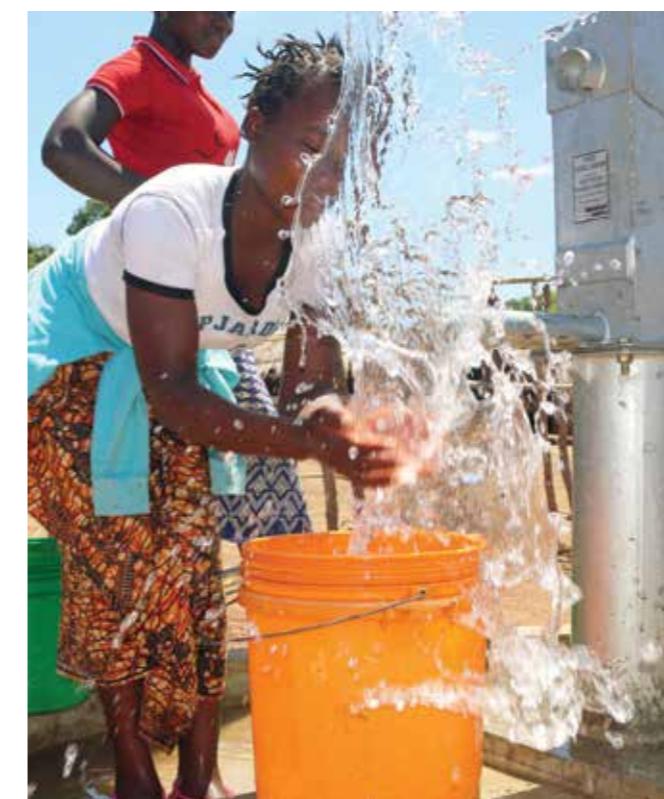
CORPORATE SOCIAL RESPONSIBILITY

In Partnership with WaterAid, CCC CSR Project Brings Water for the Village of Mulinda, Mozambique

To improve the living conditions of the 750 residents of Mulinda village, CSR, in 2019 partnered with [WaterAid Mozambique](#) to provide them with access to clean water, safe sanitation and good hygiene practices. Before the project, women and children traveled 8 kms to bring water from a contaminated river, and sometimes had to make three trips a day. As a result, this decreased the children's school attendance and reduced time available for income-generating activities.

A borehole was built with a hand pump, two water quality assessment were carried out, and a water committee was formed and trained on the management and maintenance of the borehole. Furthermore, to promote and insure change in hygienic behavior, WaterAid carried out door- to door household visits to raise awareness, which resulted in 110 families adopting good hygiene practices such as building their own latrines, dish racks, installing hand wash facilities and putting in place garbage pits.

The successful completion of the project has positively impacted the lives of people in Mulinda village. Access to clean water will mean a significant improvement in their lives as women will have more time to devote to production and children will spend more time at school. In addition, hygienic awareness amongst the community will result in better health and the decrease in the occurrence of water-related diseases.





CSR: CCC Projects

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Unplugged Program in Palestine



With partial support from CCC, [Mentor Arabia](#) in coordination with the Palestinian Ministry of Education and Higher Education launched its Unplugged International Program for the Prevention of Drugs in Schools. The project aims to enhance the "life skills" of adolescents aged 12 to 14 years old and provide them with the basic knowledge about alcohol, drugs and tobacco towards drug prevention. After the training and coaching of teachers in 15 public schools, the program was launched in September 2019 as a pilot project in the suburbs of Jerusalem and Ramallah, in schools located in the hot areas adjacent to the apartheid wall, and targeted 1,930 seventh and eighth grade students.

CCC and Employees are Always there in Times of Need



Lebanon Needs Our Help

In times of need, CCC and its employees have always stood by their brothers in the Arab world, and this time is no exception.

Your support, however small or big, will make a difference in relieving the suffering endured by the Lebanese people and help Beirut to rise again.

Donations will be distributed to the following NGOs :

- The Lebanese Red Cross
- Nusaned
- Offre Joie (فرح العطاء)
- Beit al Baraka

Together We Can Make a Difference

CCC will match the total funds donated by employees

The closing date for receiving contributions is [September 30, 2020](#)

For more information contact CSR at [CSR@ccc.net](#)

In response to the devastating and material damages caused by the August 4, 2020 explosion of Beirut port, CCC launched various donation and fundraising efforts to assist the victims of the blast in rebuilding their lives. The [Lebanon Needs Our Help](#) fundraising Campaign launched among employees and CCC matching funds raised more than \$110,000. Funds are being distributed to non-governmental Organizations such as the [Lebanese Red Cross](#), [Beit al Baraka](#), [Offre Joie](#), [Nusaned](#) and [Société de Saint Vincent de Paul Liban \(Mar Mansour\)](#) to rehabilitate damaged houses, and refurbish small businesses for the most vulnerable. Another component of the Campaign included a [donation drive](#) held among staff, their families and friends in [Lebanon](#). The collected

donations included home appliances, kitchen ware, curtains, bedding sets, rugs, and adults and children's clothes, toys were given to the same NGOs for distribution.

