

BULLETIN

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COVID-19's IMPACT

on CCC's Current and Future Projects

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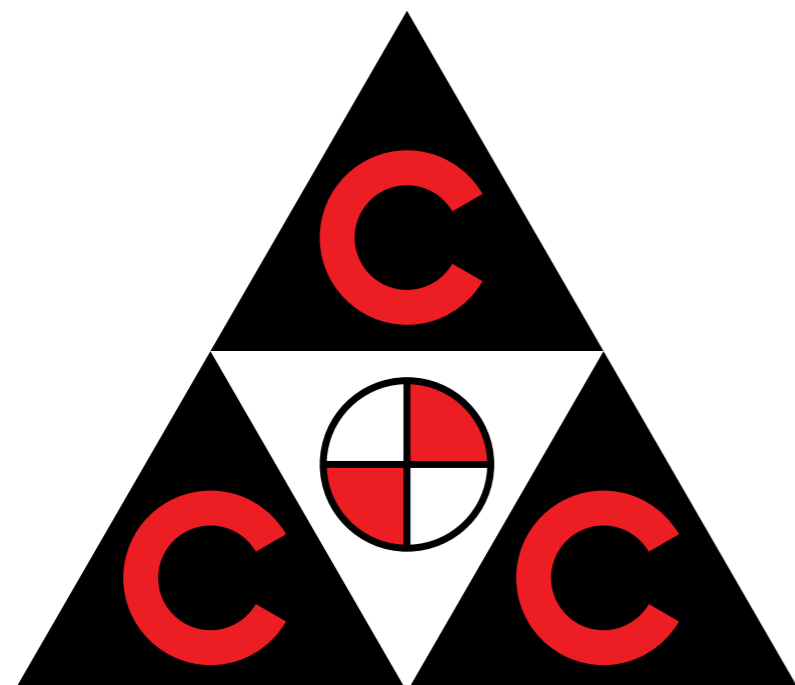
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FROM THE DESK OF ...



SAMER S. KHOURY
Chairman

Adapting to Change

Humans and corporations are naturally resistant to change, however, history has taught us that civilizations that do not embrace change are left behind.

The above is very relevant to our world today for us, as individuals, and for CCC as a successful entity.

As a result of COVID-19, we are facing a huge shift in our world, be it geopolitically, economically, technologically advanced, climate change as well as social development related to injustice and unemployment.

My message to the CCC Family is that we have to learn to live with these changes and adapt quickly to the new norms.

While my message to CCC's new Management is that CCC has been very adoptive in the past by swiftly changing course to adapt to market trends, I am certain that the entire CCC Family will do the same and steer CCC into prosperity while making it more resilient to face present and future challenges.





RECENT AWARDS

SAUDI ARABIA
King Salman Park - Main Tunnels & Bridges Project

Award Date: March 2021
Completion Date: February 2023 (24 months)
Client: King Salman Park Foundation and the Owner is Royal Commission for Riyadh City (RCRC).
Consultant: Omrania



Project Brief and Scope of Work

King Salman Park in Riyadh will be the biggest city park in the world.

This contract involves the construction of three cut & cover tunnels of a total length = 2,470 m (T1 = 765 m long, T2 = 125 m long & T3 = 1,580 m long) and two bridges (Boulevard Bridge # 05 = 44 m long and 41 m wide & land bridge # 06 of 138 m long and 60 m wide) with circa 966,690 m³ of general excavation, 1,010,249 m³ of backfill. Circa 390,000 m³ of concrete for structures and 80,000 tons of steel reinforcement.

The scope also includes all associated traffic diversion roads (4 km), demolition, utilities, MEP, ventilation, road furniture and tunnel wall cladding.

EGYPT
50 MWP PV Plant in Zafarana

Award Date: December 2020
Completion Date: April 2022 (12 months)
Client: New & Renewable Energy Authority (NREA)
Consultant: GOPA-INTEC, Germany



Project Brief and Scope of Work

EPC works for the 50 MWp Solar Plant and Grid Interconnection works (including 8 km of 22 KV buried cable (4 circuits) and one (1) Substation 22/220 KV with 125 MVA TF), and O&M for 5 years following COD.

OPTIONAL

- 20 years O&M following the first 5 years O&M.
- **Warranty period for contract:** 72 months, following COD.
- Extended Warranty period of 20 years following of the first 5 years of O&M (in case of option is executed by NREA).

QATAR
Design, Supply, Installation and Commissioning of LGV Expansion Project

Award Date: December 2020
Completion Date: August 2021 (9 months)
Client: Shaqab Abela Catering Services Co. W.L.L.

Project Brief and Scope of Work

Building and commissioning of additional temporary accommodation for up to 4,000 persons in Ras Laffan Industrial City: Camps 3, 4, 5 & 6, including but not limited to: Plant, material, manpower, supervision, installation, temporary works, plumbing and drainage works and all associated services.

QATAR
Engineering, Procurement, Construction and Commissioning of Pioneer Camp for the North Field Expansion (NFE) Project

Award Date: April 2021
Completion Date: August 2022 (15 months)
Client: Qatar Petroleum (QP)



Project Brief and Scope of Work

Engineering, procurement and construction of:

1. NFE Pioneer Camp Facility for 6,080 occupants (junior & labour) including 44 accommodation buildings, 23 common buildings and associated infrastructure & external works (BUA: 61,341 m²).
2. SHES Synergy Facilities on lot W17 including training centre, medical centre, badging office, three toilet blocks, coffee shop and mosque (BUA: 4,608 m²).
3. Company Field Operations Complex (FOC) on lot W17 including FOC building 2 and mosque (BUA: 2,520 m²).
4. Additional optional works to be exercised within 3 months:
 - ↳ **Option 1:** FOC building 3 on lot W17 (BUA: 2,380 m²).
 - ↳ **Option 2:** FOC food service building on lot W17 (BUA: 1,344 m²).

Remote Audits

Guidelines, Considerations, Enabling Technologies, Lessons Learned

Article by: A. Papadopoulos

Remote Audits

Quality Management System audits have been a key requirement of ISO 9001 since its original release. In cases where safety constraints or particular restrictions are in place, it may not be possible or practical for an auditor -and the audit team- to conduct the audit 'in-situ', i.e. face-to-face on the physical location demanded by the work. **Remote auditing** is hence a valuable method, which provides flexibility for achieving the audit objectives. Due to the current COVID-19 pandemic in particular, the implementation of remote auditing has lately been enhanced.

During 2020, CCC's Construction Support & Quality Management department has commenced conducting remote audits in key projects. In the period **from June 2020 to March 2021, six (6) QMS remote audits have been conducted**, with wide participation and successful outcome, as perceived by the auditees themselves, the auditors, and the audit results.



CCC AROUND THE WORLD



Guidelines for Remote Audits

About a year ago, the [ISO 9001 Auditing Practices Group](#) published its main guideline:

- "Guidance on: Remote Audits"(2020)

This document, together with:

- The International Standard "Guidelines for Auditing Management Systems"(ISO 19011:2018 Annex A1); and
- The International Accreditation Forum (IAF Inc.) "Mandatory Document for the Use of Information and Communication Technology (ICT) for Auditing/Assessment Purposes"(IAF MD 4:2018)

have allowed auditors to objectively assign audit criteria, circumstances, cases, risks and necessary ICT infrastructure to determine the feasibility of a remote audit, and plan ahead for its effective conduct, with consideration for confidentiality, data protection and data security.

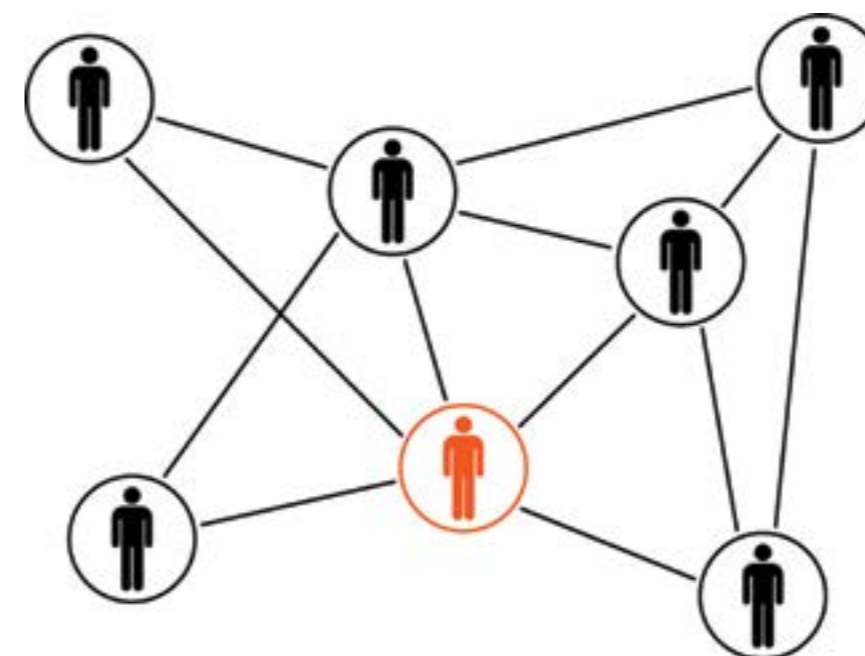
The Quality Management Procedure for "Quality System Audits" (QMP-MOA-016, rev.12) was revised in May 2020 to incorporate remote auditing and relevant actions. (It is noted though that 'remote' auditing is a method that may be used by any department performing audits to its processes - individually or jointly.)

What is the definition of a remote audit?

Remote audits refer to using information and communication technology (ICT) to gather information, interview an auditee, etc. when "face-to-face" methods are not possible or desired. ¹

As per ISO 19011, there is a range of methods for performing quality system audits, depending on the physical location of the Lead Auditor and the Auditee:

- On-site:** On-site audit activities are performed at the location of the auditee (Note: this is synonymous to 'on-location')
- Remote:** Remote audit activities are performed at any place other than the location of the auditee (regardless of the distance).
- Combination:** A combination of 'On-site' & 'Remote' audit activities by the Lead auditor and/or the Audit Team.



Interestingly, an important clarification made in ISO 19011 A.16 is between remote audits and auditing virtual locations. Auditing of a virtual location is sometimes referred to as "virtual auditing", i.e. audit activities on a virtual environment. ²

Note: A virtual environment may be composed by digital and/or non-digital activities using technological assets (software, hardware, sensors, PLCs, automated devices) taking some or all decision(s) in the process(es).

As an example, an automated welding fabrication shop may have robotic machines doing automatic welding production processes but also people doing manual welding processes. The decisions on the production processes made by computer-software or by people are equally important; their assumptions, criteria and certain features can be examined.



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Remote Audit Risk Assessment

Prior to any remote audit, the Lead Auditor shall carry out a risk assessment regarding the effectiveness of this particular method and the use of information & communication technology (ICT). Relevant risk assessment criteria are highlighted in the accompanying figure:

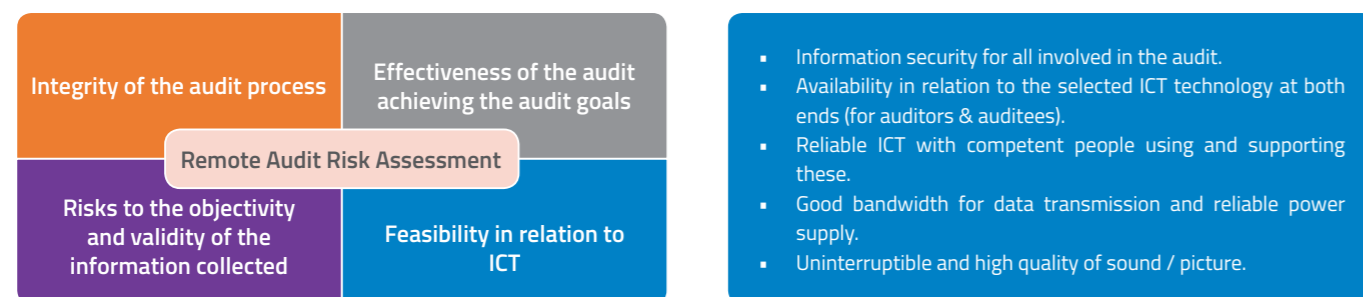


Figure: Relevant risk assessment criteria

Remote Audit Criteria, Circumstances and Cases

Suitable criteria for deciding on conducting a remote audit are:

- i. Availability of the necessary infrastructure to support the use of the ICT proposed (e.g. data security, data integrity, media equipment, bandwidth, etc.)
- ii. Systematic implementation of the Quality Management System where records, data, etc. can be reviewed even remotely, despite where the work is being performed.
- iii. A demonstrated track record of conformance at the location of the remote audit (e.g. minimal non-conformances).
- iv. Low risk level for the stated audit scope.
- v. The Lead Auditor's experience and familiarity with the QMS being implemented on location.

Remote Audit Planning: Additional Considerations

Remote Audit planning should include:

- Determining the ICT platform (i.e. MS Teams, Skype for Business, Zoom, WebEx, etc.) for hosting the assessment, to be agreed by A.O., Lead Auditor and Auditee's Management.
- Proper security measures should be taken to protect confidential information, as applicable.
- Testing platform compatibility between the Lead Auditor and the Auditee prior to the Audit date.
- Encouraging and considering the use of cameras at both ends and other suitable devices per the audit scope, when physical evaluation of an objective is desired or necessary.
- Time zone acknowledgement and management to coordinate reasonable and mutually agreeable convening times.



Information and Communication Technology (ICT) during Audits

ICT is the use of technology for gathering, storing, retrieving, processing, analysing and transmitting information.³ It includes software and hardware such as smartphones, handheld devices, laptop computers, desktop computers, video cameras, autonomous vehicles, wearable technology and others. The use of ICT may be appropriate for auditing/assessment both locally and remotely.

Information and Communication Technology (ICT) allow for auditing sites and people remotely, reducing costs, travelling time and the associated environmental impact of travels. ICT also offer the opportunity for adapting audits to diverse organizational models and topologies. Examples of the use of ICT during audits/assessments may include but are not limited to:

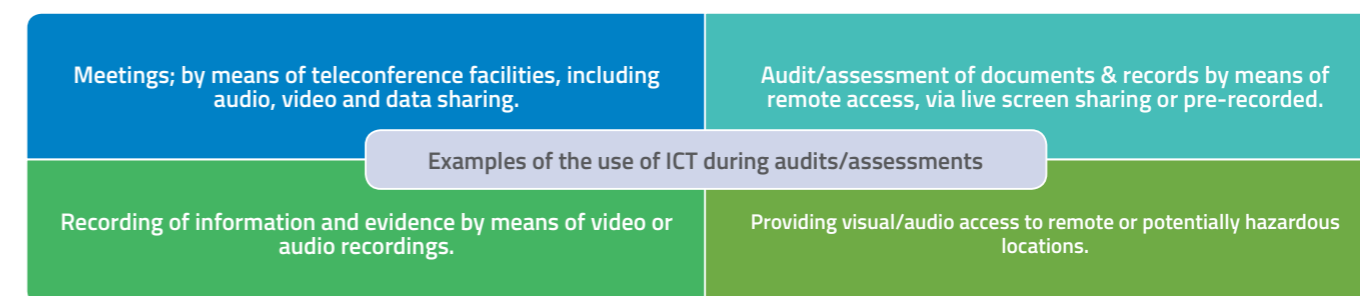


Figure: Examples of the use of ICT during audits/assessments



- ICT can help to increase the size or quality of sampling in the audit process, when prepared, validated and used properly.² This is the case, for example, when using special video equipment to verify physical characteristics such as pipe parameters in the petroleum industry.
- Use of ICT also allows for the inclusion of expertise in an audit that otherwise might not be possible due to financial or logistical constraints.² For example, the participation of a technical expert may only be needed to analyze a specific project for only two (2) hours. With ICT available the technical expert may be able to analyze the process remotely, thereby reducing time and costs associated with travel.

