

Implementing Digital Engineering Certification and Testing to Promote the High-Quality Development of Engineering Construction

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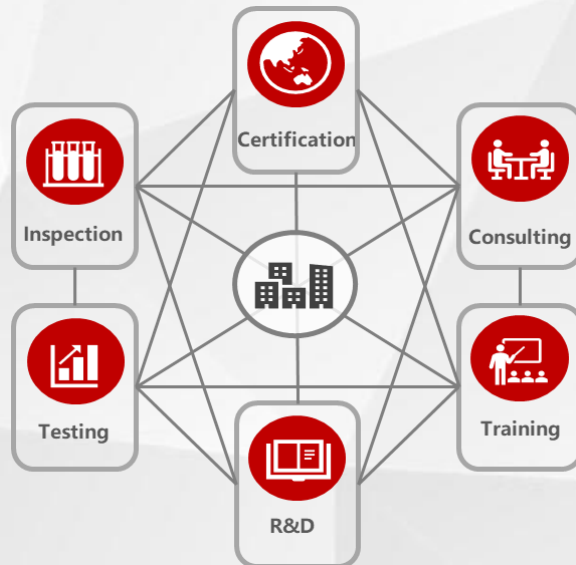


专业化·增值化·数字化·国际化
建筑业全产业链高技术服务平台

About JCC

Beijing Zhong Jian Xie Certification Centre (hereinafter referred to as JCC) is a certification body founded by the former Ministry of Construction and China Construction Industry Association (CCIA), under the approval of the Certification and Accreditation Administration of the P.R.C. (CNCA) and accredited by China National Accreditation Service for Conformity Assessment (CNAS). JCC is the executive member of China Certification and Accreditation Association (CCAA). As a second-party audit organization designated by the Ministry of Commerce, JCC once provided second-party audit for the Chinese government's foreign aid projects.

Under the guidance of the MOHURD and the support of the CNCA, JCC initiated the establishment of the China Engineering Construction Inspection and Certification Alliance in 2015 as a founding member. In 2018, the project of "Beijing 2022 Olympic and Paralympic Winter Games Organizing Committee Sustainable Public Participation Master Plan and Building NGO Platform" was formally implemented and commended. The "UNIDO China Construction CSR Project" undertaken by JCC was awarded an excellent project for the 40th anniversary of cooperation between the UN and the Chinese Government. In the same year, JCC was entrusted by Shanghai government to become one of the first members of the "Shanghai Brand" international certification Alliance, providing "Shanghai Brand" standards and certification services for outstanding enterprises in Shanghai.

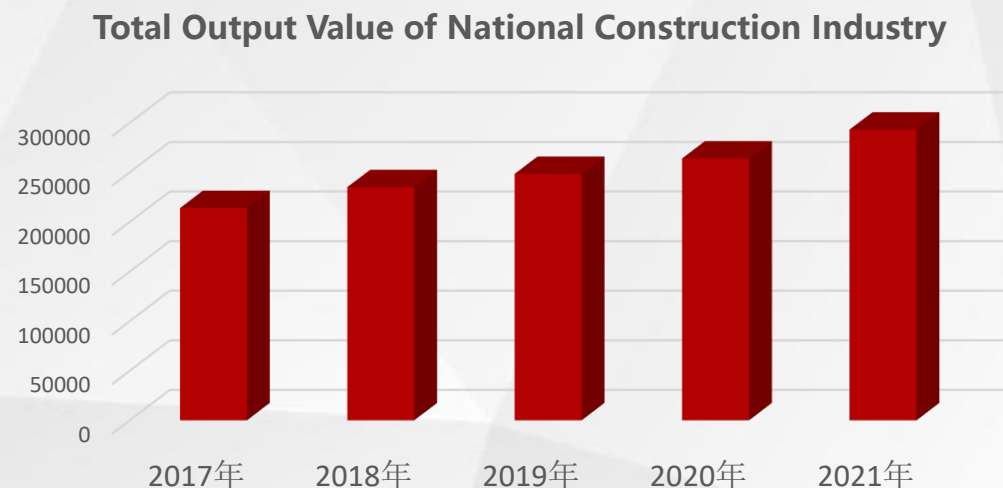


Six types of business coordinated development
JCC focuses on the entire industry chain of the construction industry to
provide professional services

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1. Background—— Industry background