On another front, and in solidarity with the Lebanese victims CCC in [Qatar](#) and its staff participated in the "[Lebanon in our Hearts](#)" Campaign which was organized by the Regulatory Authority for Charitable Activities in partnership with [Qatar Red Crescent Society \(QRCS\)](#) and [Qatar Charity](#). As a result of the joint efforts between the CCC Area office and the employees, 150,000 QR was raised. All funds went to supporting food security, shelter, water, sanitation, and general and personal hygiene. In addition CCC donated funds to the [Friends of Lebanon](#) NGO to provide food parcels and hygiene products to 440 Lebanese families living in Beirut neighbourhoods impacted by the blast.

The extent of the devastation caused by the explosion was overwhelming and it came at a time when Lebanon was facing a severe financial crisis and a pandemic with no solution in sight. In times of need and crisis CCC and its employees have always stood by their fellow humans in the Arab world and in all areas of operation and this time was no exception.

Recycling of Used Books and Computers for the Purpose of Education and Saving our Environment

When You Put the Whole Picture Together, Recycling and Repurposing is the Right Way to Go

In support of CCC's sustainability efforts in construction, CSR in 2020 carried out various initiatives to lessen the burden on our environment by minimizing waste, recycling computers while at the same time benefiting the communities we work and live in. In [Lebanon](#), [Qatar](#) and [Greece](#) CCC initiated a book recycling effort where CCC staff donated 388 Arabic, English, French, and Greek books for children aged between 0-18 years old. The book recycling drive was coordinated with the Intercultural Center of the Greek Council for Refugees in Athens. The Center offers a safe place for refugee families and their kids and provides them with a wide range of educational and integration programs. The donated books will be added to the Center's library and will form, shape, encourage and most of all make the children dream of a better future for them and their families.

On another level, the CSR partnered with Thaki, an NGO that supports refugees, vulnerable children and youth in [Lebanon](#) and the Middle East with e-learning tools and skills. As a donor partner of Thaki, CCC collects from each Area of operation all unneeded functional laptops





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with their chargers, and Thaki will repurpose them and load them with rich educational content and tools from partners such as National Geographic, Oznoz and Little Thinking Minds. The laptops will be distributed to schools, orphanages and youth training centers, to help children access high-quality educational content while gaining digital literacy. In **Saudi Arabia**, CCC donated 40 unused desktops to Al Bunyan Charity in Riyadh to support the education and on-line learning program of orphaned children.

In the **UAE**, CSR invited employees to participate in the #TechForTrees Campaign, which called for planting a tree for every electronic device (smartphones, tablets, computers, laptops, headphones, game consoles) donated. Organized by Companies for Good, the donated electronic devices were repaired, cleaned from data, and were given a second life. The Campaign aims to protect our planet, fight climate change, stopped electronics from going to landfills and were given to people who could never afford it otherwise.

Giving is not About Making a Donation. It is About Making a Difference

Cathy Calvin

CEO and President of the United Nations Foundation

In 2020, CCC Qatar carried out two clothes donation drives and a Blanket Drive in cooperation with Qatar Charity. The donations were contributed to the Charity's Tayf Program which is an ongoing in-kind donation program that collects all kind of donations which are then sold and the proceeds are distributed to projects endorsed by Qatar Charity or given to those who are in need.



More than 70 boxes of clothes, shoes and accessories and a 100 blankets were donated by CCC's employees from the Area office, site offices, and project camps. CSR in Qatar aims to make this giving activity a permanent one by placing fixed give away boxes in different locations for the continuous collection of products simply because "things we don't need, others don't have."

The Seven Habits of Highly Effective People Presented by CCC Staff

As part of the cultural and intellectual activities that took place during Saudi Arabia's National Day, and under the patronage of the province of Bish in Jazan; Mr. Hassan Abu Sharha, CCC participated by giving a lecture on the seven habits of highly effective people. CCC's presenters included Mr. Fahad Al Eissa; Head of Administration, Mr. Makki Refai; Administration Manager, and Mr. Sulaiman Al Qahtani, Management Consultant.



Based on Stephen Covey's self-improvement book, the lecture featured information about personal and professional challenges, the relationship between employees' goals of achievement and personal development with the organisational structure, and its management. The presenters talked about the importance of

CSR: CCC Projects

social responsibility for businesses and CCC in particular and highlighted that social investment is one of CCC's most significant pillars. The interactive lecture was attended by representatives of various companies, including Aramco, government officials, and civil servants. The participants gained self-knowledge, the power to understand relationships, and the power to achieve the four levels of leadership: personal trustworthiness, interpersonal trust, managerial empowerment, and organization alignment.