Examples of limitations and risks posed by ICT in the fulfilment of audit objectives:

- When planning for a remote interview, will there be a stable internet connection?
- Does the auditee know how to present the needed audit scope?
- Can the facilities, equipment, operations, controls be viewed satisfactorily?
- Is relevant information accessible?

Ironically, such questions can only be answered if the auditor is already familiar with the site, which is why meticulous planning is essential.



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Lessons Learned from remote audits in CCC Projects - reported by CSQM Auditors

Lessons Learned from performing 'remote' audits in six (6) of our Projects are presented in the accompanying table. This recent experience attained by CSQM Auditors has also proven useful when CCC's Quality Management System was recently audited remotely by external parties for our ISO 9001 recertification.

HUMAN INTERFACE ASPECTS	COMPUTER INTERFACE ASPECTS
<ul style="list-style-type: none"> ▪ Establishing Rapport: It is recommended during the start of the Remote Audit session that Auditors and Auditees present themselves initially with the camera 'on', to establish the audit relationship and enhance communication and empathy between the audit parties. This is especially recommended when they parties don't know each other and have not met before. ▪ Facilitation: It is recommended that an experienced Auditee acting as the 'on-location facilitator', attends all the Remote Audit sessions to assist other Auditees for any practical issues faced during the remote audit (such as administrative tasks, avoiding delays, on-screen presenting of files & records & systems, clarifying, etc.). ▪ Multiple Auditees: Being able to audit multiple auditees on their workstations at the same time can lead to more insightful discussions and observations. 	<ul style="list-style-type: none"> ▪ ICT platforms, features & selection: All ICT platforms that have been utilized in Remote Audits until now have worked well (i.e. Skype for Business, MS Teams, Zoom). Different ICT platforms offer distinct features and the Auditor must be aware of these. Free versions should be avoided for various reasons (e.g. due to limit of participants, time limit, security), although some Auditees may need to use other versions on their mobile when outside on the field. ▪ Audit Recordings: Availability of recording of the audit via ICT is useful. Keep in mind that screen capture differs between ICT platforms (i.e. screen may switch or remain active depending on the person actively talking). ▪ Panoramic View: When in external areas, it is a good practice by the Auditee to use the camera of the ICT medium (mobile, tablet) to first present an overall view of the area and then slowly move the camera to the designated locations.
AUDIT COORDINATION ESSENTIALS	BARRIERS TO OVERCOME
<ul style="list-style-type: none"> ▪ Integrated 'Total' Approach: Remote auditing may be performed in all processes of an organization (i.e. quality, safety, operations & technical, engineering, procurement, sub-contractors, controls & administration, financial, risk, etc.). By using this approach for a Remote Audit, there is no need to conduct separate audits for each individual process, thus saving time and avoiding duplicate effort. ▪ Finely Tuned Preparation: Preparation for a Remote Audit needs to be finely tuned and well-coordinated in advance. A good practice is for the audit team to hold a coordination meeting five (5) days before the audit start date (i.e. for assigning leads, audit behaviour & etiquette, coordination on presenting). ▪ Involving Technical Experts in the Audit Team: Remote Audits allow for the inclusion and direct involvement of Technical Experts in the audit team (e.g. for risk, for commissioning, and the CSQM Project Coordinator). This offers multiple advantages, as the audit scope is expanded, the audit observations are more detailed, and at the same time the Auditors and Auditees improve their working relationship. 	<ul style="list-style-type: none"> ▪ Remote Audit Scheduling and Integrity: The conduct and integrity of the Remote Audit depends on the established level of Quality Assurance in the Project. The Auditor should be confident even before the start that the processes are properly implemented without major non-conformances, especially for the external areas (workshops, sites, stores, plants, etc.). Hence it is optimal to plan for the 1st audit to be an 'On-site' physical audit, and then the 2nd audit to be 'Remote'. ▪ More Time to Plan Ahead & Duration: Remote Audits need significant time to plan and conduct. On the other hand, considering the saving over total travel time, this balances out. ▪ Selecting Audit Samples Remotely: Selection of samples and areas to audit is important. For example, random selection of the audited area may be compromised if the Auditee only selects the best performing areas and the Auditor is not aware of the overall scope and particular activities. Thus, samples should be random but specific, and the Auditor should have the ability to actively select. ▪ Client ICT Prohibitions: In certain Projects where a Client prohibits use of mobile devices on the field, the on-site (external) locations cannot be audited remotely via ICT.



References:

1. ISO 9001:2015 "QMS Requirements" & ISO 19011:2018, "Guidelines for Auditing Management Systems"
2. ISO 9001 Auditing Practices Group "Guidance on: Remote Audits", Edition-1 2020-04-16
3. International Accreditation Forum Inc. "IAF MD 4:2018"; Issue 2 04 July 2018/2019

CCC's Business Continuity During COVID-19

Article by: M. Abusalah, L. Aggelopoulou, S. Jayyousi, S. Khoury, A. Dabdoub

Since the outbreak of COVID-19 and before most countries enforced lockdowns, CCC was preparing an emergency plan with a clear protection, coping and prevention strategy to tackle the harmful effects of COVID-19. A Change Management plan was introduced and protection measures were put into place which allowed CCC's Projects to remain in progress during the COVID-19 pandemic with minimum work interruptions. The following article will explain CCC's measures and innovations which were achieved in different countries and projects.

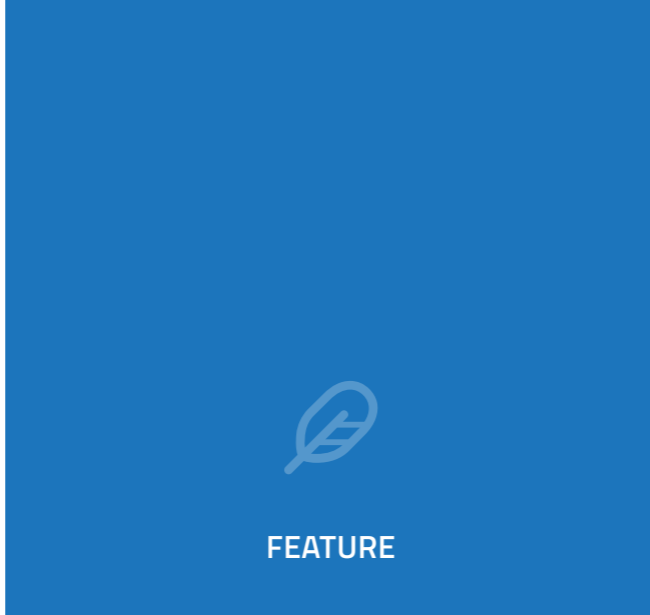
Change Management & Internal Communications during the COVID-19 Crisis

Before COVID-19 was officially listed as a pandemic by the World Health Organization (WHO), CCC had begun internally communicating factual, trusted and actionable information about the upcoming challenges and the safety measures in place to protect employees. As the coronavirus outbreak began to unfold and strict lockdowns were imposed in various countries where CCC had an operational presence, a crisis communications plan was immediately implemented.

CCC's internal communications strategy prioritized the distribution of accurate and updated news, company safety protocols, business continuity information and leadership messages. To ensure effective communication with our employees, all COVID-19 communications were published on CCC's intranet portal.

Since work-from-home policies were being adopted across CCC offices and many employees were experiencing remote work for the first time, dedicated IT teams were rolled out for ease of communication. Additionally, digital resources were curated to support employees' productivity and build a sense of connection. CCC's "Work Efficiently from Home" Bulletin was particularly developed to share expert knowledge and best practices for working effectively from home as well sharing advice on resiliency, wellness and staying healthy.

CCC has 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 office to commit their work, a flexible working hours and time shifts have been scheduled in order to reduce number of people inside the office.



Responsive and Agile Intensive Care Units (ICU Pods)

CCC in collaboration with the open source project CURA (Connected Units for Respiratory Ailments) built modular ICU units that are autonomous and mobile. These 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. The structure is quick to assemble and disassemble, because it is made from camp accommodation units of about 6 meters long (container-like). Each ICU consists of medical equipment and two beds. The ICUs have been developed by CCC projects in Qatar. The Modular ICU units can be attached to hospitals or installed in remote areas projects and communities for fast health treatment.

ICU Design

Each unit is hosted in a 6 meters intermodal container, repurposed with biocontainment equipment.

An extractor creates indoor negative pressure, complying with the standards of Airborne Infection Isolation Rooms (AIIRs). Two glass windows carved on the opposite sides of the containers are meant for doctors to always get a sense of the status of patients both inside and outside the pods. Also, this would potentially allow external visitors to get closer to their relatives/friends in a safer and more humane setting.



Multiple use and Functionality

The ICU Pods are completely reusable in case of future emergencies as they are weather resistant, easily stored and quick to reassemble. This provides preparedness for future emergencies and allows for easy and safe storage of equipment. Additionally, the pods are designed to be reusable for other applications, once the emergency is over. They are fully functional 15 m² units that 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.

Facial & Thermal Cameras with Artificial Intelligence

CCC Kazakhstan has successfully implemented, commissioned and tested the first Artificial intelligence video analytics technology to fight COVID-19.

The video analytics have the capability of deep learning technology by analysing large data sets compared to traditional algorithms. The system will take decisions to trigger actions based on a deep structural level of analytics.

Such AI systems comes with higher accuracy and agility than traditional monitoring process by analysing and learning from large training data sets which will facilitate the screening process to reduce and seize the spread of COVID-19 before entering the camp or site locations.



FEATURE: CCC's Business Continuity During COVID-19

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Modular Disinfection Units (Sanitizing Gates)

CCC has developed in-house modular and mobile sanitizing tunnels for the decontamination of employees from projects' existing resources. According to safety protocols, all employees and labour at site should pass through the tunnel before entering site and when leaving. The tunnel is made from a container (6 meters) and a network of mist nozzles that creates an obligatory passage. It is equipped with 25 mist nozzles on all sides that saturate the environment, water pump, water storage tank, antiseptic liquid and liquid soap.



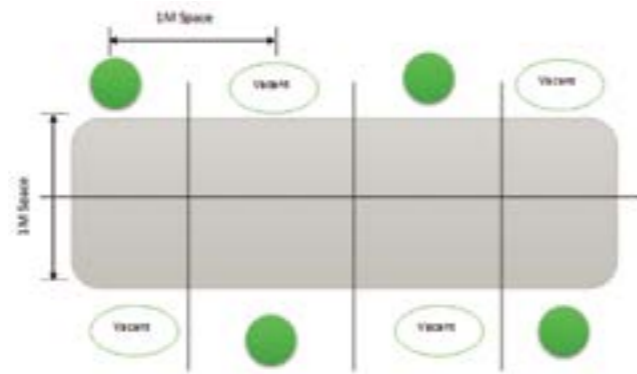
The nebulization system is connected to a control system capable of automatically mixing the sanitizing product at percentages indicated by CCC Health and Safety requirements. Access to the tunnel is regulated by a traffic light using an automated motion sensor. A barrier floor, has been placed on the internal of the sanitary gate, making it possible to sanitize the surface in contact with the ground as well.

Our first design walk-through enclosure is made of a standard-sized 6 meters (20 feet) container open ended from both sides. Around twenty-five Holman mist nozzles network are distributed on top and side walls covering the whole area within the container. The decontamination starts at the entry where the tunnel is equipped with a motion sensor so that when a person approaches the tunnel entrance, it starts spraying automatically with sanitizer. On entering the chamber, an electrically operated pump creates a disinfectant mist that is calibrated for a 20 second operation and stops automatically if the people flow stops. 400 to 500 persons can pass through the chamber for disinfection per hour in which it will consume around 60 litres of the sanitizing solution. A 500 litres tank is placed on top of the container unit, which lasts for 8 hours before a refill of the solution is needed.

Social Distancing

Social distancing is one of the most important virus spread prevention measures. CCC has imposed a number of social distancing rules, some examples include:

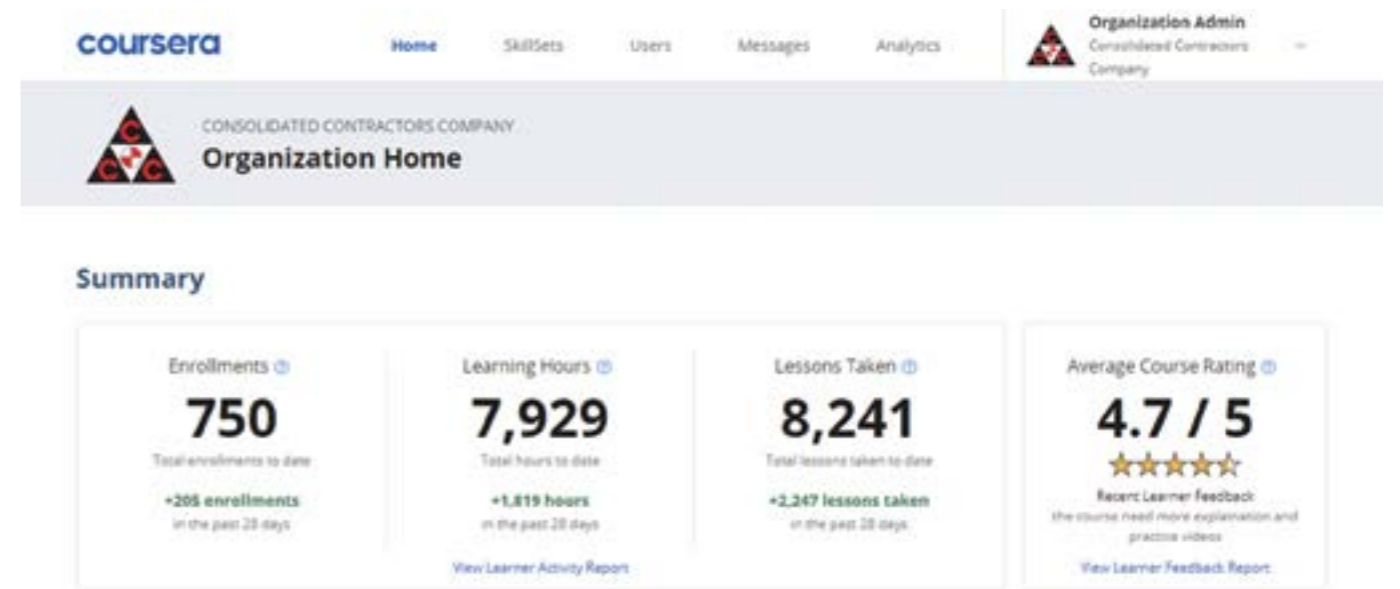
- Transportation to/from work sites, buses were equipped with barriers and the number of attendants were reduced.
- Mess halls were redesigned to fit less people (illustration below).



FEATURE: CCC's Business Continuity During COVID-19

Online Education Platform

With the difficulties in running onsite educational and training programs and in fulfilment of the vision of CCC's leadership. The Company's commitment to its Founding Fathers' core values and its Digital Transformation strategy, and in light of the dynamic global market requirements, we at CCC continue to enhance the skills and capacity of our employees through our learning and development programs. In addition to our existing set of in-house e-learning and webinars, we have recently partnered with Coursera to provide e-learning opportunities to 500 of our employees over an initial period of one year. Through this strategic partnership, our learners can select a variety of core courses and specializations of direct interest of CCC, in addition to electives from thousands of other courses, all offered by Coursera in association with world-renown educational institutes. Since its launch in early 2021, our CCC learners have shown commitment towards, and great interest and enthusiasm in self-development.



Supporting Employees Mental Health

During lockdowns and the mass shift to remote work, CCC investigated ways that would keep employees connected and support their mental wellbeing. An online chess tournament was organized for CCC employees and their families as an entertainment activity that also preserved the company culture from a distance.

