The Key-Base Information Station for the Construction Industry to pave way for the Future
Japan Construction Information Center
General Incorporated Foundation
JACIC (Japan Construction Information Center Foundation) was founded in 1985 under authority of Ministry of Construction, Japan. The aim of the organization is to promote the application of Information and Communication Technology for the sake of efficient and reliable execution of construction project. Since then, JACIC has been working in various activities as a public organization in neutral stand point.

The activities are divided into 4 categories. The 1st category includes Information Service related to database and data exchange system such as operating databases for assisting public organizations making proper procurement, efficiently use data produced in construction procedure to following activities such as maintenance and so on or exchange of information on by-product of construction activities for proper reuse and recycle to maintain environmental quality. The 2nd is Research and Development on topics related to mission of JACIC. The 3rd includes entrusted services such as Research, Survey and Development under contract with central or local government and operation of systems for administrative work or public service. The 4th is public benefit services which include standardization activity, promotion of application of information and communication technology through supporting international conference and providing grant for academic research activities, seminar, publication, Web site and so on.

Through such activities, JACIC is supporting construction activities which contribute to maintaining efficient and comfortable society.

In year 2012, JACIC changed its status to general incorporated foundation. Although legal status changed a little, stand point of JACIC as an organization for public service does not change.

**History**

1985 Founded as public foundation based on common law under authority of Ministry of Construction
2008 Act on General Incorporated Associations and General Incorporated Foundations enforced
2012 Changed status to general incorporated foundation based on Act on General Incorporated Associations and General Incorporated Foundations

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Office & Access MAP
1. Board Member & Organization

President
Mr. Atsushi FUKASAWA

1. Board Member & Organization

Board of Directors (as of 2018 July)

President
Atsushi Fukasawa; (full-time) ex-Director-General of Road Bureau, MLIT

Executive Director
Toshitaka Aoki; (full-time) ex-Inspector-General, Minister’s Secretariat, MLIT

Executive Director
Takashi Ozawa; (full-time) ex-Deputy Director, Cabinet Office

Executive Director
Norihisa Tadagoshi; Former Director-General, Bureau of Construction, Tokyo Metropolitan Government

Executive Director
Masakazu Ohhashi; Professor, Faculty of Policy Studies, Chuo University

Executive Director
Fumihiko Ohmori; Professor, Department of Law, The University of Toyo

Executive Director
Shunji Kusayanagi; Professor, Social System Management Course, Kochi University of Technology

Executive Director
Tatsunori Sada; Professor, College of Science and Technology, Nihon University

Executive Director
Toshikazu Shimazaki; Professor, College of Science and Technology, Nihon University

Executive Director
Eihan Shimizu; Professor, Department of Civil Engineering, The University of Tokyo

Executive Director
Akira Takahisa; Director-General, the Japan Civil Engineering Consultants Association

Executive Director
Masayasu Kayano; Chair, Public Works Committee, Japan Federation of Construction Contractors

Executive Director
Masaru Narita; President, Japan Geotechnical Consultants Association

Executive Director
Hajime Horiuchi; ex-Professor, Tokyo International University

Executive Director
Nobuyosi Yabuki; Professor, Graduate School of Engineering, Osaka University

Auditor
Takaharu Katou; Former advisor, Management System Assessment Center

Auditor
Izumi Furukawa; Former Director, Land Development Department, Chiba Prefectural Government

Organization chart
2. Outline of Business & Research

JACIC’s 4 Activities

Information Service
- CORINS and TECRIS, Construction and Technical Consulting Records Information
- Construction-related material recycling information service
- Public Procurement Information Service (PPI)

Entrusted Service
- Research and Development on the function and information service of the public works cost estimation system
- the Information Sharing/Exchange System during construction

R & D Projects
- BIM/CIM (Construction Information Modeling/Management)
- Photog-CAD on disaster restoration projects

Public benefit Service
- Construction Information Technology Research Grant Program
- Infrastructure Information Standardization Committee
- International Meetings (ICCBEI, ICCCBE)

Planning/Survey
- Research Grant Program

Operations/Maintenance
- Photog-CAD

Constructing
- Overseas development
- Construction-related material recycling information service
- Information Sharing/Exchange System

Designing
- CIM, BIM

Estimate/Bidding/Contracts
- CORINS / TECRIS
- Public works cost estimation system

Internationalization and Standardization
- International Meetings
- Standardization Committee
3. Standardization for Infrastructure Information

(1) Standardization Activities

- Development and promotion of information standards in the construction field

It becomes more important to make standards and construct information infrastructures for exchanging and to secure the interoperability between systems as information and communication technology progress.

JACIC, through the Infrastructure Information Standardization Committee, promotes standardization of Information mainly on those which influence multiple domains of construction where computerization is actively proceeded.

(2) Standardization Committee

- Role of the Infrastructure Information Standardization Committee

The Infrastructure Information Standardization Committee was established in “2000 responding the proposal by the “Standardization Vision on Construction Information”. The Committee is responsible to harmonize various existing standards, to develop new standards, and to promote and disseminate them under “Three-year Plan for Promotion Standardization on Infrastructure Information”. Many of the Standards by the Committee become national Standards.