CCC Supports Médecins Du Monde's (MdM's) Efforts in Yemen

CCC's financial support to Doctors of the World (Médecins du Monde/ MDM) assisted the organization to address cholera outbreak and provide equipment and materials to health centers in Yemen. With an estimated 20 million in need of humanitarian assistance, MdM activities in Yemen focus on ensuring the provision of primary health care services (such as routine immunization, nutritional screening and treatment of childhood illnesses) and tackling disease outbreaks including cholera and diphtheria. CCC's contribution was used during 2019, to support MDM's cholera response and provide equipment and materials to health centers.



CCC in Kazakhstan Sponsors the Atyrau Gymnastics Team

CCC in Kazakhstan sponsored the Atyrau Gymnastic Team's travel to participate in the Rhythmic L.A. International Competition of gymnastics that took place in Los Angeles in February 2020. The Atyrau Gymnastics Team won several gold and silver awards among an international participation of teams from Canada, Japan, Mexico, China, and the United States.



CCC Supports Qatar'S Plan to Combat Desertification and Drought

In November 2019, CCC participated in the inauguration of phase one of Qatar's Ministry of Municipality and Environment's (MME) plan to combat desertification. The aim is to preserve vegetation, rehabilitate green areas and cultivate land with local plants. CCC provided water tanks for the planting of seedlings of the rare Cordia Myxa plants and installed steel mesh fence for its protection. Qatar has joined other participating countries to observe the World day to Combat Desertification and Drought. In 2019, the theme focused on "Food. Feed. Fibers" theme that highlights the need to change public attitudes in relation to excessive human consumption and production patterns which are deemed main reasons for desertification and land degradation.





Related Activities for Staff and Community COVID-19

Article by: R. Nasser

CCC Stands with its Stakeholders and Global Community in its Fight against COVID-19

During the unprecedented and difficult months of 2020, CCC took measures first to protect the wellbeing of its staff and second, provide practical medical support to help communities in various parts of the world to confront the COVID-19 pandemic. The medical services in various communities where CCC operates have come under enormous pressure and CCC has come forward to support the international medical response and protect vulnerable people. Below are some examples of the support that CCC provided to its employees and the communities where CCC operates, through donations, financial support and volunteering.

▪ Community Awareness in Kazakhstan

Through CCC's Corporate Volunteering Program, Sanitary Doctor; Turganbayeva Zhanna, Ecologist Engineer; Beshakova Aigul, and Sanitary Doctor, Dina Karagoishina, volunteered their time to conduct a series of awareness seminars about COVID-19 to various companies and organizations. The seminars focused on the general concept and transmission of the virus, its etiology, its prevention, and its control. The seminars were given to the staff members of Tesla-Tan LLP, Caspian Medical, Madi Security Agency and the community at large. The volunteers also provided latest epidemiological situation in various parts of the world.



▪ CCC Volunteers Play a Major Role in Increasing Awareness and Protection in Saudi Arabia and Kazakhstan

In the effort to increase awareness about the importance of hygiene as a protection measure in the fight against COVID-19 pandemic, CCC volunteers packaged and distributed 300 hygiene boxes to workers and laborers in Riyadh and Al Khobar. The boxes contained face masks, sanitizers and gloves. The volunteering action aimed to increase awareness about the importance of cleanliness to stay safe and provide the tools to limit the spread of COVID-19 in the country.



In Kazakhstan, CCC volunteers packaged and delivered hygiene Kits to the Labor, Social Protection and Migration Committee of the Ministry of Social Protection in Atyrau. The hygiene kits included 50,000 surgical masks, 50,000 medical gloves, and a 100 bottles of antiseptic. CCC volunteers together with the ministry team were also responsible for the distribution of the kits to various regions of the country with special attention to the disabled who are already receiving help from the government.

CSR: [COVID-19 Related Activities for Staff and Community](#)



▪ Support to Hospitals and Medical Teams in Kazakhstan

With the global spread of COVID-19, and as the number of infected cases increased in Kazakhstan, CCEP management through its CSR coordinators and volunteers, shifted their attention to providing assistance to health care givers. In coordination with the Public Health Department and the Mayor of Atyrau, CCC donated 25 million Kazakhstani Tenge to support the medical teams who are the front-liners of the pandemic. The donated funds were distributed by the Department of Public Health to 634 health care workers across various medical organizations as bonuses in recognition of their efforts.



In addition and to support local hospitals in dealing with COVID-19 in the Atyrau region of Kazakhstan, CCC was one of 4 other oil service companies who donated funds for the purchase of ten sets of German-made ventilators.