Additional Measures

- Posters with photo tutorials in different languages.
- Biweekly Rapid tests for employees.
- Audits and Compliance checklist by HSE on each project.
- Reporting and Training.
- Free medical consultation (health and psychological) for employees whether working from office or home.
- Alternative (rotating) shifts for entire workforce, including subcontractors.
- Enable at minimum twice daily health, well-being, infrared (IR) thermometer and accountability checks across all levels of project organization.
- Issuance of "Work from Home" corporate procedure to regulate and orient employees with technical and personal risks and responsibilities.



Kazakhstan & CIS Region's COVID-19 Response

Article by: H. Kawash

The pandemic has been both a challenge and an opportunity.

Despite the repeated warnings for social distancing, the pandemic has brought CCC's team in Kazakhstan and the CIS region closer to the local communities and governing bodies. Jointly, CCC and local authorities have managed to elevate the stresses and hazards of the pandemic ensuring a more pragmatic response.

CSR and Community Engagement

The CCC has allocated a budget to assist authorities in relief works including:

1. Donating medical masks, both surgical and N95.
2. Assisting in the procurement and financing of oxygen tanks to relieve stress off of the medical system and ensure presence of needed supplies to treat all patients.
3. Combating poverty and job-loss during the pandemic through donating food packages and stimulus checks to less privileged families who were dramatically impacted by the pandemic.

Technology, Strategy and Continuation of Works

The pandemic has stimulated the advancement and adoption of technology within the construction industry. CCC's team in Kazakhstan & CIS region has succeeded at proving their problem-solving, opportunistic mindset and adaptive leadership skills. In collaboration with local ministries (including Ministry of Energy in Kazakhstan) and clients (including Tengizchevroil - TCO), Saif Al Jayyousi and Sharif Abdelrazeq under the leadership of RMD Mr. Hisham Kawash and with the assistance of subject matter experts, have succeeded in deploying and validating the following systems:



FEATURE: COVID-19 Response Kazakhstan & CIS Region's

1. Artificial Intelligence (AI).

AI technology was used as a vetting and testing procedure; the system, which was built using rehabilitated shipping containers - as part of the circular economy initiative, incorporated multiple off-the-shelf technologies and was built in-house and tuned to fit the purpose of scanning each employee entering the site for:

- a. Proper usage of mask (covering nose and mouth).
- b. Thermal sensing (ensure that all employees are within a permissible temperature range).
- c. Attendance of manpower on-site using face recognition.

2. Podding and Compartmentalization System

Micro teams of diverse professionals were created with two main targets:

- a. **Reduce the interface between employees**, as each team acts as an intact unit during work hours and beyond (in messing, accommodation, transportation, etc.). This has helped in ensuring that the wellbeing of the employees is met as interaction range between candidates decreased.
- b. **Ensure the continuity of work and productivity on-site**; when a team reported a positive case, the case received the needed attention while the rest of the team underwent PCR testing and isolation until cleared. A new team with a similar structure of skilled professionals would take over the work started by the infected team ensuring that work disruption is minimized.

It is essential to note that the cooperativeness of employees on and off construction site in deploying this strategy has led to its success. Furthermore, this technique helped distribute the demand for medical facilities over an extended period of time, which ensured the availability of medical appliances and healthcare facilities for employees when needed.

3. Remote Working Systems

It was realized that the most effective approach to reducing risk on-site was through decreasing the number of people physically present. Henceforth, a study analyzing the possibility and effectiveness of introducing remote working to specific functions was conducted and using a specialized service provider implemented.



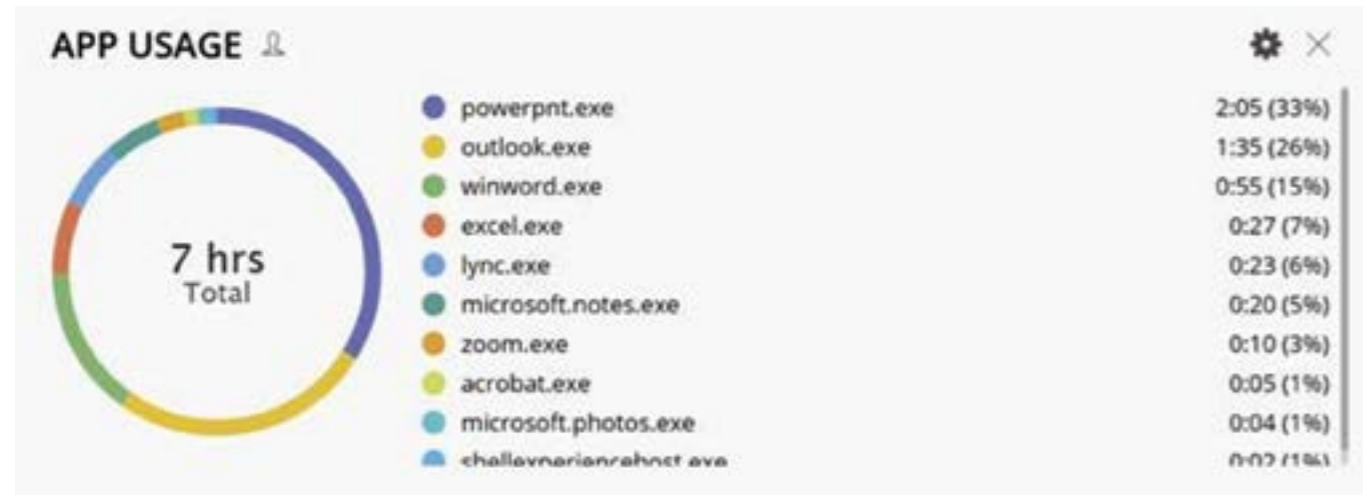
This process has helped ensuring the resumption of work for functions including accounts, HR, design, and others. Additionally, this system acted as a contingency plan for travel bans and mobility restrictions ensuring that the corporate system is kept running safely.

To ensure effectiveness of this solution a 3rd party software solution was integrated where KPIs were developed to ensure productivity metrics are met.



FEATURE: COVID-19 Response Kazakhstan & CIS Region's

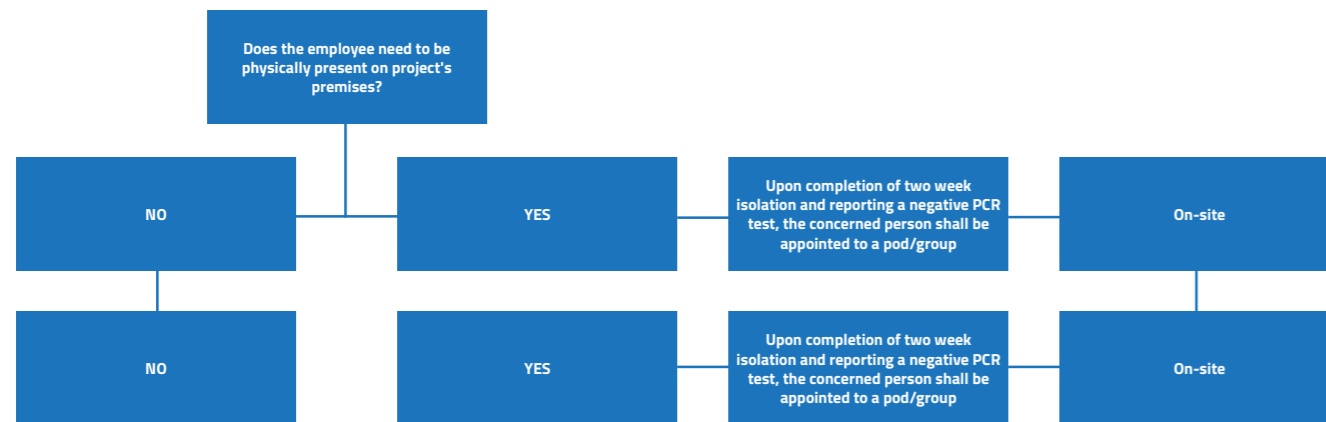
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4. Contact Tracing

Contact tracing technology was used on the construction site to track interaction between personnel and reverse engineer the interaction between infected personnel and their counterparts.

Technology development and adoption went through a the following framework:



Beyond COVID-19

The pandemic has amplified the need for development and reinforced the importance of collaboration in combating global challenges.

On this note, CCC in Kazakhstan and the CIS region aspires to intensify the development and adoption of technological advancements to ensure safer work-sites, higher efficiency, and a sustainability-driven construction & energy industries.

As the world revives from the pandemic, it is crucial to reminisce the United Nation's Sustainable Development Goals (SDGs), specifically SDG 13 pertaining to combating Climate Change.

CCC's team in Kazakhstan and the CIS region are actively working towards contesting traditional working models and revamping them with a sustainability-centric approach. Despite breaking new records and reaching new highs, it is firmly believed that, unless global efforts are joined, our efforts will be humbled by the behemoth climate crisis which forms the biggest global challenge of our modern era.

PROTECT YOURSELF & OTHERS



OMAN Muscat: COVID-19 Impact on the Mall of Oman

Article by: S. Mckerracher



The mall of Oman Project is located within Muscat, the capital area of the Sultanate. The project consists of the following main components: A three level mall with approximately 400 units incorporating anchor tenants, line shops, flagships, mini majors, entertainment areas, food courts, restaurants and a Snow Park. The total gross floor area is 420,221 sqm including car parking for 5,200 cars.

The project was first impacted by the COVID-19 outbreak in the middle of March 2020 when the project was around 80% complete. The initial event to impact the works was the closure of the countries land borders which prevented specialist sub-contractors from travelling to the work site. Subsequently there were imposed restrictions of movement from certain areas within the Governorate of Muscat which has prevented a significant number of operatives from travelling to site. In addition a number of material deliveries were delayed and disrupted due to imposed lockdowns and restrictions in their country of origin. The loss of labour had an obvious direct impact on the ability to maintain the reasonable progress of the Works.

The project experienced its first confirmed COVID 19 case on 19th May 2020. This number increased to 43 positive cases by the end of May 2020 which coincided with a general increased number of cases country wide. Due to the high number of cases being detected within the countries labour camps, including those of our major Sub-Contractors, all site activities were suspended on the instructions of the Ministerial Authorities for two weeks.

Strict procedures and protocols are established and maintained with the engagement of the relevant Ministerial authorities to protect the health of all project stakeholder and to ensure compliance with the orders and requirements of the government for the purpose of minimising the impact and spread of COVID-19.

To date the project has experienced over 500 positive cases within the project staff and workforce. Almost all project stakeholders have been effected by positive cases. Many of the positive cases experienced were detected in staff members who were in isolation after being identified as close contacts to others. The level of reporting and timely action of the Admin and HSE staff have ensured the impact of the pandemic has been managed to the best extent possible.

With exception of the one imposed closure the site operations have continued throughout the period of the pandemic albeit with a continued level of disruption that led to critical delay of the Works.

Contractual delay notices have been issued throughout the period where the progress of the works was directly impacted by events arising from the pandemic. In addition detailed and accurate records of costs and any time impact have been maintained in line with the company's requirements and to support any related claim for additional time and cost reimbursement.

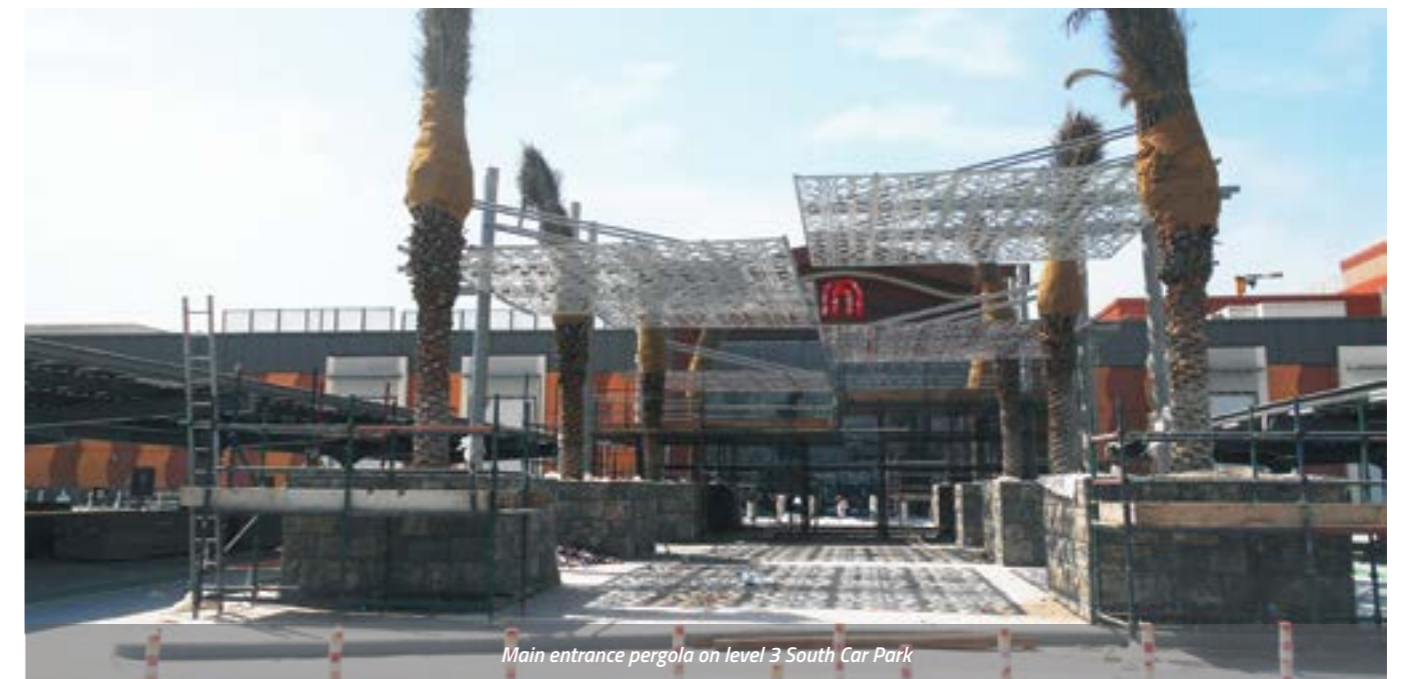
Throughout the period priority has been given to the safety of all project staff and operatives while maintaining continuity of the progress of the works. Notwithstanding the difficulties faced in the past year the project was Substantially Completed on 31st May 2021.



Navigation court at Main Entrance



West façade and roads into the EnergT Center



Main entrance pergola on level 3 South Car Park



U.A.E. Sharjah: City Center Al Zahia

Article by: R. Barghout



City Centre Al Zahia is the primary destination of choice for residents and visitors of Sharjah and the Northern Emirates. Its unrivalled variety of retail, leisure, dining and entertainment options; its meticulous layout superbly designed to reinforce the visitor's experience, underlines its ambition to be the number one attraction offering a flawless balance of public spaces and commercial areas.

The shopping center is ground-breaking from the very entrance; a beautiful canopy overhead sets the scene for a landmark destination.

City Centre Al Zahia will serve a trade area of more than 1.9M people, as well as attracting residents of neighboring Northern Emirates. This offers a diverse mix of over 360 retail brands over four levels.



AREA NEWS: Sharjah: City Center Al Zahia

City Centre Al Zahia is anchored by a 12,700 sqm Carrefour Hypermarket, complemented by leisure options including VOX Cinemas, with 16 screens incorporating the latest theatre technology, and a 2,350 sqm Magic Planet family entertainment destination. In addition, the external food and beverage precinct, located at the mall's entrance and with covered al fresco seating, will enhance Sharjah's dining options for residents and tourists. With more than 5,300 parking spaces.