- Major achievements

Major achievement for the first to the fourth three-year plan (FY 2001 to FY 2012) are followings:

- Electronic delivery standard manuals and guidelines
- Standard for linking digital map with CAD data
- Completion of the two-dimensional CAD data exchange standard
- Standard functional requirement for Information sharing system during construction period
- Expansion of electronic delivery standard manuals and guidelines to flexibly apply to local governments.

- Coordination with International Standard

While collecting information on domestic and international standardization in the construction field, JACIC participates in international meetings including ISO, and provides information related to our standardization activities. Moreover, JACIC is promoting cooperation with a related standardization organization (ISO, IFC, etc.).

- Present activity of the Infrastructure Information Standardization Committee

The Infrastructure Information Standardization Committee started to discuss following new themes invited from public, in order to cope with recent new social condition since 2013. Those themes are discussed in each subcommittee.

Moreover, the Special Committee for the theme to be a quick response was established in 2015. The present theme of the Special Committee is handling of the 3D data related to CIM.
4. Research and Development

(1) CIM (Construction Information Modeling/Management)

Introduction of CIM

CIM applies the methods and concepts of building information modeling (BIM) that are being used in the field of architecture to the civil engineering field. CIM aims at introducing the 3D model to the planning, investigation, and engineering stages of civil engineering in Japan, establishing a link with the 3D model, and subsequently, developing it to the 3D model used in various stages of construction, maintenance, and management. At the same time, the CIM creates a series of streamlined and enhanced construction production systems that utilize information sharing between the concerned participants from the entire industry.

CIM Project of MLIT

Construction industries in Japan are currently facing a big problem of labor shortage. The number of young people engaged in construction industries is decreasing, resulting in higher speed of population aging than that of entire country. The social infrastructure is aging rapidly with a decline in human resources and labor.

Streamlining and enhancing construction production processes, the quality of construction and maintenance technologies have become issues.

Consequently, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) has launched construction information modeling/management (CIM) from the fiscal year 2012. The experimental run of CIM for engineering services started in the fiscal year 2012. The number of CIM trials (services and construction works) increased to about 100 businesses by the end of the fiscal year 2014. JACIC is supporting MLIT projects.

Education

JACIC develops and produces human resources for engineers involved in CIM, and cooperates with and supports related organizations. One of them is "CIMSoluthon". In this training, we will conduct 3D-CAD software operation and exercises. The target of this training is to solve the problem of day-to-day work by using 3D-CAD software.
The dam investigated for CIM adaptability is a rock-fill dam of height 132 m and width 723 m. This dam is a multi-purpose dam aimed at flood control, preservation of river environment, the supply of agricultural and drinking water and power generation. The structuring of Dam CIM has been taken up as a pioneering model for integrating and visualizing all the information for the enhancement and streamlining of future dam maintenance and management.

(2) Photog-CAD

Photog-CAD is a low cost tool for easy procedure for requesting recovery cost of infrastructure after disaster with home-use compact digital camera and PC.
5. Information Service

(1) CORINS/TECRIS

Construction and Technical Consulting Record Information

What's CORINS/TECRIS?

CORINS/TECRIS is an unique information service that provides data on achievement of public construction projects all over Japan. CORINS provides records of construction project and TECRIS provide records of technical consultation, land survey, eminent domain consultation.

For evaluating projects and firm

As many countries’ issue, public construction works must have enough quality with fair procedure. Consequently administrative organizations are expected to have highly responsibility for the public investment of construction works with transparency, objectiveness and fairness in their procedure.

In JAPAN there had been social requirement on prevention of misbehaviors in tendering and contracting process for public construction works at the beginning of 1990s.

CORINS/TECRIS is an information service with its nationwide past and present records of project for this purpose of these public considerations that require comprehensive information for evaluating construction projects and firms relatively.

Business Model

[Registration phase]

1. Public organizations order a public works project.
2. Firms related construction execute the project.
3. Firms related construction register the project record to CORINS/TECRIS.

[Evaluation phase]

4. Public organizations can find & browse project records from CORINS/TECRIS with many conditions.
5. Public organizations can make a new project and evaluate qualification of firms and engineers by using past project records.

JACIC support this public acquisition cycle by operating CORINS/TECRIS.
**Our Business Scale**

CORINS/TECRIS has started in 1994 requested by the former Ministry of Construction (currently the Ministry of Land, Infrastructure, Transport and Tourism) for the necessity of past experience record database which all the public works project contractors can access to and properly evaluate technical capability of contractors.

Now, CORINS/TECRIS covers 80% of investment for construction in JAPAN as the monetary based ratio of public and it is estimated to be 20.6 trillion yen.

CORINS provides more than 4.2 million records of construction works and about 144,000 firms and is used by nearly one thousand of public organizations.

TECRIS provides more than 1.4 million records of projects registered by about 13,000 firms and is used by nearly 5 hundred organizations.

**Data Items**

CORINS/TECRIS has a lot of data items. Following data items are representatives.