▪ Camp Accommodation Facilities in Kazakhstan and Qatar Play a Role in Containing COVID-19

To support local authorities' efforts to combat the COVID-19 outbreak, CCC in Kazakhstan and Qatar offered their corporate camp facilities to medical personnel for accommodation, and quarantine needs. CCC Volunteers helped in setting up the rooms for the medical teams who came from different regions of the country.



▪ COVID-19 Testing Kits and Ventilators to Palestine, Jordan, Egypt, Lebanon and Kazakhstan

Recognizing the significance of diagnostic testing, CCC donated 60,000 testing kits to assist with the COVID-19 screening necessities in Palestine, Jordan, Egypt and Kazakhstan. Additionally, in Lebanon, CCC donated 5 ventilators to the Ministry of Health to support the most pressing needs of local hospitals, and 4 ventilators to Palestinian hospitals located near refugee camps to benefit vulnerable sections of society. *"Our efforts to overcome this unprecedented health challenge are on-going and by working closely with authorities and institutional bodies, we aim to ensure that our contributions are meaningful and timely"* said CCC's Chairman, Mr. Samer Khoury.





CSR: COVID-19 Related Activities for Staff and Community

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▪ Public Hospital Support in Greece

CCC donated a new intensive care unit with 5 fully equipped beds, pulmonary ICU diagnostics equipment to the **Thoracic Diseases General Hospital "Sotiria"**; the public hospital designated by the local authorities to treat patients with COVID-19.



▪ CCC Group Donates \$100K to Uzbekistan to Combat COVID-19

CCC through its associate company Sicon Oil & Gas, donated \$100K to the Uzbek diplomatic mission in Italy to support medical aid for COVID-19 efforts in Uzbekistan. The donation assisted the authorities to secure much-needed medical resources including masks, disinfectants, medicine, medical devices, personal hygiene products and protective equipment for front-line medical teams. According to CCC's Regional Managing Director, Hisham Kawash: "this action is a manifestation of our solidarity to support the efforts to fight the coronavirus pandemic in Uzbekistan."



CSR: COVID-19 Related Activities for Staff and Community

Employee Safety and Wellbeing During COVID-19

During the pandemic crisis, CCC maintains the safest possible conditions to protect the health and safety of its employees and their families, its subcontractors and all associates. CCC prepared an emergency plan to address safety of its employees, insure minimum work interruptions, as well as insure that projects' implementation are in accordance with the new safety guidelines. To ensure business continuity, remote working procedures for hundreds of CCC office staff have been implemented. For project sites, walk-through disinfection units, rotating shifts and converting face-to-face meetings to virtual ones are some measures that are being applied.

CCC provided employees with laptops and Virtual Private Network methods to access their office computers and documents without the need to go to the office. Work from home tools included virtual office phones where employees can make work calls and video conferencing from home. For employees who must be in the office, flexible working hours and time shifts have been scheduled in order to reduce number of people inside the office.

Management Change and Internal Communication Strategy

Before COVID-19 was officially announced as a pandemic by the World Health Organization (WHO), CCC began communicating factual, trusted, and actionable information to staff about the upcoming challenges and the safety measures in place to protect employees. When strict lockdowns were imposed on countries, CCC through emails from management and its intranet portal disseminated accurate news, company safety protocols, business continuity information, and leadership messages to employees. In some countries where work-from-home policies were adopted across CCC offices and many employees were experiencing remote work for the first time, digital resources were curated to support employees' productivity and build a sense of connection.

CCC's "Work Efficiently from Home" Bulletin was developed by IT to share expert knowledge and best practices for working effectively from home as well as sharing advice on resiliency, wellness and staying healthy. CSR developed and disseminated infographics on **"Staying Home and Staying Positive"** which included information and guidelines extracted from the World Health Organization and the Center for Disease Control and Prevention (CDC), on how to take care of the physical and mental health of staff and their children during the crisis.

STAY HOME, STAY CALM & THINK POSITIVE

Fear and anxiety about COVID-19 can be overwhelming and cause strong emotions. Coping with stress will make you, the people you care about, and your community stronger.

The below are key mental health considerations to minimize stress during your stay at home period:

take care of your Mind

- Minimize watching, reading or listening to news that causes you to feel anxious or distressed.
- Decrease use of social media including facebook, Instagram, and whatsapp groups that spread negative messages.
- Facts can help to minimize fears. Get the facts (not rumors) from trusted sources (WHO Website and local health authorities platforms).

take care of your Body

Create a daily routine for yourself and for your family that includes your time to work, play, and exercise, daily chores, and other activities you like to do.

- Take deep breaths, stretch, or meditate.
- Eat healthy, well-balanced meals.
- Exercise regularly - Learn simple daily physical exercises to perform at home, it reduces stress and increases immunity.
- Get plenty of sleep, and avoid alcohol and drugs.
- Make time to unwind. Do activities you enjoy.

take care of Others

Sharing facts about COVID-19 and understanding the actual risk to yourself and people you care about can make an outbreak less stressful.