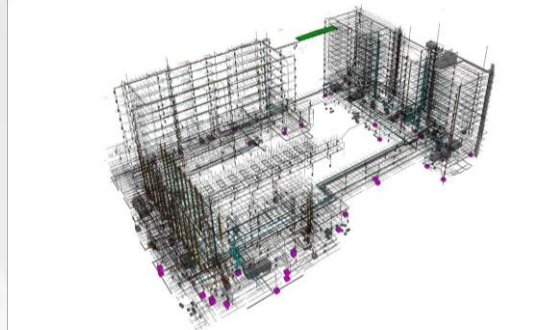
- ◆ Construction-related expenditures account for 13% of global GDP. In 2021, the total output value of the global construction industry exceeded 11.4 trillion US dollars, with more than 100 million people employed worldwide.
- ◆ **The total number of construction enterprises in China is 128,746.** Compared with 2020, there were more than 12,000 enterprises in 2021, with a growth rate of 10%.
- ◆ In 2021, the turnover of China's foreign contracted projects reached 999.62 billion yuan, and the newly signed contracts totaled 1.66768 trillion yuan.
- ◆ According to the global certification survey report released by the International Organization for Standardization, the number of ISO 9001 and ISO 14001 certifications worldwide exceeds 1.1 million, of which the number of construction companies has ranked among the top five for many years.
- ◆ **There are 58,565 construction enterprises** that have passed the 50430 certification in the construction industry, and **77,103 construction enterprises have passed the ISO 9001 certification in the construction industry, accounting for about 74% of the total .**



1. Background——Significance of digital engineering certification testing



Physical Building



Digital Building

Digital engineering has penetrated into all aspects of the engineering construction industry chain. However, the quality control link is incomplete, and there is a lack of conformity assessment methods such as testing and certification to ensure the digital construction of projects and the quality of digital assets in buildings, and to transmit trust.



ISO 19650 standard is the basic methodology for BIM organization and management based on ISO 9000, ISO 21500, ISO 55000

International project owners often require bidders to have ISO 19650 certification to transfer trust and promote the development of trade in engineering services.



Panama Canal Fourth Bridge Project of CCCC

2. The Development of Digital Engineering Certification



The former Ministry of Construction approved the quality management system certification.



CNCA and the MOHURD decided to carry out engineering construction use and enterprise quality management system certification in the field of construction.



The former AQSIQ and the jointly signed "Strategic Cooperation Agreement for Comprehensively Promoting Certification and Accreditation Development in the Field of Housing and Urban-Rural Construction"



In 2018, China BIM certification system was released for the first time

1994

2010

2017

2018

Now

2021

2020

2019

Now, it has included ISO 19650 management system certification, enterprise BIM center star service certification, engineering project service certification, software and hardware information environment assessment of the digital engineering certification system, covering construction, municipality, rail transit, electricity and other fields.

The Alliance and China Electricity Council conducted a research on the BIM certification system for power grid engineering. Constructing the certification and evaluation system conforming to the reality.



The Digital Engineering Certification Alliance and CR BIM signed a strategic cooperation agreement to jointly build a rail transit digital engineering certification system. The development of digital engineering certification to the sector of railway



Under the guidance and witness of the Ministry of Housing and Construction, State Administration for Market Regulation and China Council for the Promotion of International Trade, Digital National Quality Infrastructure Alliance and Testing Center was officially established at the second CIE.



3. Digital Engineering Certification Cases

No.	Certification/Evaluation	Companies
1	Digital Engineering Management System Certification	BCEG No.3 Construction Engineering Co., Ltd
2	Digital Engineering Management System Certification	China Northeast Architectural Design & Research Institute
3	Digital Engineering Management System Certification	Shenzhen Residential Engineering Management Station
4	Enterprise BIM center star service certification	Shanghai Baoye Group Corporation
5	Project Service Certification	Shanghai Shanchuan Real Estate Co., Ltd.
6	Project Service Certification	Techsun Architectual Engineering Technology Company
7	Project Service Certification	Rizhao City Investment Land Co., Ltd.
8	Project Service Certification	China Architectual Design & Research Group
9	Project Service Certification	China Design Digital Technology CO., LTD.
10	Project Service Certification	CCCC NO. 2 Highway Survey Design & Research Institute Co., Limited
11	Project Service Certification	Shenzhen Residential Engineering Management Station
12	Project Service Certification	The Architectural Design and Research Institute of HIT
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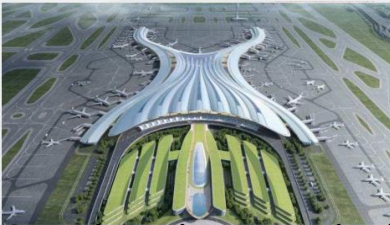
At present, digital engineering certification has been carried out for more than 60 projects to protect the quality of engineering construction.