City Centre Al Zahia's unrivalled variety of retail, leisure, dining and entertainment options, along with its ease of access and strategic location ensures that it becomes the central everyday destination to which residents and visitors will continually return.

CCC's scope included the procurement, construction, installation, testing, operation, maintenance and management of their scope of works with a value of AED 1.4 BN from the 1st of May 2017 leading into the successful completion and opening of the Mall on the 8th of March 2021.

The project has obtained a Golden LEED Certification from the United States Green Building Council.

The Project has successfully obtained 26 M LTI free Man-hours' Record.

Memorable Mentions of executed scope:

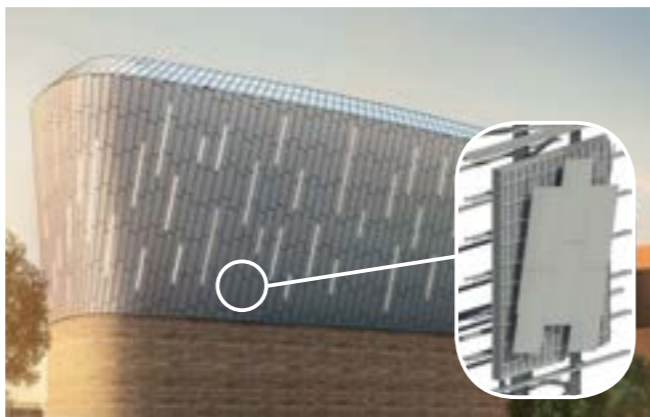
- A Total built up area of 371,000 sqm.
- 368 retail units over a net leasable area of 136,000 sqm.
- 5300 car parking spaces.
- 32,000 sqm of External Landscaping area including 17 outdoor seated restaurant areas, 7 water features and the biggest external canopy in the middle east.
- Design and build of the mall's Sewage Treatment Plant including a Reverse Osmosis Plant that is treating all the raw sewage from the mall and recovering 99% of the effluent to be reused at the mall with a capacity of 1,300 m³/day.
- 3,140 Piles.
- 140,000 cbm of Reinforced Concrete.
- 29,000 Tons of Reinforcement.
- 130,000 sqm of Hollow Core Slabs.
- Over 300,000 Linear Meters of Cables.
- 7 11 KV Substations.
- 200 Distribution Boards.
- 43 Lifts, Escalators and Travellators.
- 67 Air Handling Units.



for Remedial Works Employing BIM & Laser Scanning

Article by: A. Abu Alia

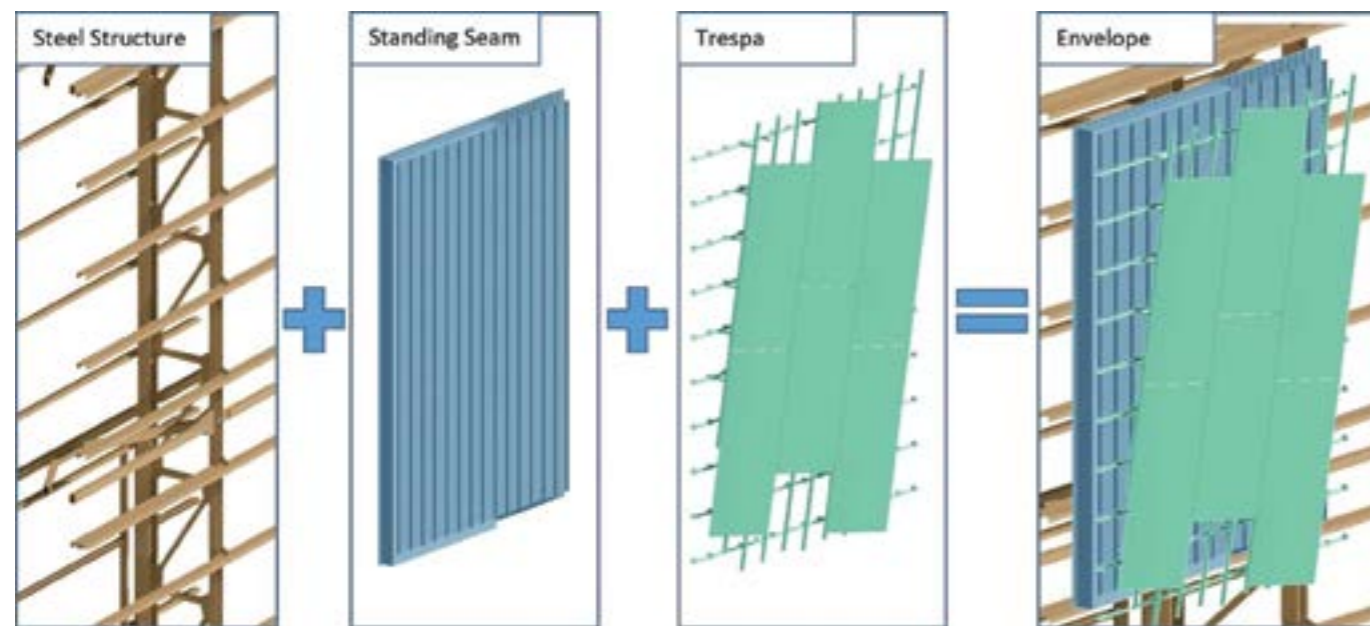
BIM
BUILDING INFORMATION MODELLING



Overview

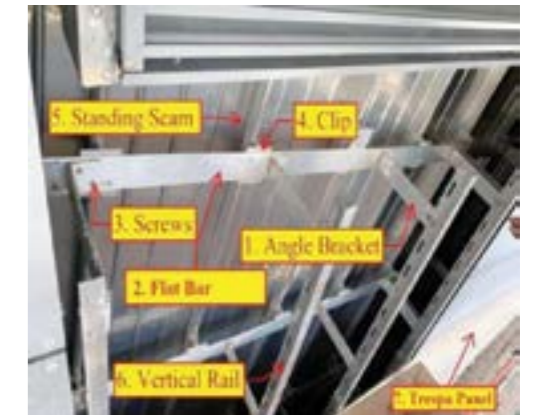
The Mall of Oman project with a total built-up area of 387,000 m² will be the largest retail shopping center in Oman with a total of 350 stores across 137,000 sqm of gross leasable area.

It is 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 with around 8,000 sqm play area.

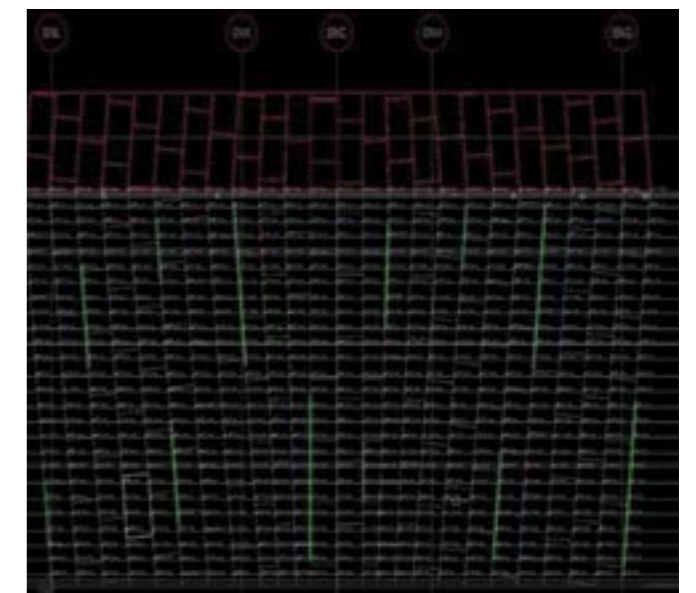
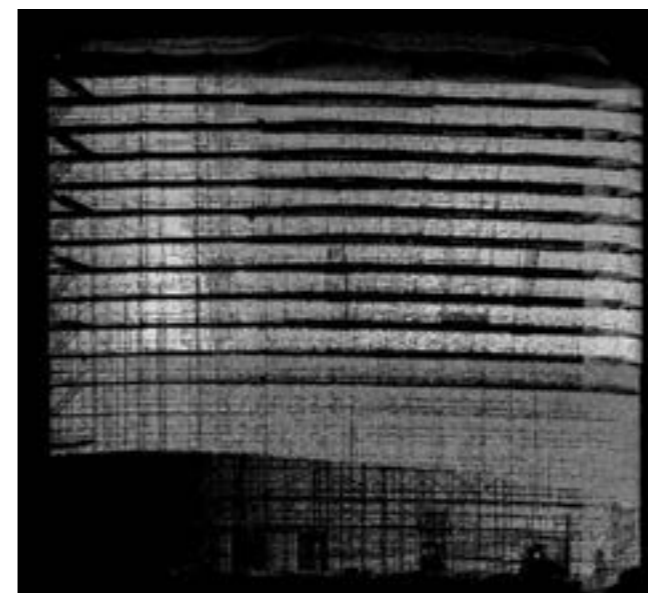


Challenge: The envelope of the Snow Park complex features a curved façade wall and a sloped parapet. The envelope is composed of a massive steel structure cage and is cladded externally with a Standing Seam system attached to the main steel. Following that, the Standing Seam is cladded with an external Rainscreen system called Trespa.

Due to constructability and design considerations, the steel structure frame was segmented; consequently, the Trespa Panels inherited the steel structure's segmented shape and failed to achieve the required curvature. Given that the east side of the Snow Park envelope has inclined and curved elevations with varying heights as well as sloped parapet, the challenge was greater when constructing a smooth curved envelope. In order to achieve the required curved façade and parapet, The Engineer has directed the contractor to commence remedial work immediately.



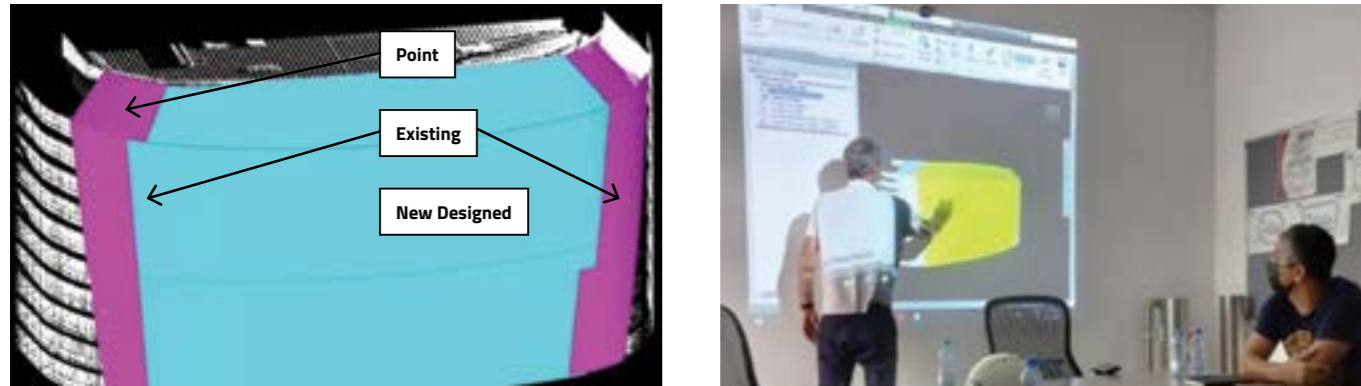
BIM Solution: The project team's proposed solution included using laser scanning technology to capture the as-built envelope surface and integrating it within the project's BIM model to extract 2D enhanced sections to achieve the required curvature was endorsed by all stakeholders. To achieve the required curvature, a new surface for the Trespa panels must be designed, and the length of each bracket (which connects the Trespa panels to the standing seam) should vary according to bracket position.



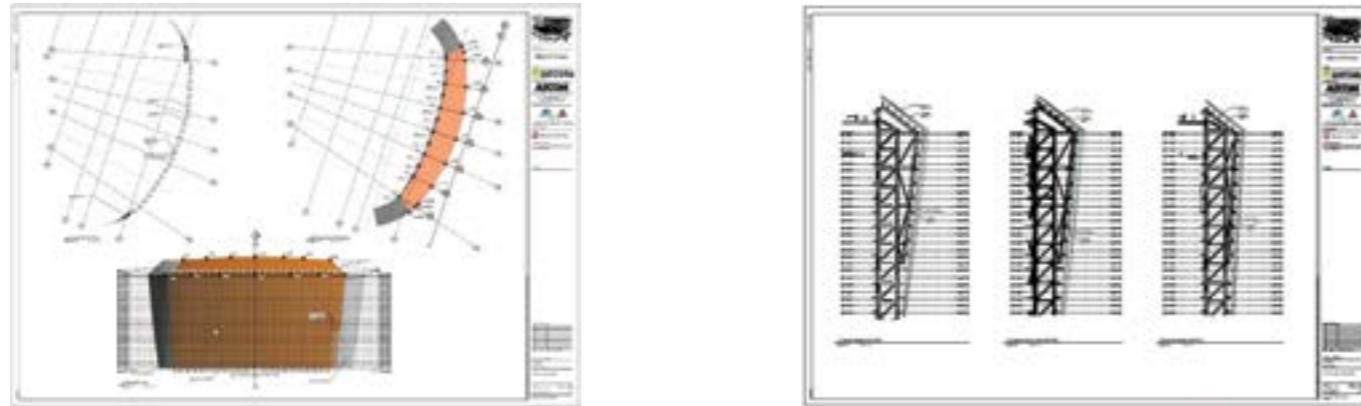
Various challenges were encountered along the way. Scaffolding was re-erected on the east façade for remedial work. However, the congested scaffolding that has been erected from bottom to top is the Laser Scan's greatest obstacle. Scaffolding removal and re-erection will consume significant amount of time, resulting in additional cost and loss. Furthermore, because the Trespa covers the standing seam, manual measurements of the angle bracket (1) at various horizontal and vertical levels were taken.

BIM: Employing BIM & Laser Scanning for Remedial Works

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With the scaffolding in place laser scanning was performed, and the resulting point cloud model was imported into a BIM platform, where an interpolated surface was modelled to the highest possible precision using the available points without the need to dismantle the scaffolding. Similarly, the flat bar manual measurements (650 Nos) were imported into the BIM tool using in-house programmed automation. From the laser scanning, an approximation of the as-built standing seam surfaces was created and used as a reference (primarily for bracket length design) to redesign the Trespa panels. Certain factors were considered when designing the new Trespa surface, including the bracket's maximum permissible length and the clearance required between the existing scaffolding and the new surface. The design is then reviewed by the construction teams and subcontractor.



Following a review of the BIM solution, the site team was instructed to dismantle the Trespa panels on the east side in order to begin remedial work. Following that, another laser scan is performed to verify the standing seam surface's accuracy and to re-capture interfacing areas. The BIM team extracted new layouts (12 layouts contain 32 horizontal and vertical sections) from as-built BIM models and submitted them for approval to Trespa's subcontractor and consultant. Following approval of BIM sections, each Trespa steel support member was manufactured to the exact length required and Trespa components and panels were installed in accordance with these sections.



Strategies & Actions HSE Group: COVID-19

Article by: L. Darraj



HSE: HSE Group: COVID-19 Strategies & Actions

On Thursday March 19th, 2020, Mr. Samer Khoury stated:

"The challenges caused by the spread of coronavirus (COVID-19) are impacting every person, every nation and every business around the world.

For Consolidated Contractors Company (CCC), safeguarding the Health and Safety of our partners, clients, employees and their families has always been our outmost priority. As such, with consistency and responsibility we are taking a series of emergency measures to limit the spread of COVID-19 and protect public health.

We are making decisions and acting quickly as we gain the facts. We are closely monitoring the situation as well as following official directives and scientific advice to control any possible infections."