- Keep regular contact with loved ones (e.g. via phone or other accesses).
- Protect yourself and be supportive to others. Assisting others in their time of need can benefit the person receiving support as well as yourself.
- Connect with others. Talk with people you trust about your concerns and how you are feeling.

Trust Positive

Source: World Health Organization (WHO), and Center for Disease Control and Prevention (CDC)

#covid-19 #covid19 #coronavirus #ccc-csr

STAY CALM & SUPPORT YOUR CHILDREN DURING CORONA TIMES



what to do to support your children

Play Calm - Children and teens react, in part, on what they see from the adults around them. When parents deal with the COVID-19 calmly and confidently, they can provide the best support for their children.

Talk - Take time to talk with your child or teen about the COVID-19 outbreak. Answer questions and share facts about COVID-19 in a way that your child or teen can understand.

Reassure your child or teen that they are safe. Let them know it is ok if they feel upset. Share with them how you deal with your own stress so that they can learn how to cope from you.

Limit Exposure to News - Limit your family's exposure to news coverage of the event, including social media. Children may misinterpret what they hear and can be frightened about something they do not understand.

Create Routines - Try to keep up with regular routines. If schools are closed, create a schedule for learning activities and relaxing or fun activities.

Be a Role Model - Take breaks, get plenty of sleep, exercise, and eat well. Connect with your friends and family members.

Excessive crying or irritability in younger children.
Returning to behaviors they have outgrown (for example, soiling accidents or bedwetting).
Excessive worry or sadness.
Unhealthy eating or sleeping habits.
Irrestibility and "acting out" behaviors in teens.
Difficulty with attention and concentration.
Avoidance of activities enjoyed in the past.
Unexplained headaches or body pain.

Source: Center for Disease Control and Prevention (CDC)

#covid-19 #covid19 #coronavirus #ccc-csr



CSR: COVID-19 Related Activities for Staff and Community

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CCC Builds Portable Intensive Care Units (ICU) In Qatar

In collaboration with the Connected Units for Respiratory Ailments (CURA) open source project, CCC built autonomous mobile ICU units on camp to support those who need immediate health care. The 15m² units are designed to be as safe as a hospital, as each unit is set up with negative air pressure, creating a "bio-confinement" environment that can restrict the virus from leaving the chamber. Each ICU consists of medical equipment and two beds. The Modular ICU units can be attached to Hospitals, or installed in remote areas projects/communities for fast health treatment.



The Units are designed to be reusable for other applications, once the emergency is over. They are fully functional and can be reused in CCC camps as training rooms, medical testing facilities or donated as safe classrooms in developing countries or medical wards in refugee camps.

Modular Disinfection Units in Qatar

CCC Qatar and by using the projects' existing resources, developed in-house modular and mobile sanitizing tunnels for the decontamination of employees. According to safety protocols, all employees and labor at site should pass through the tunnel before entering site and when leaving. The tunnel is made out of a container (6 meters) and a network of mist nozzles that creates an obligatory passage. In particular, it is equipped with: 25 mist nozzles on 8 sides that saturate the environment, water pump, water storage tank, antiseptic liquid, and liquid soap. The nebulization system is connected to a control system capable of automatically mixing the sanitizing product at percentages indicated by CCC Health and Safety requirements. Access to the tunnel is regulated by a traffic light using an automated motion sensor.



Sports Activities and Horticultural Therapy at Riyadh Metro Project (BACS); Two good ways of Relieving Stress, Saudi Arabia



To entertain and provide stress relief from the COVID-19 lockdown, CCC organized sports and gardening days. Many participated in the fun sports days that included cycling, running races, hitting the wicket pushup challenges. As for the gardening, the Camp Village management provided residents with various kinds of flowering plants, fruit bearing and aromatic and medicinal plants to work with and grow. Horticultural therapy is a well-known professional practice that uses plants and gardening to improve both the mental and the physical health.

On-Line Chess Tournament

During lockdowns and the mass shift to remote work, an online chess tournament was organized and carried out as an entertainment activity that would keep employees connected, support their mental wellbeing and preserve the company culture from a distance.





Volunteerism At CCC

Article by: R. Nasser

Corporate Volunteer Program

In support of CCC's commitment to serve those in need, and address issues that impact the quality of life of communities, the Corporate Volunteer Program (CVP) was established to encourage the culture of volunteerism and provide employees and their families with the opportunity to volunteer and to give back to the communities in which they live and work. Since its establishment, the Program has been initiated in 10 of CCC countries of operation, recruited 539 volunteers, and has benefitted more than 78,000 people to date.