China Railway Beijing Engineering Group Co.



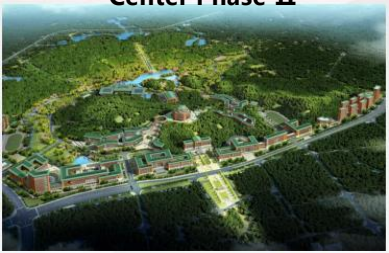
China National Convention Center Phase II



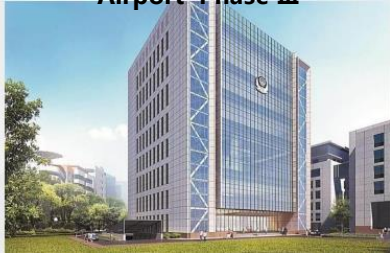
Guangzhou Baiyun International Airport Phase III



Universal Studios Beijing



Sun Yat-Sen University Shenzhen



CITIC Tower



CITIC Tower



Shanghai Tower



K11 ATELIER

4. Digital Engineering Certification Service-Beijing Winter Olympics

Winter Olympics- National Sliding Centre Digital Engineering Project Services Certification

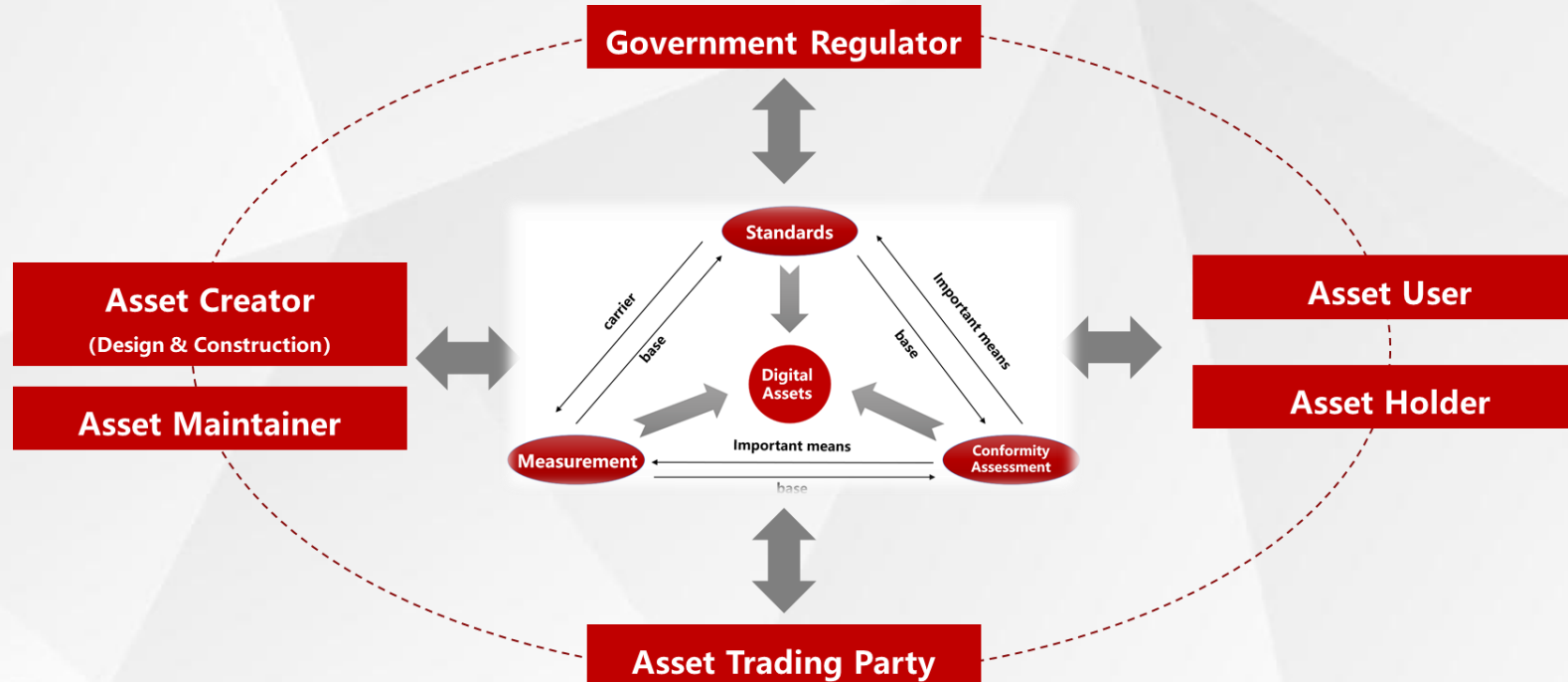


Helping companies...