In the light of the Philosophy above and having realized that Early Detection of COVID-19 is fundamental to control the spread out of COVID-19 Pandemic, CCC HSE-Group Corporate fast took actions at early stages; developed and implemented COVID-19 procedures, Policies, Guidelines, Awareness Programs, Emergency Plans, Medical Updates, and all necessary literature and services to encounter the outbreak and the effect of COVID-19 Pandemic.

Strategies to Handle & Cope with COVID-19

1. Information & Statistics (Information-Processing)

As COVID-19 was a new pandemic, we realized the importance of Information in order to take the right decisions, so CCC Corporate HSE-Group decided to take and still taking the following actions:

- Collect Information related to COVID-19 from International Health Organization such as WHO, Health Professionals & Reports and all possible sources in order to develop a good idea about COVID-19 in terms of symptoms, severity, risk, behavior, ways it spreads out, death rate, and preventive measures.
- Collect data from all CCC projects, facilities and area of operations through the "Daily COVID-19 Report" through which Projects reported all confirmed Positive Cases, Fatalities, In-Contact & Suspect-Cases, Recovered Cases, number of Tests conducted, and any unique issue related to COVID-19.
- Log & Register the collected Data & Statistics.
- Review & Analyze the Data & Statistics collected from Projects.
- Identify common problems and trend-type issues. Statistics and Analysis helped us decide priorities and focus more on the right area of concerns such as the Areas & Projects which needed special attention and monitoring as it showed high numbers of confirmed cases.
- Based on the Analysis of Information & Statistics collected from the Projects:
 - We acted immediately and took fast actions to prevent or at least confine the spread and effect of COVID-19 at Areas of Concern.
 - Followed up with the projects to assess the effectiveness of the Control Measures recommended to them and learn from their experience.
 - Obtained and recorded Lessons Learned
 - Developed initial & Live COVID-19 Procedure and Policies step by step; incorporating our own experiences, lessons learned and the developing recommendations and Control Measures of International Health Organizations and Industry.
 - Advised new Recommendations & Preventive Measures to all CCC projects and Areas of Operation.

COVID-19 Summary - CCC Project & Areas				
CONSOLIDATED CONTRACTORS COMPANY				
Update Date: Sunday, May 30, 2021				
TOTAL CASES	CONFIRMED	RECOVERED	DEATH	ACTIVE
	5130	4876	6	148
COVID-19 Total Cases - CCC Areas				
AREA	CONFIRMED	RECOVERED	DEATH	ACTIVE
1 SAUDI ARABIA	2198	1548	2	52
2 UAE	655	661	3	51
3 QATAR	1078	1072	0	6
4 OMAN	326	327	1	8
5 EGYPT	122	123	0	9
6 KUWAIT	42	30	0	12
7 BANGLADESH	93	92	0	10
8 Algeria	122	122	0	0
Total	5130	4876	6	148

2. Deal with COVID-19 as a Crisis

Which implies exerting all efforts, allocating all resources needed to contain the effect of COVID-19, and preparing and be ready for all emergency scenarios.

CCC Top Management instructed all CCC level of Managements and stakeholders to consider and treat COVID-19 as top and first priority.

3. Strictly implement the Local & Governmental Regulations

Despite scarcity and lack of information, and slow development and even contradicting information and policies in most areas world-wide related to COVID-19.

CCC Corporate HSE-Group made sure always to comply with all Local-Authority Regulations and Requirements as minimum standards to meet; in addition to our own best practices.

As every country/Area has different policies and requirements based on their own special circumstances.

4. Stay Alert & keep abreast of the new development of COVID-19

We still make sure to stay most updated of the fast-changing and new developments of COVID-19.

Keep the "COVID-19 Procedure" as a live Document which gets updated almost on weekly basis in order to accommodate and incorporate all new updates and developments of COVID-19.

5. Design and keep our COVID-19 Procedure as Live Document

We decided and still keep our "COVID-19 Procedure" & Policies as a Live-Documents; revising the Procedure continuously so as to:

- Accommodate and incorporate the daily updates and fast-changing developments of COVID-19.
- Give a chance for new ideas and initiatives as COVID-19 International-Standards & Regulations are still developing and immature.
- Keep space for projects to modify the Procedure in order to accommodate their own Local & Governmental Regulations & Policies as every country/Area may have different policies.

6. Have Back-up Plans & Alternatives

Again, due to scarcity of information, confusion, and chaise especially in the beginning, we realized we have to be ready and act in case of any unexpected scenario and to work with minimum facilities, poor communication means and little help from external entities in some countries, i.e. we must have Back-up Plans & Alternatives; Work Independently and Self-Sufficient in some situations if we have to in terms of:

- Have the Emergency Response Plans ready and well communicated to all CCC employees; Evacuation Response Plan, Security Plan, Shutdown Plans, etc.
- Temporary Medical Facilities to accommodate COVID-19 cases (we did this in beginning in UAE and other Areas).
- Be ready and prepare plans to provide basic Medical Treatment & Services if necessary (medical supply, staff, and training).
- Traveling-Management & Preparedness/Back-up Plans of flights, Policies of Vacations, work-from-Home, etc.
- Keep our Procedures & Policies most updated, distribute it to all CCC Projects, personnel and stakeholders in order to have confidence and clear understanding of what should be done in any scenario.
- Have a clear vision, confidence, no panic and take decisions based on Circumstances, CCC Policies & Recommendations and Local regulations. Upgrade and Enforce the CCC Procedures and Policies if there is no clear/Specific Local Regulations.



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7. Emphasize on EDUCATION Approach & adopt PREVENTIVE Philosophy

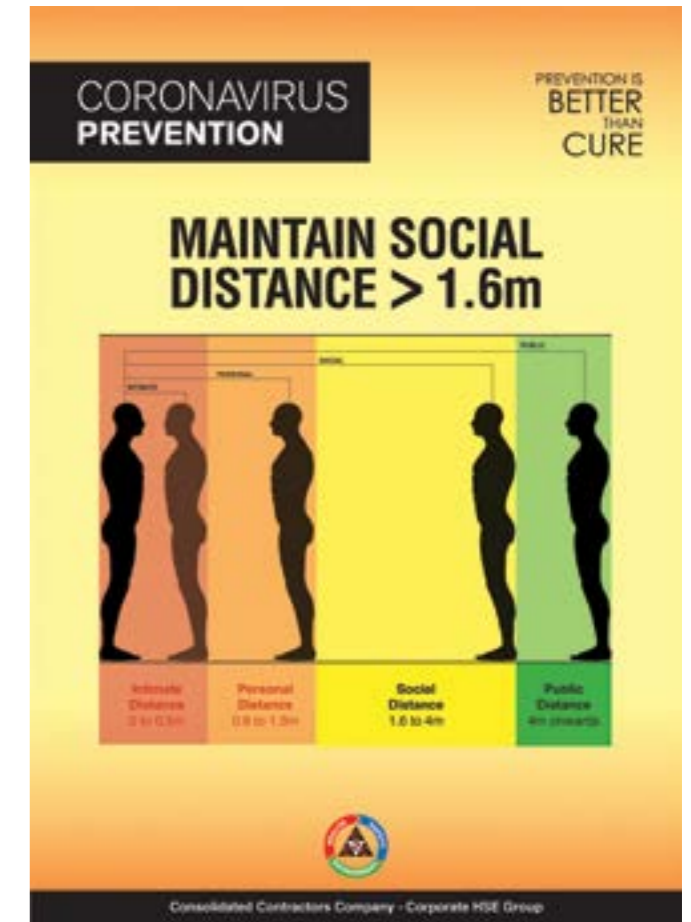
Our main Strategy & GOAL is to prevent the Incident of COVID-19 from Occurrence.

Education and Raising Awareness of COVID-19 is significant to prevent incident Occurrence since it is a new epidemic and people do not know much about it.

We adopted CONTINUING EDUCATION about COVID-19 to ALL LEVELS OF CCC EMPLOYEES AND WORKERS.

Communicate and cascade information, recommendations, awareness and Preventive measures through:

- Safety Alerts/Continuous.
- Posters/Pictorial and linguistic in different languages.
- Policies & Procedures to be sent to projects continuously.
- Updates and new developments to be communicated immediately.
- Awareness Campaigns carried out.
- Meetings & Communication with Top management, Area Management and Project Management.
- All means of communications, e.g. Emails, Conference Call Meetings, small TBTs, Posters, etc.





CCC HSE Group COVID-19 Action Plan & Activities

1. Procedure & Policy Implementation

- Strictly implement all State and Governmental Policies and Regulations related to COVID-19, e.g. Traveling, COVID-19 Confirmed-Case Policy, Quarantine Policy, Close-Contact Policy, etc.
- Stay updated of the changes in the State-protocols & Regulations, and apply the most updated State- & Regulations.

2. Masks & Social Distancing

- Masks must be worn by all employees, visitors and all individuals at all times.
- Social-Distance must be maintained by all employees, visitors and all individuals at all times.
- Management is responsible to monitor and enforce wearing masks and observing the social-distancing.

3. Communication

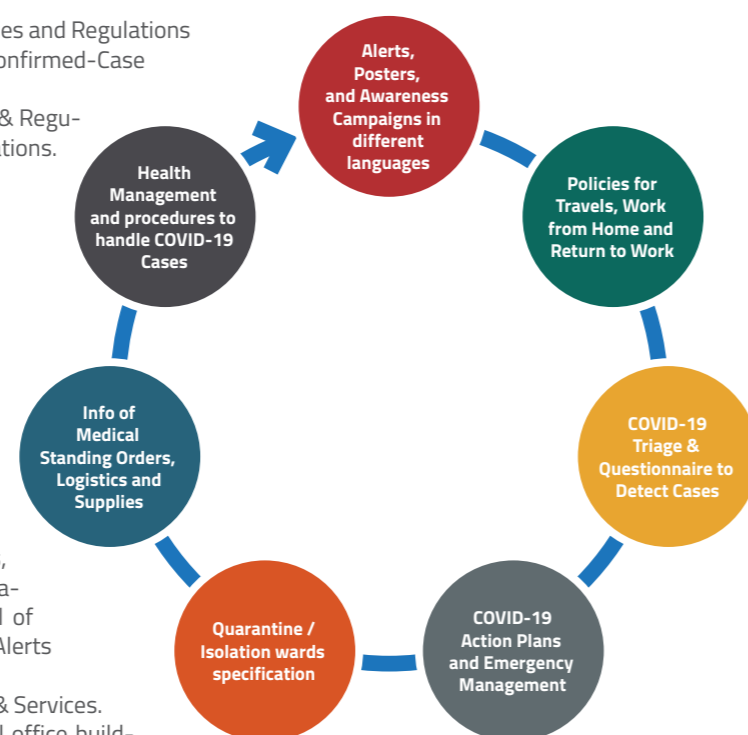
- Safety Alerts of COVID-19, written in all languages, shall be posted at all principal locations of Camp-Facilities in order to educate workers and personnel of the preventive measures of Coronavirus. (Safety Alerts attached).
- Establish COVID-19 Committee from both HR, HSE & Services.
- Post the Emergency Number inside and outside all office buildings.
- Communicate to employees, as necessary, any government- issued legal information and regulations.
- Ensure obtaining up-to-date information from Ministry of Health, and advise employees on precautionary and preventive measures to be taken.
- "Coronavirus COVID-19 safety Bulletin Board" shall be made and erected outside the office buildings where posters and safety alerts are posted and updated.

4. Meeting Rooms

- Avoid indoor Meetings and massive gathering as much as possible.
- Replace face-to-face meetings with video/phone conferencing. Teleconferences, Web-based meetings, E-mails or any Web Applications may be utilized instead.
- Use only 50% of the designed accommodation-capacity of meeting-rooms, i.e. keep a minimum distance of 1.5 meters among attendees.

5. Office-Buildings

- Office-Employees must maintain 2 meters of physical distance apart.
- Masks must be worn by all Office-Employees at all times.
- Proper Ventilation must be maintained at all Office-buildings.
- Floor-Marking and Warning Signs to be posted to encourage Social-Distancing.
- Practice Social Distancing to leave a space of 2 meters between individuals within office-buildings.
- Utilize electronic communication and paper-circulation and minimize hand-handling papers and office-stationary.



6. Hygiene and Sanitization

- Ensure that Routine Cleaning is regularly performed (Preferably daily), and to be done during off-working hours (no employees at offices).
- Disinfection/Deep Cleaning shall be performed in Office-buildings in Regular Basis (Preferably Weekly). Disinfection can be carried by Machine or Hand.
- Disinfection/Deep Cleaning shall be carried out for all offices, stores, kitchens, corridors, doors, desks, carpet, Air-Conditioning & Ventilation Systems and all other surfaces.
- Sanitizer-Dispensers (75% Alcoholic-based) shall be provided for every building/facility; at entries, exits and corridors.
- Soap-holders shall be provided; filled with soap at all times in all Toilets and Wash-Rooms of the buildings. (Liquid soap is preferred over soap-bar).
- Toilets and Urine-Bowels must be cleaned and disinfected at all times.
- Toilet papers must be available at all times at toilets and wash-rooms.
- Materials, e.g. masks, hand-sanitizers, gloves and cleaning material must be available on stock and storage at all times.
- Distribute masks and hand-sanitizers to all workers and employees.
- Distribute masks and hand-sanitizers at entry of building/facility to all who intend to enter the building/facility.
- Conduct pest control on regular basis as per required procedure.
- Assign a cleaner to each building whose name and phone number must be posted on the perspective building.

7. Kitchens & Pantries

- Office-Boys are the only authorized to use the coffee pot and other kitchen tools and appliances.
- Use only Disposable Cups. Staff members may bring their own disposable cups and containers.
- No one is allowed to prepare any food inside the kitchen or anywhere inside the office buildings.

8. Temperature Check

- Temperature-Check shall be carried out to all employees every morning as they ride buses. (Temperature-Guns maybe used).
- Those who indicate high temperature (above 37 C) or any symptoms shall not be allowed access.
- Temperature-Check shall be carried out to all employees at the security gates prior to their entry to offices/facilities.
- Those who indicate high temperature (above 37 C) or any symptoms shall not be allowed access.

9. Transportation services

- Utilize only 50% of bus accommodation-capacity in order to maintain safe social distance among passengers inside buses.
- Sanitize all buses before and after each journey. Drivers/helpers may carry out the regular bus-sanitization.
- Drivers and passengers must wear masks and gloves inside buses at all times.
- Bus drop-off points must be monitored by security to ensure adherence to preventative measures. Ensure 2-meter social distance is always maintained during riding and exiting buses.
- In small vehicles, Masks must be worn if there are more than one person in the vehicle.
- No more passengers than what is mandated by the State-regulation are allowed in one vehicle. The driver is to ensure implementation.
- Drivers must clean/disinfect their assigned vehicles frequently on daily basis; before and after every trip.
- Drivers of vehicles are responsible to ensure that passengers wear their masks and to apply all control measures.
- Management and supervisors is responsible to monitor all transportation activities to ensure strict implementation of the control measures stated herein.
- Avoid taking public transportation if possible.

**10. "COVID-19" Committee**

"COVID-19 Committee" shall be formed from Management, Administration and HSE Team which purpose is to monitor employees and workers, and to ensure implementation of the COVID-19 Procedure and Emergency Response Plan. The Committee members shall be, but not limited to, the following members:

- Area Manager
- Area Head Administrator
- Project Manager
- Project HSE Manager
- Project Doctor/Nurse
- Project Head Administrator

11. Employees Behavior & General COVID-19 Pre-cautionary Measures

Management must communicate and enforce implementation of Control Measures as advised in the Safety Alerts and Posters such as:

- Employees are required to clean their own work stations and offices at all times.
- Employees are recommended to maintain personal hygiene measures.
- Keep at least 4-feet Safe-distance (Appx. 1.5 meters) during personal interaction with other individuals.
- No hand-shakes.
- Correct way of sneezing.
- Mask and gloves are mandatory at all times when interacting with others and in common areas.
- Use hand sanitizers at all times.
- Do not come to work if you feel sick, and attend a clinic immediately.
- Report to Management and Clinic any suspicious cases of high temperature or flu symptoms.
- Wash your hands regularly with soap and water for 30 seconds and follow respiratory etiquette.
- Avoid touching surfaces and do not touch your face if not washed or sanitized.
- Employees are encouraged, when they return home, to disinfect their shoes and not use them inside their residence, change and wash all clothing, take showers, and sanitize personal belongings such as wallets, phones, keys, etc.
- Employees are encouraged to fortify their immunity by having enough sleep, eating healthily and exercising.

