



Construction and Sustainable Buildings Centre

First established in 1975 as the Building Materials Research Centre, and has developed throughout the past three decades to become the Construction and Sustainable Buildings Centre (CSBC). The Centre comprises of four main divisions; Buildings Rehabilitation and Reconstruction, Green Buildings and Cities, Building Codes and Projects Quality Control.

The Centre strives to be a premier promoter of the construction industry. With over 40 specialized engineers, our services cover inter-related fields of applied research, architectural, structural, mechanical, electrical and rehabilitation studies, geotechnical consultations, projects quality control, building codes and technical standards development, natural risks assessment, cultural heritage preservation, green buildings as well as providing specialized training and building technology transfer.

We serve a wide range of sectors in the construction industry such as the civil, architectural, and electro-mechanical sectors and we are accredited by Lloyds according to ISO 9001.

What we do:

- Studies and investigations to assess the durability and structural behaviour of building materials and systems
- Upgrade and retrofit existing structures
- Develop national and regional building codes and manuals
- Develop schemes to reduce risks of natural disasters
- Develop plans for new residential and industrial sites
- Assess green buildings according to the Green Building Guideline of Jordan
- Conduct quality control for material used in construction projects

We provide:

- Research and development projects in scientific and technological fields related to construction
- Cultural heritage studies
- Civil engineering consultancy, project management, and projects quality control
- Appraisal and rehabilitation of structures including condition evaluation, repair and retrofitting
- The application of green building guidelines during the three stages of new constructions and existing buildings leading to reduced energy and water consumption, upgraded efficiency, the conservation of natural resources and the sustainability of sites
- Development of new building systems, an example of which was Building System 5
- Development of codes, specifications and manuals for guidance in studies and constructions
- Capacity building, training courses, seminars and workshops





Examples of our recent projects:

- Aqaba Risk Assessment Study: This study used an integrated approach to provide an accurate assessment of earthquake hazards for the Aqaba Special Economic Zone (ASEZ), and to stand on the expected risks and losses due to a set of proposed earthquake scenarios. Detailed seismological, geophysical, geological and geotechnical investigations were also assembled in order to evaluate the geographical distribution of potential human and material losses due to the proposed scenarios.
- Evaluation of Seismic Performance of Residential Stone-Concrete Buildings in Jordan: This testing program aims to provide basic, yet unavailable, data on the response of stone-concrete residential buildings to lateral loads, specifically those of cyclic nature and that therefore simulate the effects of earthquakes. It also investigates the potential effects of some proposed changes to construction practices on the lateral strength and stiffness of stone-concrete buildings.
- Improving Construction Standards and Practice in Jordan: The main objective of this applied project is to improve building and vulnerability assessments through training inspection specialist engineers to identify safe and unsafe buildings, to give recommendations for retrofitting as well as to speed up the process of safety assessment when most needed – after being hit by an earthquake.
- Reusability of Sewage Sludge “Bio-solids” at Al-Ekeder Dumping Site in Clay Bricks Production: This research project seeks a new way of dealing with the mounting biosolids produced in many wastewater treatment plants

in northern Jordan that are currently dumped into the Al-Ekeder dumping site. Biosolids can be used as an alternative raw material if applied as partial replacement of clay for the manufacturing of clay bricks.

- Green Buildings: Since 2013 we have done numerous assessments leading to the certification of green buildings.
- Our centre is authorised by the Jordan National Building Council (JNBC) to issue green buildings certificates according to the Jordan Green Building Guide.

Facts about our centre:

- We published many of the national building codes and manuals, technical reports, studies and consultations, on average, more than 50 documents are published annually.
- iCOR, the world’s most advanced non-destructive testing (NDT) tool for detailed corrosion evaluation of reinforced concrete has been added to our division’s several NDT tools and equipment.
- Our centre addresses several sustainable development goals (SDGs) including SDG 11: Sustainable Cities and Communities and SDG 13: Climate Action.
- Our Building Codes Division published five updated National Building Codes and two new manuals according to the agreement with Jordan National Building Council.
- Last year the number of site surveillance conducted by the Projects Quality Control division was 4670 and the number of issued reports was 68.