Besides helping those in need, CCC realizes the value and countless benefits of volunteering on the mental and physical wellbeing of volunteers themselves, CCC has engaged its employees through various volunteering actions that target marginalized people in local communities and address the Sustainable Development Goals (SDGs) of the UN.

CCC Volunteers in Botswana Make a Difference

Since the establishment of CCC's Corporate Volunteering Program, Botswana heavily focused its voluntary activities on the needs of society. Community service voluntary work was conducted in the educational, environmental and health sectors which have positively impacted the local community. Below are some examples of the voluntary actions carried out:

Community Civil Works

- Building an earth dam in Tsietsamotswana Land to help the villagers with water collection and storage during the monsoon period. The initiative provided the community and nearby villages with access to water for their daily needs in times of severe shortage or drought.
- Building of two bridges in Bokaa village, to prevent the water from accumulating on one side of the road, and to allow it to go through to the other side of the road during the rainy season.
- Repair of the Palla Road Village primary school fence to avoid trespassing and to secure the wellbeing and safety of students.



Building of two bridges in Bokaa village

Education

- Carrying out a needs assessment of Nare Sereto School and fixing the school's IT system including its hardware and software. In addition, technical assistance to upgrade and repair the computers and printers was provided and CCC donated 15 swivel chairs.
- Hosting of St. Mary's English Medium Primary School students at CCC's Mamashia Water Treatment Plant (WTP) project. The students were given an informative tour of the project where they learned about CCC's history and involvement in engineering and construction projects in Botswana, and about the operation of the mechanical and electrical equipment installed in the WTP and the chamber piping works.
- Carrying out earth works around St. Bernard's Primary School's perimeter to prevent the school's campus from getting water clogged during the rainy seasons and which allow students and staff to continue their school year uninterrupted by the rain.
- Grading the football fields of Nareseretso Junior and Secondary School in Gabane, used for the school's sporting activities, as well as Gabane's community for various events.
- Grading and clearing 3 football fields in Bokaa village which were used by Tlaakgame Primary School students and by athletes to train for sporting competitions.



Hosting of St. Mary's English Medium Primary School students



Nare Sereto School

- Clearing and grading the playgrounds of Tirelo Primary School in Dibete village which were in bad condition and not fit for use.
- Levelling and grading the play grounds and sports fields of St. Joseph Primary School. The student's playing grounds were eroded and rock outcrops were visible in several locations.

Community Service

- Rehabilitating and closing down of a borrow pit (dumping yard) located in Pallaroad Village in the Central District of Botswana. The borrow pit was used for more than 20 years as a dumping site, causing some environmental issues for the community.
- Clearing debris and bushes on Poloka Road in Dibete to make firebreaks for the local community.
- De-bushing Ithuteng Junior, Mochudi Bridge and surrounding areas in preparation for the inauguration of the National Congress.
- Rehabilitating a borrow pit and turning it into a usable dam. The volunteering job was requested by the Tashys Royal Gardens; an events venue in Ramotswa, Botswana. In a letter of appreciation, the Managing Director of the Gardens; Mr. Tshepo V.E. Keakile said: "Thank you CCC Joint Venture management for allowing this to happen, you have really shown that your company not only brings development for profit but also have a heart which works towards building a "compassionate nation." You are indeed a compassionate company."



Rehabilitating and closing down of a borrow pit (dumping yard) located in Pallaroad Village

Being a signatory of the **United Nations Global Compact** (UNG) CCC uses the 17 Sustainable Development Goals of the UN Global Compact as its guide in developing corporate social responsible initiatives and volunteering activities to improve the social, economic, and environmental conditions in communities in which it operates. The volunteering activities in Botswana, have helped and benefited more than 17,000 people and have addressed the below listed Sustainable Development Goals:

- **Goal 3:** Good Health and Wellbeing
- **Goal 4:** Quality Education
- **Goal 6:** Clean Water, and Sanitation
- **Goal 9:** Industry and Infrastructure, and
- **Goal 11:** Sustainable Cities and Communities



CSR: Volunteerism At CCC

↳ continued from page 53**CCC Volunteers Against Hunger, Egypt, Oman and Kazakhstan**

On two different occasions; CCC volunteers contributed their time to the Feeding Program of the Egyptian Food Bank by packaging 1,700 food boxes for needy families. The feeding program provides food boxes to an average of 250,000 needy families and underprivileged people per month including the elderly, those who are unable to work and earn an income, orphans, widows and/or individuals suffering from chronic diseases. CCC volunteers felt proud and satisfied, in three hours of volunteering they helped 8,500 people. Junior Administrator, Fatma El Helaly said "*it was simply amazing, I would love to take part in similar events in the future.*"

In **Oman**, Accountant; Abeer Khamis, Civil Engineer; Ghassia al Rushaidi, and System Analyst; Afrah Al Zadjali from CCC's DMIA project in Oman, volunteered with Ata Taawon Volunteerism Group to package food supplies for distribution to 150 families in need and in Atyrau, and in **Kazakhstan**, CCC volunteers distributed food to 100 families during the Adha holidays.