12. Visitors

Stringent Visitors' Policy shall be implemented considering the following:

- No visitors shall be initially invited to offices, site or any other business premises. Instead; conference calls or any other verbal communication are advised to avoid having visitors in person.
- No visitors shall be permitted to attend site or admitted to offices unless previously approved by the Project/Area management as an exceptional case.
- In case of an exceptional Visitor, the following procedure shall be implemented:
 - The visitor's name must be given in advance and available at the security gate of the building/facility.
 - The Visitor's Temperature shall be tested using a temperature-gun at the Security gate and his general health conditions shall be observed. Visitors who measure temperature higher than normal or indicate abnormal health conditions shall not be permitted access even though they have a previous permit.
 - The Visitor's belongings especially Telephones, keys and bags shall be retained at the security gate otherwise such items must be disinfected at the gate if they have to bring them inside the offices and buildings.
- Visitors must be escorted by a safety officer or an authorized person from the Security Gate to their destination within the building/facilities and back forth.
- A log of visitors must be kept at the Security Gate including Full Name, time, date, destination, etc.
- Visitors, if allowed access, shall be provided with a mask, hand sanitizers upon their entry.
- Visitors shall be instructed to avoid hand-shake, keep the 4 feet (1.5 meters) safe distance, make it a short-visit, and comply with the posted procedures.
- A brief Induction (5-10 minutes) shall be given to the approved visitor at the Security Gate in order to communicate important Preventive Measure before they enter the facilities such as using Safe distance, using hand sanitizers, No hand-shake, emergency phone number, etc.
- Drivers and maintenance employees are not allowed into the premises unless called on by their supervisors.

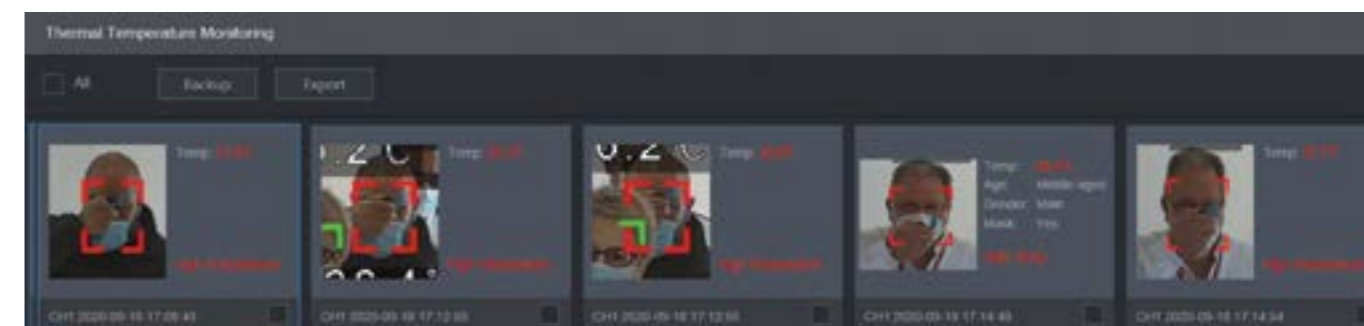
**FGP/ME& I Project Initiative, Kazakhstan****New Technology; Thermal Screening and Disinfection**

Kazakhstan MEI-project has successfully implemented, commissioned and tested the First Artificial intelligence video analytics technology to fight COVID-19.

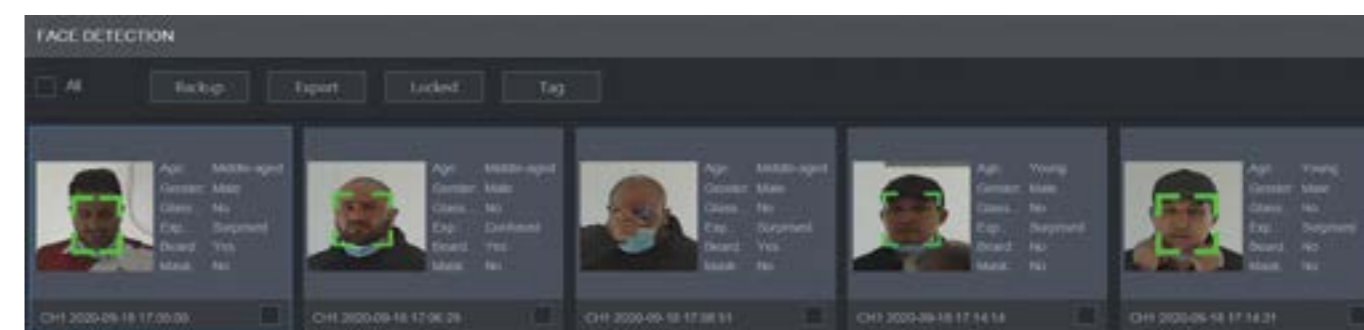
The technology procured from Dahua video analytics has the capability of deep learning technology by analyzing large data sets compared to traditional algorithms. With such deeper structural level of analysis more object types which can be identified that will result with valuable data that the system will take decisions to trigger actions based upon. Such AI systems comes with higher accuracy and agility than traditional monitoring process by analyzing and learning from large data sets which will facilitate the screening process that will lead to reduce and seize the spread of COVID-19 before entering the camp or site locations.

In the surveillance and video analytics space, primary target objects of deep learning algorithms are being taken into consideration (people and vehicles). Below are the list of system analysis functions installed at RV-ME&I Camp:

- Meta Data: data that is being extracted from an object which can be utilized for data retrieval. There are three types of Meta data in security.
 1. Facial Information which includes gender, Age, Glasses, Facemask, Expressions, Beard.
 2. Human Body: clothing color, pants, tops, Hair, backpacks.
 3. Vehicle information which includes license plate, color, brand, model.
- Face Recognition: identifies characteristics of each face are extracted to be modeled, each face captured will be compared with the available face models stored in the database in order to be identified.
- Automated head count: the number of employees that enter/Leave RV Campy specific area within specific time.



Report sample exported to list the employees who their temperature exceeds 37.3 c which might indicate a possible case of COVID-19.



Report sample exported to list employees who were not wearing facemask for a specified period using the face detection filtering.



HSE: HSE Group: COVID-19 Strategies & Actions

continued from page 35

It gave CCC Corporate HSE-Group a great pleasure to write an Appreciation Letter to sincerely thank Kazakhstan Area for successfully initiating and implementing the First "Artificial Intelligence Video Analytics Technology" in our effort to fight and prevent the spread-out of COVID-19.

Our appreciation to such achievement went to all Kazakhstan Area Management, IT Team & Civil Engineering Department and FGP/ME Project who have proactively worked together initiating the new Technology which have greatly facilitated the Screening Process of detecting early symptoms of COVID-19 upon entering Camps and Site Locations.

Such effort and pioneer initiative to protect the health of our workers and employees was achieved only through leadership-support, team work and solid commitment to Health & Safety; resulting in one of CCC COVID-19 Best Practices throughout all CCC areas of operation.

FGP/ME initiative has been valuable and a leading example for all CCC Projects and Areas to implement. We encourage you and all parties to retain the effort and motivation initiating new ideas, technologies and suggestions in order to combat COVID-19.



Other Initiatives

Proactive Monitoring and Preparation in regard with Seasonal Influenza & COVID-19

In KSA, Riyadh Metro Project has taken initiative to provide COVID-19 Vaccine to all workforce in order to comply with KSA local regulations and protect the health and safety of employees.

In addition, King Abdul Aziz International Airport Development Project in Jeddah, KSA has taken initiative and provided an effort to avoid facing another epidemic and with an objective of controlling and managing the second wave of COVID-19 in specific, The KAIA Project management with collaboration of HSE department had ordered sufficient quantity of flu vaccines ahead of the winter season and launched a seasonal flu vaccination campaign throughout the project for two consecutive days in which 102 employee received vaccine at their convenient locations (Site, Office & accommodation).

The vaccination had been developed in line with Ministry of Health MOH recommendations and HSE strategic plan to control the spread of Influenza. It can be expected that by having the vaccine project employees will reduce their personal risk of getting infected with flu and there is very low possibility of contracting the acute complications of flu by 70-80 percent.

In addition to this flu vaccination, it allows the individuals not to get confused between flu symptoms and COVID-19 symptoms. Knowing that the employees are immune to flu and will prevent them from medical complications during COVID-19 Pandemic.

The main benefit of Project/organization for getting vaccine for project employees is:

- It reduces the likelihood of flu outbreak and helps protect employees which in turn reduces absenteeism rates.
- Promotes a healthy & safe working environment.



HSE: HSE Group: COVID-19 Strategies & Actions

In addition, Ghazeer Project in Oman has taken initiative and provided Flu vaccination campaign for approximately 370 CCC employees during the COVID-19 Pandemic.

CCC HSE group would like to thank both CCC Areas of KSA and Oman for such initiatives and all other CCC Areas of operations for their great efforts and support to carry out initiatives, their provision of required resources to prevent the spread of COVID-19 and for their successful compliance & implementation of CCC COVID-19 Procedures, guidelines and local regulations where CCC operates.

CCC HSE Group believes that implementing COVID-19 appropriate preventive measures and being pro-active by initiating new initiatives such as new technologies and staying alert and abreast of the new development and researches of COVID-19 will reduce the impact of COVID-19 on our future projects. COVID-19 Procedures and guidelines must be considered throughout the whole project execution (from early mobilization until completion) in order to reduce the number of COVID-19 cases and protect the health and safety of our workers. Moreover, CCC projects must emphasize on communicating and cascading information about COVID-19, recommendations, awareness and preventive measures among workforce as it is considered a crucial part of the HSE Induction Training in order to spread education among all levels of workers. CCC HSE Management system has been revised to include COVID-19 Procedures and Guidelines through incorporating COVID-19 precautions into CCC HSE Plan and developing a new separate COVID-19 Procedure which was distributed to all projects for implementation.

King Abdul Aziz International
Airport Development Project
(P1070) Jeddah, KSA
Influenza Vaccine Campaign
2020



1210, Ghazeer Project, Oman
Flu Vaccination Campaign
2020



CCC's Corporate Volunteering Program

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.

"When the Going Gets Tough, the Tough Get Going", CCC's Corporate Volunteering Program Goes Global

Rosie Nasser

Isolation. Quarantine. Social Distancing. Masks. Lockdown. These are the words that we heard and had to work with during the COVID-19 pandemic. On the positive side, the pandemic also meant responsibility, togetherness, adaptation and opportunity.

With the outbreak of the COVID-19 pandemic and the numerous lockdowns, we all faced challenges on how to adapt to working remotely; similarly CCC's Corporate Volunteering Program faced some setbacks and many planned volunteering activities were cancelled. However, this led CSR to think outside the box, and obliged us to look into alternative ways of achieving our mission, of engaging staff to make a positive impact on our communities, while at the same time safeguarding and protecting them. In other words, we realized the immensity of the issue at hand, accepted it as a hindrance to progress, and turned this obstacle and challenge into limitless opportunities.

CCC's Volunteering Program shifted into on-line volunteering which in turn resulted in expanding CCC's employees' engagement on a global level. As an example, on-line volunteering has opened the opportunity for a volunteer in Qatar or the UAE to provide assistance to a charity serving the educational needs of refugee youths in Greece. The needs of nonprofits and charities for volunteer assistance continued during the pandemic, and for many have increased tremendously. The blessing of COVID-19 is that one can sit on Zoom and give tremendous value to organizations that are trying to survive through difficult challenges. CSR has been reaching out to various NGOs and connecting CCC volunteers from various countries of operation to NGOs to provide them with their professional expertise. Some examples of e-volunteering include on-line training, webinars, mentoring, translation, research, writing and editing, social media management, campaign coordination and graphic and interior design.

Today I am happy to say that we turned the difficulties and challenges to limitless opportunities, and special gratitude goes out to all of the volunteers for their selfless acts of kindness.



CSR: CCC's Corporate Volunteering Program

Make-A-Wish

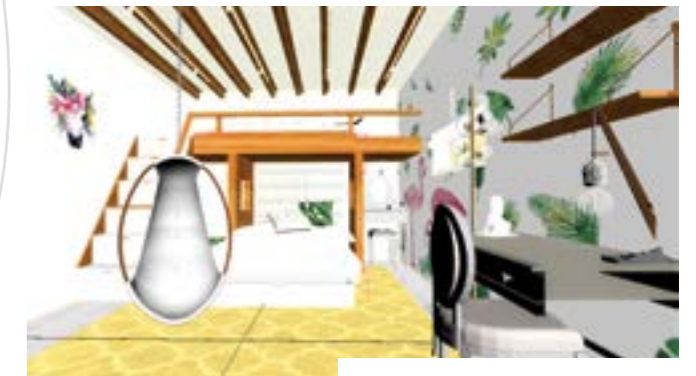
A Wish Come True for Angeliki

In March 2021, two volunteers worked with **Make a Wish Foundation** to create a bedroom design for one of their wish kids. Mrs. **Basma Alhuseini**, Design Project Coordinator, and Ms. **Nathalie Rayya** who is CCC's GVP, Sales, Proposals and Support; Mr. **Hani Rayya's** daughter, created and presented two 3D design options for 11-year old **Angeliki** whose only wish is to re-design her bedroom.

The Foundation's mission is to create life changing wishes for children with critical illnesses, and the volunteers' talent and time effort helped in bringing hope and strength for Angeliki.



Proposal 1



Proposal 2



CCC Ramadan Giving

Greece | Oman | Kazakhstan | UAE | Qatar | Saudi Arabia

CSR: CCC's Corporate Volunteering Program



Providing Support to SOS Children's Village in Algeria

To improve the living conditions of 105 children living in foster care, CCC donated used furniture to support the work of SOS Children's Village. Eight beds, eight mattresses, two wardrobes and four bedside tables were transported by CCC's volunteer, Mr. Hacem Daoudi, to the SOS Children's Village. In Algiers, thousands of street children are struggling to survive without any support from their families. SOS Children's Villages have been reaching out to the country's young people and children in order to provide them with a home, create a family environment, and protect them. In short, SOS' support will help children develop resilience and provide them with renewed hope for their future.



CCC Volunteers Build and Reinforce Dams in the District of Zhylyoy

From March 1st to the 19th, CCC employees volunteered to build dams on two banks of the Emba River to avoid flooding in Zhylyoy district, in Atyrau. In addition, CCC allocated a cargo dump truck and a loader to strengthen the dams of Zhylyoy's settlements. With the dense melting of snow and the absence of a reservoir in the upper reaches of the river, the settlements of the Zhylyoy district located in the lower reaches of the Emba River were endangered from over flooding.

Reaching the Zero Malaria Target in Nigeria

On the occasion of the World Malaria Day, CCC volunteers in collaboration with local government health officials, visited three rural communities of Obetim, Oleh and Ozoro to raise awareness about malaria and prevention measures. The highlight of the awareness day was the distribution of anti-malaria mosquito nets and mosquito repellent creams to the most vulnerable residents of the communities.