- ◆ To establish information data standards, so that the data is applied in different stages, to improve the application value.
- ◆ To standardize the collaborative mechanism of digital technology application in the process of project, to improve the efficiency of collaboration.
- ◆ To establish digital asset quality assurance mechanism.
- ◆ To improve the standardization of digital delivery assets.

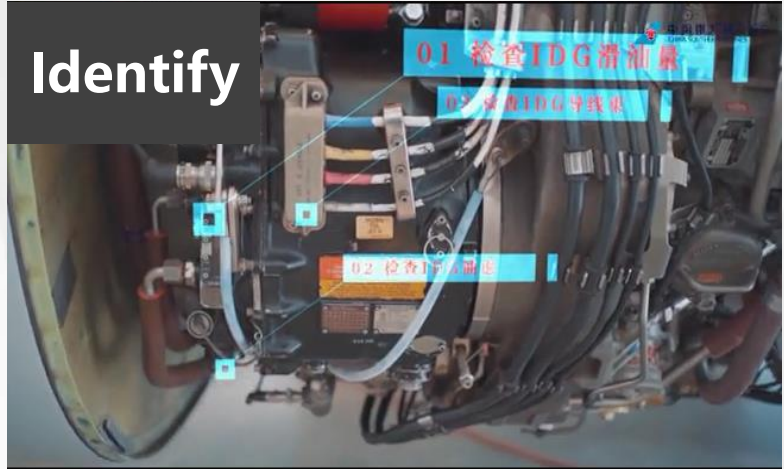
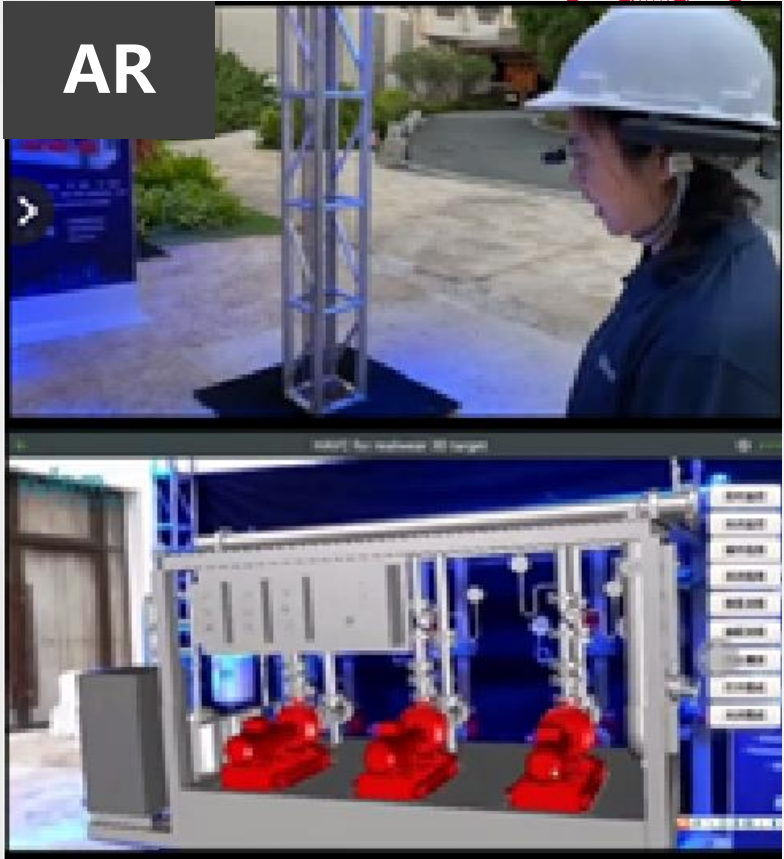
5. Problems

- The standard system of global digital engineering certification and testing still needs to be further improved.
- The existing conformity assessment system needs to add digital certification and testing related content.
- Lack of joint effort from all relevant parties.



6. Opportunities and Challenges

- 1. Building an all-round, all-factor international digital conformity assessment system on a global scale to serve the high-quality development of engineering construction.
- 2. Digital technology promotes in-depth changes in the certification and testing industry.
- 3. Digital certification testing to build a "fair scale" for digital carbon emission measurement.





北京中建协认证中心有限公司
BEIJING ZHONG JIAN XIE CERTIFICATION CENTRE CO.,LTD.

THANKS

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