CCC volunteers contributed their time to the Feeding Program of the Egyptian Food Bank



Volunteering with Ata Taawon Volunteerism Group



Kazakhstan

CCC Volunteers Protect Kulsary Residents from Potential Flooding in Kazakhstan

It took 10 days, 18 CCC employees and 376 hours of their volunteered time to build and install dikes along the edge of the four kilometer long Kamyskol Lake to prevent it from overflowing and flooding the land and houses of the residents of Kulsary. Every year in March, layers of accumulated snow melts and causes massive flooding endangering hundreds of the residents living around the lake. Volunteers included CCC engineers, surveyors, logistics, laborers, and foremen who worked together to address the recurring flooding issue and protect Kulsary's community.

**CCC Joins the Nationwide Environmental Campaign in Kazakhstan**

Seventy seven CCC Volunteers in Kazakhstan including its Area Manager, Mr. Hisham Kawash, joined the national tree planting campaign to plant 500 trees in and around the CCC Camps in Atyrau, and Tengiz. Initiated by the Ministry of Ecology, Geology and Natural Resources, the Campaign aims to plant one million trees across the entire country. Environmentally, planting trees has the function of absorbing carbon dioxide and potentially harmful gasses, such as sulfur dioxide, carbon monoxide, from the air and release oxygen. Three hundred trees were planted in Atyrau, and 200 hundred trees in Tengiz. The decision to join the campaign stems from the Company's commitment to social, economic and environmental sustainability of communities where it conducts its business.

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Financial and Humanitarian Aid to the Victims of Flood in Kazakhstan



CCC provided financial and humanitarian aid to the victims who lost their homes due to the flooding caused by the breakage of a dam in Kazakhstan. An area of 276 square kilometers including 10 settlements in Turkistan, South Kazakhstan was flooded and around 30,000 people had to be evacuated. CCEP Management donated 100 metal beds, mattresses, pillows, blankets, and chairs and CCEP staff volunteers; Myrzabek Bakhtiyar IT Support Engineer, and Yousef Hanafi Camp Administrator worked tirelessly to organize the logistics, collect and distribute the furniture and the bedding.

A Day of Learning and Giving at the Innovative Park of Earth Organization, Athens, Greece

Athens based volunteers and members of their families visited [Organization Earth](#) to learn, give and contribute to a sustainable way of living at the Organization's "Center of the Earth"; a 25 acre environmental park. The Center proposes a new way of interface between the economy, society and the environment, making it a living example of a sustainable way of thinking for a healthy, viable planet.

The volunteers cooked 200 healthy meals for socially deprived persons, refugees, and the homeless, learned a few planting techniques such as how to crop plants, prune trees and edgings and planted seasonal vegetables in the Park's vegetable garden. Furthermore, they had the opportunity to visit the Center's composting lab where they learned how to make organic fertilizers from food waste, and how to grow healthy plants without using agrochemicals.



Computer Skills Teaching for Refugee Youths, Athens, Greece

Electrical Estimation Engineer, Ghada Saoudi spent five weeks teaching computer skills to refugee youths at the Social Hackers Academy in Athens. The Academy's aim is educate social vulnerable groups in digital skills, and integrate them into the economic and social fabric of the society. Besides providing coding, web development and basic computer skills, it organizes career days with tech companies to introduce their graduates with potential employers.

When asked about her volunteering experience, Ms. Saoudi said: *"I was impressed by how motivated and how committed the students were to learning and building a better future for themselves and their families. This experience taught me the spirit of giving and I felt I am making a difference. The strong ties I built and the rewarding experience were priceless."*



CCC Volunteers Bring the Christmas Spirit to a Children's Shelter Home, Athens, Greece



CCC volunteers participated in the decoration of a children's shelter home run by the [Smile of the Child](#) welfare organization. The shelter home houses 23 children of various ages and social problems. By decorating the whole house with Christmas ornaments, the volunteers brought the Christmas spirit, joy and warmth into the hearts of those less advantaged children who came home from school to find a joyful surprise.

CCC Volunteers Brighten the Day of Orphan Children, Kazakhstan

The more joy, encouragement and positive reinforcement orphaned kids are exposed to the better and brighter their future will be. CCC volunteers in Kazakhstan visited the Children's Village Youth House orphanage in Atyrau where they spent a couple of hours at the orphanage which houses 60 children of all ages, playing various games and singing with them. The volunteers also provided the kids with New Year gifts donated by CCC. Volunteering with children is a highly rewarding experience especially those who are vulnerable.