The geographic location and climate of Nigeria makes it suitable for malaria transmission throughout the country and thus 76% of the population lives in high transmission areas. CCC Public Relations Officer and HSE Administrator kicked off the awareness day by providing important information about malaria, its causes, and most importantly how to prevent it to the residents of the 3 communities. Some of the preventive measures discussed include the use of mosquito nets, use of mosquito repellent creams and the use of anti-malaria drugs. The local government health officials also talked about the need to maintain proper sanitation in their communities to avoid the buildup of mosquito habitats.





CSR: CCC's Corporate Volunteering Program



Reparation of the Assumption Cathedral in Atyrau on the eve of Easter - Kazakhstan

CCC in Kazakhstan sponsored and oversaw the reparation of the Assumption Cathedral in Atyrau. Built in 1888, the cathedral is one the oldest architectural building in the city and needs continues repairs as it is located in the lowest part of the city and exposed to high levels of saline soils which causes the external and internal walls of the building to decompose.

Together CCC's and the Cathedral's volunteers cleaned the facade walls from old plaster and paint, replaced some of the destroyed masonry bricks, plastered, primed, and painted the facade, and treated the walls with a protective solution against salt.



Tree Planting in Greece & Kazakhstan

April - May 2021

1,140

TREES PLANTED

222

VOLUNTEERS

414

HOURS VOLUNTEERED

5,800

BENEFICIARIES



Mother Earth thanks the volunteers



CSR Projects / Initiatives

Article by: R. Nasser

Education for All: Empowerment of Vulnerable Women - Kazakhstan

In March 2021, CCC in Kazakhstan signed a project agreement with Zhurekten Zhurekke Fund, to provide professional training and career development for underprivileged women in the city of Atyrau. Entitled: "Education for all; Empowerment of Vulnerable Women", the project is divided in two phases: phase one will train women in various trades, and phase two will focus on their employability. The six-month project aims to improve the standard of living of socially vulnerable unemployed women, single mothers and those who come from low income families.



The first phase of the project started in May 2021 and out of 800 applicants, 100 women were selected to start their theoretical and practical training in various trades such as: social media experts, make-up artist, seamstress, beauty care experts, and cooking. In accordance with the COVID-19 safety protocols, the women were divided in groups of 10-15 in each training.

Grant Writing Workshops for Researchers in Africa

CCC signed a letter of Agreement with the African Research Excellence Fund (AREF) to provide two Grant Writing Workshops for talented African researchers. The workshops aim to assist researchers in their critical stage of their research careers by increasing their capability to write comprehensive and successful proposals that will help them solicit funding for their research.

AREF's professional development programs assist researchers in Africa to compete internationally for research funding and produce internationally impactful research outputs. After analyzing the participation of previous workshops, AREF identified a gender gap as well as a nationality gap. Only 32% of participants were women and a number of countries in Africa and significantly so from previous war-torn countries like Sierra Leone and Liberia have not been represented. Therefore, the planned workshops will target women researchers and people from selected underprivileged communities to increase outreach and support a broader range of researchers in Africa. The two workshops are scheduled for September and October 2021.

Career Development, Innovation, and Social Entrepreneurship - Uzbekistan

On March 22, with the assistance of CCC, a workshop to encourage youth innovation and entrepreneurship was organized by the Youth Affairs Agency and United Nations Development Program (UNDP) and held at the Youth Council of Andigan region of Uzbekistan. CCC's Architect, Mr. Ramzi Abunemreh, was invited as a speaker to address a group of 100 participants ranging from 16 year old youth to 30-year-old experienced professionals. With focus on career development, innovation, and social entrepreneurship, Abunemreh's presentation aimed to enrich and encourage the contribution of youth to the emerging global challenges through developing an analytical problem-solving approach.



CCC's organizational assistance and contribution to the workshop, falls under one of CCC's CSR priorities of innovation, science and technology, and Abunemreh's participation in the workshop is a first step of CCC's planned involvement in employing and contributing to innovative approaches to elevate human potential in the region. Regional Managing Director of Kazakhstan and CIS Region, Mr. Hisham Kawash, stated: "as a leading global contractor, CCC aspires to enrich individuals, support in recognizing the nation's potential, and build a brighter future for generations to come."





Recycling Efforts to benefit the community and safeguard the environment - Greece, Kazakhstan and Botswana

Recycling efforts means fewer raw materials are required for the production of new furniture, preventing unnecessary pollution, saving energy, and reducing the amount of waste being sent to landfill or incineration, making CCC's contribution to climate change just a bit smaller.

GREECE

In cooperation with the **Services and Relations Department**, the CSR Department in Athens found a new home for 37 unused cabinets, 23 filing drawers, 23 desks, and 49 chairs. The furniture was donated to **Faros Elpidas** (Lighthouse of Hope) which is a charitable organization founded in 2003 to support and provide food, medicines, clothing and other goods to 9,000 beneficiaries every month. They have 16 operational branches and shelters in Attica, 6 grocery stores, 5 social pharmacies and a soup kitchen.

In addition, CCC donated a desk and 100 chairs to **Axias Zois**, an organization which supports all vulnerable groups of the Greek population, such as the unemployed, the homeless, the needy, and abused women and children. The furniture was distributed to schools in the region of Evritania, in Central Greece.



BOTSWANA

In Botswana, to better serve the community of Gaborone and speed up the service delivery of the Taung Customary Court, CCC in Botswana provided the Court with a full set computer. The request for a computer came from the Chief of the Bamaletle Tribal Administration's Customary Court who said that having a computer will make a great difference in efficiently serving and ruling on various social issues of the community.



KAZAKHSTAN

CCC recycled 300 project camp mattresses which were no longer needed, to three NGOs: the **Center for Adaptation of the Disabled** (Atyrau), the **Balyksha Society for the Disabled**, and **Zhurekten-zhurekke** which serve the needs of bedridden disabled people. The mattresses were collected by CCC volunteers in storages before their transportation to the NGOs. Besides supporting the living conditions of bedridden people, recycling of mattresses or any piece of furniture saves the need for raw materials for making new products, reduces the consumption of resources, and reduces waste.

The recycling activities feed into CCC's Sustainability Policy which maintains that CCC will reduce environmental impact whenever possible, and minimize waste and implement recycling initiatives whenever feasible.



Easter Bake4Good Initiative; Provides a Sweet Relief to Needy People

In Cooperation with **Emfasis Foundation**, CSR in Athens engaged employees and their families in baking sweet delights to provide the spirit of Easter to the poorest families in Athens. CCC employees involved their loved ones in baking cookies, cakes and Easter sweet bread (tsourekis) to share with homeless people living under very difficult conditions. The Easter sweets were distributed by Emfasis' volunteers to 255 homeless people and families living under the poverty line all around Attica, Athens and Pireaus.



CCC Assists Low-Income Families in Kazakhstan

To mark **Thanksgiving Day** in Kazakhstan, CCC on March 1, provided more than 100 low income families with vouchers to help them in their daily sustenance. CCC in coordination with the **Department of Employment and Social Programs**, the **Department of Internal Policy**, and the municipal district of **Zhylyoi**, selected 100 poor families from Zhylyoi, and 15 families from Atyrau to receive vouchers worth of 10,000 Tenge. With the vouchers families will be able to buy groceries in one of the city's supermarkets. This is not the first charity event organized by CCC, and will not be the last as CCC will continue to support and cater to the needs of support low-income segments of the population.



Palestine Appeal - This can be posted as an announcement

In the face of atrocities against Palestinians, CSR in cooperation with **Doctors of the World** (Médecins du Monde) and the **Welfare Association** (Al Taawon) launched a fundraising campaign to provide urgent humanitarian support and urgent basic needs to strengthen steadfastness of Palestine and the Palestinians in their struggle for self-determination and their basic human rights. For Donations contact CSR at csr@ccc.net





Employee Welfare Activities

Article by: R. Nasser

COVID-19 Awareness and Prevention in Saudi Arabia

CCC in cooperation with the **Ministry of Health** staff, CCC's clinic staff, volunteers from various departments, and the welfare committee worked together to provide camp residents with the support and information needed to protect themselves during the outbreak of COVID-19. To minimize spreading, a new committee was formed to monitor and ensure that preventive protocols (social distancing, masks, and hand hygiene) were being followed.

The awareness building and preventive measures undertaken included the following:

- Several meeting sessions on the nature of the virus its features and preventive measure were held for the camp residents.
- Information about the importance of social distancing, the wearing masks and hand hygiene was sent out to residents through videos, and posters.
- Thermal scanning and symptoms were checked in all common spaces like the mess halls, and the common entry points.
- Mass testing was carried out for all residents and all positive cases were quarantined in temporary COVID-19 clinics, and those who were in close contact with them were also put in isolation. Highly symptomatic patients were transferred to hospitals as needed.
- A 24/7 Call Centre that included multilinguistic skilled people was set up to address the psychological impact of the pandemic on the residents who with the uncertainty of the situation were under a lot of stress.

It was the group effort of all the departments who worked for the common objective to safeguard and protect the camp residents, together with the exemplary work of the clinic staff, and the effective leadership was key to come out of the crisis without much damage.

South Village Basketball Tournament

Camaraderie and fun among the Filipino community in South Camp Village.



RMTC HSE Annual Awards

Oruba and South Village Camp received awards to recognize their outstanding performance in safety, health and environmental management. Oruba village camp received 100% score and the South village camp received 99.83% score for complying with the environmental, health and safety rules for the welfare of camp residents.



Best Regional Practices Forum Sustainability Challenged

Article by: R. Nasser



Organized & Designed by



In Partnership with



and the Support of



On January 23rd, CCC's CSR Consultant, Rosie Nasser represented CCC in the CSR Forum 2021 Entitled: "Sustainability Challenged - Best Regional Practices 2020-2021". The forum was organized by the CSR Division of **Al Ahli Holding** in partnership with the **University of Sharjah**, **Balamand University** and **Zayed University** and with the support of **Bank Audi**, **Aramex**, **Alturki Holding**, **Schneider Electric** and **CCC Group**.

The aim of the forum was to give a global overview on the main trends of CSR activities in challenging time such as the present one and bring CSR practitioners from several countries to discuss strategies, policies and actions that they are undertaking in times of the COVID-19 pandemic that can support business transformation and spur innovation globally.

Due to COVID-19 restrictions, the forum was hosted online allowing the participation of over 100 people from local universities, companies, NGOs and governmental agencies. The online format, although being challenging, was a great opportunity to extend the scope of the Forum well outside the border of the UAE, making it an outstanding regional event with speakers and audience from the Emirates, Lebanon, Jordan, Egypt, Saudi Arabia, among others.

Ms. Nasser participated in the "Sustainability Regional Best Practices 2020-2021" panel where she delivered a talk about CCC's commitment to CSR, the application of its strategy on 4 levels: **good governance**, **protection of the environment**, **the wellbeing of employees**, and **social investment in communities**. In addition, Ms. Nasser talked about CCC's response to COVID-19 crisis with focus on the wellbeing of employees, the clients, and the communities at large. In response to the challenges faced during 2020, Nasser talked about the involvement of CCC's volunteering program, the re-thinking of its procedures to adapt to the global challenges while giving examples of CSR activities that address these challenges.

As showed in the insights shared during the event, corporations are taking the lead in the transformation of the labor system moving from fixed working hours to a KPI management style, they are leading in terms of community engagement and empowerment of the unprivileged, they are transforming their daily operations in order to preserve natural resources and use them in a wiser way and in promoting a culture of volunteering among their employees.

Furthermore, the advocated responsible behaviors and the interactions between the public and private sector are even more important in emergency times that require fast and committed actions to provide relief for employees and the communities. All the speakers in the Forum presented how all their companies adapted to the new reality due to the COVID-19 pandemic and how they all played a role in emergency relief.

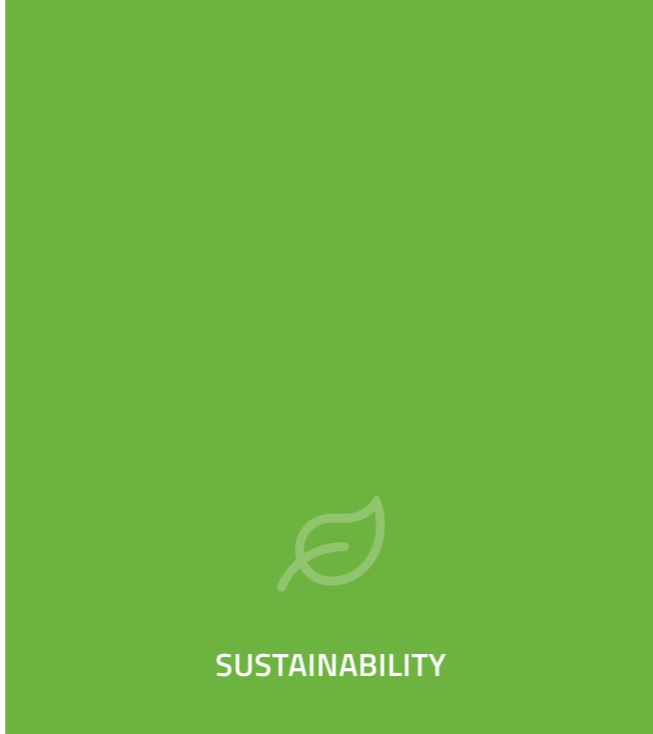
Circular Economy Approach CCC Sustainability Strategy

Article by: S. Thabet

Sustainability is the continuity of a business now and in the future. It involves the ability to maintain or support an activity or process over the long term. CCC is 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 wherever we operate. 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. To facilitate the integration of sustainability across the company, CCC has established a solid internal pledge, grounded upon specific strategies, procedures, and structures. Our ISO certified, environmental management system (EMS), corporate policies, project manual, camp manual, green construction guideline and supply chain sustainability assessment tool are examples of how we embed responsible practices in our decision making and operations. We have also established procedures to monitor sustainability metrics and track local as well as global developments.

We are specialized in the construction of megaprojects (either civil or mechanical), across the MENA region, CCC has completed eight certified green building projects, and we are currently managing seven major projects aiming for certification, worth in total 5 billion US dollars. We recognize that construction companies play a vital role in promoting long-term sustainable value for society. Therefore, we are increasingly concentrating on the business opportunities of green building megaprojects, and for the near future, CCC is well placed as a leading Green solutions provider.

CCC has streamlined its corporate sustainability strategy with the UN's SDGs for 2030. We are particularly committed to specific goals and follow targeted strategies. For instance, we resonate SDG's "#4-Quality Education" and "#8- Decent work & Economic Growth" by focusing on vocational training in the various countries where CCC has an operational presence. The objective here is to empower the local workforce with technical skills and build competent manpower for our projects. SDG's "#9-Build Infrastructure & Foster Innovation" and "#11- Make Cities Sustainable" are directly relevant to our core activities of providing infrastructure that matters. CCC's projects in transportation, water infrastructure, green building, and solar energy address global infrastructure needs and also provide sustainable solutions for the delivery of reliable energy, clean water, transportation, and



housing. SDG "#12- Sustainable consumption and production" for CCC translates into taking responsibility of how materials are sourced, used, and disposed throughout the life cycle of projects. Applying conscientious material procurement, using advanced technology, and following circular economy principles, significantly reduce projects' environmental impacts. On-site sewage treatment systems, reuse of construction waste and recycling materials are some of the targeted practices CCC applies.

We focus on reducing our environmental impact by reducing our Environmental (Carbon/Water) footprint through efficiency measures and sourcing of sustainable materials. We are committed to securing a safe and healthy workplace for our employees. We have also reserved space for volunteering activities that reflect our employees' spirit to support the local communities.

CCC's sustainable management of resources aims to preserve raw materials and resources over our built environment's life cycle. In line with the concept of a circular economy, we focus on the three key areas:

- Using materials with high recycled content;
- Reusing what already exists. Existing products, once used, are reused or recycled to make new products which will be used on the Jobsite;
- No resources are disposed.

Integrating sustainability within the company strategy has led to the achievement of our social, environmental, and economic goals.





Pursuing LEED Gold Rating Msheireb Downtown Doha (MDD)

Article by: **A. Abou Zaki**

Msheireb Downtown Doha (MDD) is a pioneering project developed to revive the old commercial centre of the city of Doha by bridging the past with its cultural ties and ancestry, with the demands of a modern day city. The development aims to build sustainable and innovative initiatives that enrich communities and individual lives, promote environment friendly living and rediscover and implement heritage and culture.

MDD Phase 4 is pursuing LEED 2009 Rating System to assess the buildings within the development. The following rating systems are being considered:

- **LEED for New Construction and Major Renovations (LEED-NC):** For the residential and hotel buildings (Superblock X).
- **LEED for Core & Shell (LEED-CS):** Mainly for the Core and Shell commercial, office and retail buildings (Superblocks Y, W and Z).

The project aims to have a number of sustainability measures implemented in the design. The first target is for each individual building to achieve a minimum of LEED GOLD Rating.

MDD 4 is currently in the final stage which and the Certification process are split into 4 phases:

- Phase 1: Y01/Y02, Y03/04, W02, W04
- Phase 2: X03, X06
- Phase 3: X04
- Phase 4: Z1Z4, Z07

For New Construction projects we are currently working on the last two credits required for the upload. The Two credits are IEQ Prerequisite 2 "Environmental Tobacco Smoke" and IEQ Credit 3.2 "Construction indoor air quality management plan Before Occupancy".

Let us brief you a little bit on those two credits.

IEQ Prerequisite 2 "Environmental Tobacco Smoke"

It focuses on the importance of a blower door test to determine the home's air tightness; there are some reasons for establishing the proper building tightness:

- Reducing energy consumption due to air leakage.
- Avoiding moisture condensation problems.
- Avoiding unconditioned drafts caused by hot air leaking in from the outdoors.

Blower door is a powerful fan that mounts into the frame of an exterior door. The fan pulls air out of the house, lowering the air pressure inside. The higher outside air pressure then flows in through all unsealed cracks and openings. The auditors may use a smoke pencil to detect air leaks. These tests determine the air infiltration rate of a building.

Blower doors consist of a frame and flexible panel that fit in a doorway, a variable-speed fan, a pressure gauge to measure the pressure differences inside and outside the home and an airflow manometer and hoses for measuring airflow.

The test is considered successful if the results were less than 1.25 sq. inches leakage area per 100 sq.ft of Enclosure area (i.e. Sum of all wall, ceiling and floor areas).



Number of testing points from the identical apartment shall be as per following table:

TYPICAL DWELLING UNITS	NO. OF UNITS X	SAMPLING (X-1)/7+1
Type A	13	3
Type B	8	2

The project team shall follow procedure from ASTM E779-03 effective leakage.



SUSTAINABILITY: Msheireb Downtown Doha (MDD) Pursuing LEED Gold Rating

continued from page 53

Standards

The maximum 180-day period shall begin on the date of the first Certificate of Field Verification and Diagnostic Testing for the group and shall end either with the date of the last verified test from the group or 180 days, whichever is less.

Once all homes in the group have been certified, the 180-day clock is reset.

Dwelling units within the group for which a Certificate of Field Verification and Diagnostic Testing has not been completed within 180 days from the date of the first Certificate of Field Verification and Diagnostic Testing for the group, as determined by the HERS provider, shall either be individually tested or be included in a group of dwelling units in a subsequent sample period.

Challenges during Door blower tests:

- Air gaps on the façade and was not sealed properly.
- Gaps between floor tiles and façade.
- Gaps between block walls and ceiling slab.
- Improper head of join implementation.
- Improper sealant around MEP penetrations.

Lesson learned to avoid test repetition:

- False ceiling should not be closed prior door blower test.
- Proper sealant around MEP penetrations.
- Proper head of wall application.
- Proper installation of fire dampers with access panels and to closed properly prior door blower test.

IEQ Credit 3.2 "Construction indoor air quality management plan Before Occupancy"

Msheireb Down town strives to provide all building occupants with an environment that maintains acceptable indoor air quality. The Indoor Air Quality (IAQ) Management Plan is designed to protect the health and safety of building occupants and decrease exposure to indoor air contaminants.

Indoor Air Quality Management (IAQM) is an essential process to determine the level of contaminants present in indoor air and predictive-ly and proactively optimize airflow while minimizing wasted energy costs via occupancy sensors, modelling and air quality data, demand control ventilation, outside air economizing and other tools.

The test is considered successful if the results were:

- Formaldehyde (Maximum Concentration 27 ppb).
- Fine Particulates (Maximum Concentration 50 ug/m³ PM10).
- Total Volatile Organic Compounds (TVOCs) (Maximum Concentration 500 ug/m³).
- 4-Phenylcyclohexane (4-PCH) (Maximum Concentration 6.5 ug/m³).
- Carbon Monoxide (Maximum Concentration 9 ppm).



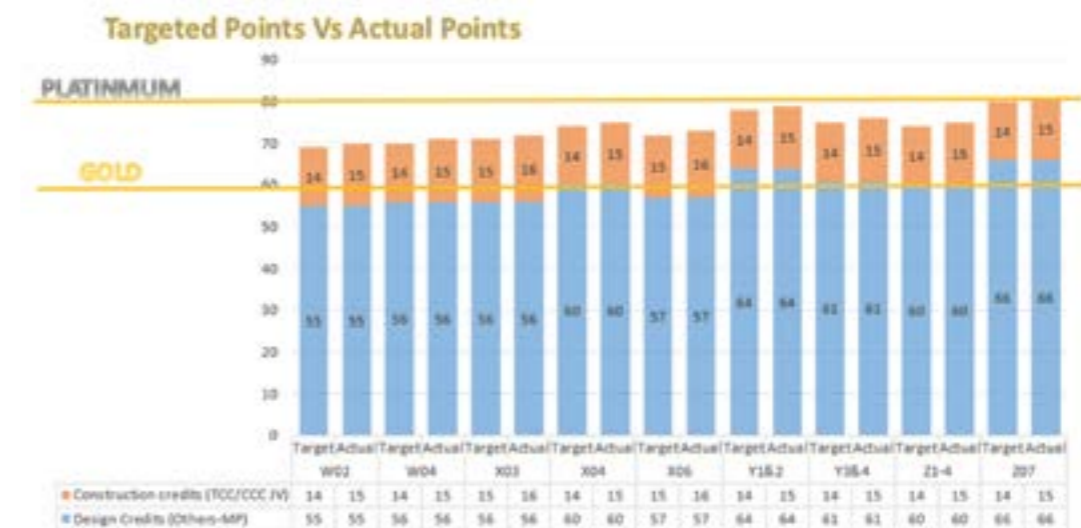
SUSTAINABILITY: Msheireb Downtown Doha (MDD) Pursuing LEED Gold Rating

LEED Online upload started for the below Three buildings.



CREDITS ACHIEVEMENT BASED ON PERCENTAGE OF SUSTAINABLE CRITERIA ACHIEVED						
Credit ID	Credit Name	Status	Target		Status	
			Percentage	Points	Achieved	Points
MR Cr2	Construction Waste Management	In progress	75%	2	86.20%	2
MR Cr4	Recycle Content	Completed	10%	1	23.50%	2
MR Cr5	Regional Materials	Completed	10%	1	25.60%	2
MR Cr7	FSC Certified Wood	In progress	50%	1	100.00%	1

Two buildings out nine buildings are now targeting PLATINUM due to the additional points received through the construction credits.





SUSTAINABILITY: Msheireb Downtown Doha (MDD) Pursuing LEED Gold Rating

continued from page 56

As explained previously Phase 4 building were targeting **GOLD** certification, CCC did their best to achieve platinum certification for some buildings, we have to achieve exemplary performance on the following two credits "MR 4, MR 5 and EAc5.1".

For MR 4 "Recycled Content"

We made sure that all the BIG tickets that will affect the percentage of the recycled content are complying with the credit rules which is minimum of 10% of pre and post recycled content value.

For example, the BIG tickets were, block walls, concrete and steel.

As for MR5 "Regional Materials"

We have asked all the contractors to provide manufacturer locations and to make sure that all the small and the big tickets are complying with the 600km radius or **global alternative compliance path** to achieve the exemplary performance.

Measurement and Verification-Base Building

We will be submitting a plan to illustrate how measurements and verification will be done for Core and shell building. And this plan will be used later by the facility management.

Lessons learned in the MDP4 project

1. Allow while tendering for the following tests and to be considered while pricing, since the below tests should be done in case buildings are being LEED certified:
 - a. VOC test as per USEPA 24 standards for adhesives, sealants, and paints.
 - b. Solar roof index SRI test as per ASTM, the pavers were sent to Canada for testing.
 - c. CDPH certificate for walls, ceilings and insulations, tests were done in Dubai.
 - d. Door blower test (explained above).
 - e. IAQ test (explained above).
2. Tool box talks for workers, engineers, and managers is very essential to be done at the beginning of the project and on every month in order to reduce the mistakes at site that might cost extra money and materials:
 - a. Avoid mould on gypsum boards,
 - b. Covering all the sand bags,
 - c. Daily housekeeping to above accumulated dust as shown in picture A,
 - d. Proper placement of water absorbent materials that should be stored on pallets,
 - e. Protection of all air ducts to prevent dust accumulation and filter blocking as shown in picture B,
3. Sequence of work to be properly followed between MEP installation and civil activities specially façade closure,
4. Ventilation plan to be prepared for basements and any closed areas prior starting the work in order to procure the proper equipment prior starting the activities,
5. Washing stations for every vehicles exiting the project, it should be planed ahead of time to allocate a place for it,
6. Spraying the ramps by water to avoid soil erosion and pollution. It should be planned ahead of time to a reserve the water tankers trips,
7. LEED bulletin boards placed everywhere to increases the awareness of the workers and the engineers,
8. Multiple types of skips to provided on site per description below and to be properly labelled and segregated as show in picture C:
 - General Waste
 - Wood
 - Plastic
 - Metal
 - Hazardous Waste
 - Concrete
 - Food Waste
 - Paper and Cardboard

CCC - A SUSTAINABLE ORGANIZATION

WE CONTRIBUTE TO **SUSTAINABLE DEVELOPMENT GOALS** | WE SUPPORT United Nations Global Compact | WE REPORT ACCORDING TO Global Reporting Initiative GRI



OUR MISSION IS TO BE A LEADER IN SUSTAINABILITY IN THE ENGINEERING AND CONSTRUCTION BUSINESS

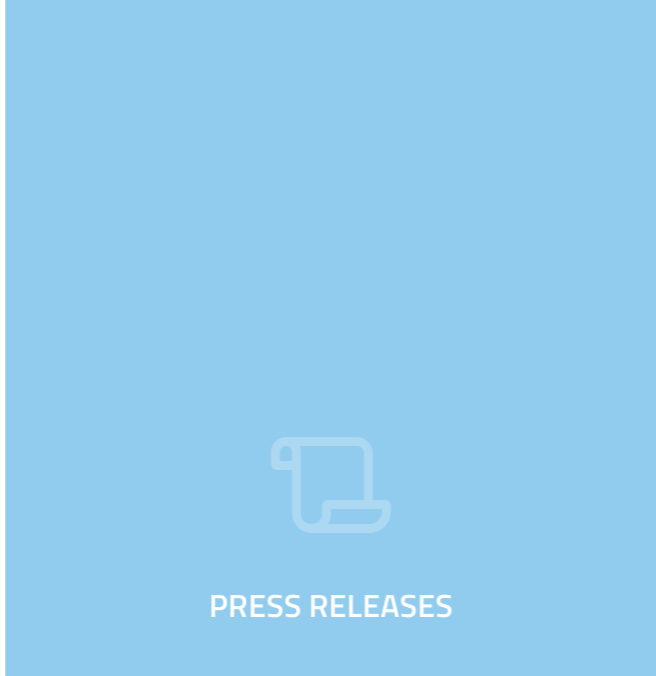
Achievements so far:

- Raising the Bar for Sustainable Infrastructure: 15 Green Building projects completed or nearing completion.
- Sustainability across Projects' Life Cycle: 100+ best practices realizing financial, societal and environmental goals.
- Recognition of Sustainability Excellence: 8 Sustainability awards received.

ISO 14001 | U.S. GREEN BUILDING COUNCIL MEMBER

Demonstrator Plant in the Middle East in partnership with Fusion Fuel CCC to Develop Green Hydrogen Plant

Article by: **B. Alhousseini**



On May 20th, 2021 **Consolidated Contractors Company (CCC)** has partnered with **Fusion-Fuel Green PLC**, a green hydrogen technology company, to develop green hydrogen plants in the Middle East.

Fusion Fuel's mission is to provide the world with innovative green hydrogen solutions that accelerate the transformation of the global energy sector and enable the sustainable reduction of carbon emissions. Fusion Fuel has developed a revolutionary new electrolyzer design (HEVO) that allows it to produce hydrogen using renewable energy at highly competitive costs without any associated carbon emissions.

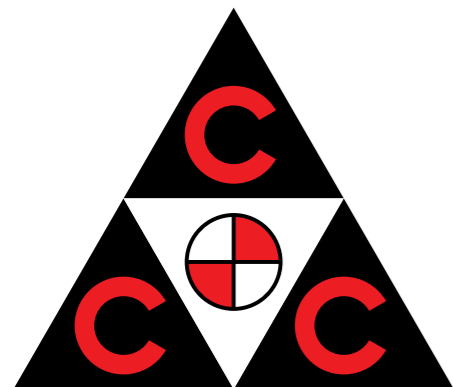
CCC and Fusion Fuel have agreed to cooperate on projects involving the production of green hydrogen for potential clients in the refining and petrochemical industries in order to reduce their carbon footprint. The companies plan to develop demonstrator plants in several countries in the region, namely Oman, Kuwait, and Qatar.

HEVO-SOLAR is the exciting result of the combination of over a hundred of Fusion Fuel's revolutionary HEVO electrolyzers with a specially-designed high efficiency concentrated photovoltaic (CPV) solar module, a solution designed to make optimal use of both the electrical and thermal energy from the sun.

The CPV cell converts more than 40% of solar energy it captures into electricity, while the remaining 60% given off as thermal energy. By attaching HEVO directly to the CPV solution, HEVO is able to utilize the electrical energy without transport or conversion losses, while also benefiting from the thermal energy to pre-heat the water and reduce the energy load required for electrolysis. HEVO-SOLAR can produce up to 2 tons of Green Hydrogen per year.

"We are delighted to be partnering with the CCC to open this new market," explained Joao Wahnon, Head of Business Development at Fusion Fuel. "The Middle East represents a big opportunity and a very promising region for us, given the high levels of solar exposure, strong appetite for green hydrogen projects, and strategic geographic position between Europe and Asia. We are excited to bring Fusion Fuel's revolutionary technology to the Middle East."

Dori Barakat, Director of Business Development at CCC added: "We are very pleased to cooperate with Fusion Fuel towards the building of Green Hydrogen and Ammonia plants and to bring our expertise in construction projects, particularly in the Middle East. This cooperation between our companies will generate new opportunities in the development of green energies."



[PRESS RELEASES: CCC Develop Green Hydrogen Demonstrator Plant in the Middle East in partnership with Fusion Fuel](#)



MILESTONES

Sebastian Yesudasan (BSNP, Qatar) and his wife Ginu Felix are pleased to announce the birth of their second child. It's a boy and his name is **Marco**. He was born on December 16th, 2020 in Doha, Qatar.

Basem Nofal (WMFF, Qatar) and his wife Rasha Elayyan are pleased to announce the birth of their baby girl **Seedra**. She was born on February 24th, 2021 in Doha, Qatar

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