CSR: Volunteerism At CCC

continued from page 57**Beach Clean UPS in the UAE, Qatar and Saudi Arabia**

To increase awareness about the importance of protecting our environment three beach-cleanup volunteering activities were organized in the UAE, Qatar and Saudi Arabia. Beach clean-ups are essential as they can improve coastal and ocean ecosystems by ensuring that none of the waste kills marine life or is toxic enough to disrupt the marine life cycle.

In Qatar, on two different occasions, CCC volunteers and their families cleaned up Zakaret Beach and Al Jumail beaches. In Zakaret, the volunteers packed 75 bags of trash including plastic bags and bottles, glass bottles, wire ropes and fish nets. The activity was organized with the Doha Environmental Actions Project; an environmental volunteering NGO leading the effort to reduce plastic pollution and carry out beach cleanups in Qatar to restore their natural beauty.

The Al Jumail beach clean-up activity was organized with the Doha Environmental Actions Project (DEAP), where a group of CCC Al Bustan Street North Project (BSNP) staff and their family members spent their day off to clean-up Al Jumail Beach. The CCC volunteers who were also joined by other volunteers, collected more than 850 kilos of waste and trash including plastic bags and bottles, glass bottles, wire ropes and fishing nets from the coast line.



In the UAE, volunteers from various departments, participated in a beach cleaning activity in Das Island organized by the Abu Dhabi National Oil Company (ADNOC). In Saudi Arabia, in cooperation with the Municipality of Khobar Governorate, CCC volunteers were joined by Khobar's municipality members, cleaned up Al-Azizia Beach in Khobar.



CSR: Volunteerism At CCC

**CCC Volunteers Spread and Receive Joy at the Association of Early Intervention for Children with Disabilities, Oman**

Oman's CCC staff members volunteered at the [Association of Early Intervention for Children with Disabilities](#) to spread joy among kids. The volunteers were joined by three employees of CCC's Joint Venture Partner, Shapoorji Pallonji Middle East. The Association addresses the rehabilitation of disabled children from birth until the age of nine, caters to their social and psychological needs, and provides them with life skills to prepare them for integration into regular schools.

The volunteers participated in entertaining activities for 60 children aged between 3 and 12. While some volunteers helped with organizing the fun activities, others helped in the decoration of the space, and they all danced with cartoon characters, did some face painting, and set up a small studio-like area to take photos of the kids with cartoon characters. The volunteers also donated money to the Association to help them set up a new section for hearing-impaired kids. The volunteering experience imprinted a rewarding experience in the hearts of volunteers.

CCC UAE Laborers' Graduation, UAE

Nineteen CCC students enrolled in SmartLife's 2019 Smart Reading Program graduated after attending an English language course to improve their communication skills. The course was delivered by SmartLife, an NGO which focuses on the betterment of blue collar workers. CCC is proud to contribute to the personal development of its workers by enhancing their English language skills, their confidence and self-esteem in having acquired a new skill.





CCC's Metro Station Project Awarded Dual Green Building Certification Award

↳ January 2020 [🔗]



CCC to Donate Coronavirus Testing Kits

↳ April 2020 [🔗]



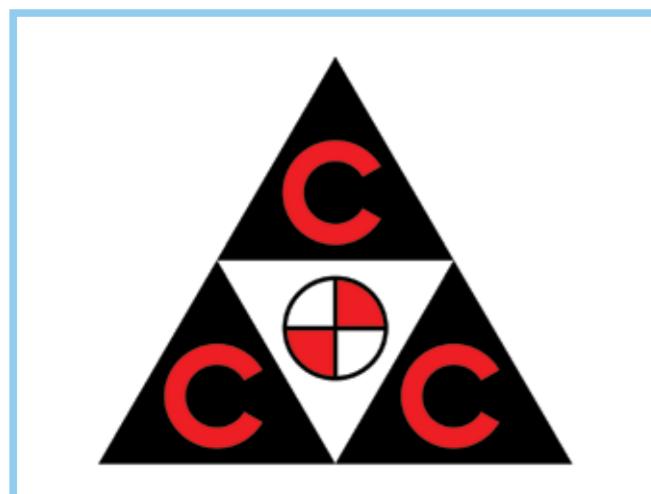
CCC Wins Green Contractor of the Year Award

↳ March 2020 [🔗]



CCC's Health Interventions for COVID-19

↳ May 2020 [🔗]



CCC's Response to COVID-19

↳ March 2020 [🔗]



CCC Group Donates \$100K to Uzbekistan to Combat COVID-19

↳ May 2020 [🔗]

↳ continued from page 61



CCC Releases 2020 Sustainability Report

↳ July 2020 [🔗]



Inauguration of a New Intensive Care Unit (ICU) Donated by CCC to Combat COVID-19 in Greece

↳ December 2020 [🔗]



CCC Collects Multiple Awards at MEED Project Awards

↳ December 2020 [🔗]



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