- **Project** - Subject, Project Owner, Term, Cost, Place
- **Contractor** - Company’s Name, License Number for Construction Business, Address
- **Engineer** - Name, Role, Qualification, Engaged Term
- **Technical detail (CORINS)** - Method, Specification
- **Technical detail (TECRIS)** - Domain, Phase

To find whole data items, see below

- [http://ct.jacic.or.jp/corporation/know/xml/file/c02x01.xls](http://ct.jacic.or.jp/corporation/know/xml/file/c02x01.xls)
- [http://ct.jacic.or.jp/corporation/know/xml/file/t02x01.xls](http://ct.jacic.or.jp/corporation/know/xml/file/t02x01.xls)

**History**

<table>
<thead>
<tr>
<th>Year</th>
<th>Our Business</th>
<th>Social demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>Started CORINS to be registered construction project of which price is more than ¥50 million.</td>
<td>“Reform of Public Works procurement process” was proposed from the Central Council on Construction Industry.</td>
</tr>
<tr>
<td>1994</td>
<td>Started CORINS to be registered construction project of which price is more than ¥50 million.</td>
<td>Former Ministry of Construction, Prefectures and Mega cities started to register their projects in CORINS.</td>
</tr>
<tr>
<td>1995</td>
<td>Started TECRIS to be registered Engineering consulting project of which price is more than ¥5 million.</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>Redesigned CORINS/TECRIS as web based information service.</td>
<td></td>
</tr>
</tbody>
</table>

**Amount of registered data (as of Mar, 2017)**

<table>
<thead>
<tr>
<th>Type of data</th>
<th>CORINS</th>
<th>TECRIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public works project records</td>
<td>4,480,000</td>
<td>1,740,000</td>
</tr>
<tr>
<td>Construction related Firms</td>
<td>150,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Engineers</td>
<td>1,760,000</td>
<td></td>
</tr>
</tbody>
</table>

**Amount of public organization (as of Mar, 2017)**

<table>
<thead>
<tr>
<th>Type of Organization</th>
<th>CORINS</th>
<th>TECRIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>National governments</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>National institutes</td>
<td>65</td>
<td>8</td>
</tr>
<tr>
<td>Local governments</td>
<td>851</td>
<td>649</td>
</tr>
<tr>
<td>Others</td>
<td>27</td>
<td>24</td>
</tr>
</tbody>
</table>

* JAPAN has about 1800 local government
(2) Procurement Information Business and E-Bidding System

**Integrated Public-works Procurement Information Service (i-PPI)**

JACIC is hosting a portal site that integrates ordering information that each procuring entities to publish. This service is intended to enable the post bid information of procuring entities of many kinds of scale of the organization. "Prospect of Works", "Tendering Open" and "Progress and Result of Bidding", the user can search across the procuring entities.

**Registered Organizations of i-PPI**

- 4 national ministries
- 1 prefectures and 14 municipalities
- 1 ordinance-designated mega-cities

**Electronic Bid Support Center**

In order to support smooth implementation of electronic bidding, JACIC established the Electronic Bid Support Center (e-BISC) in April, 2001, and has offered "System user support".

**Electronic Bid Support Service**

**Electronic Bidding Core System (EBCS)**

JACIC has developed Electronic Bidding Core System (EBCS) aiming at standardization of the electronic bidding system. The number of the adoption groups is as follows.

- 5 national ministries
- 20 public corporations / organizations
- 47 prefectures (100%)
- 20 ordinance-designated mega-cities
- approx. 700 municipalities (including share-use)
- TOTAL : approx. 800 Organizations

**Local government availability of prefecture**

- less than 20%
- 20% - 40%
- 40% - 60%
- 60% - 80%
- more than 80%
Work Range of EBSC

The EBSC supports a series of procedures from registration of bidding projects to disclosure of bidding results.

Features of EBSC

The EBSC is a highly reliable system since it has been developed based on the proven electronic bidding system of the Ministry of Land, Infrastructure Transport and Tourism.

The EBSC is also highly flexible. This is because the results of a survey on bidding-related business and opinions (business needs) from special members of the consortium were reflected when the system specifications were established.
(3) Cost Estimation System

Cost Estimation System of Public works

Role of an estimated threshold price of public construction contract

In Japan, when government and local agencies order public works, the contract officials must set estimated threshold prices, which are the upper or lower limit of the bidding price for each project, in accordance to check Public Accounting Act for government and in Local Autonomy Act for local agencies.

The estimated threshold price should be set properly about the objective article or the work in consideration of the market price used when transacting business, the situation of the supply and demand, the degree of difficulty of the performance of a contract, the quantity of the amount, the length of performance of the contract period, and so on.

Standardization of the MLIT’s cost estimation of the public construction

To ensure transparency and fairness of the contract, an estimated threshold price should be the same amount of money, not depend on who calculates. To realize it, MLIT developed standardized classification of construction work type. It involves the itemize of works, the type, the classification, the subdivision of classification, and the specification. More over it defines the units for cost estimation and construction amount summary list, the contents of statement of items and terms.

Cost estimation system

In order to calculate the estimated threshold price, the contract official needs a system that implements a database which stores costs of the machine, labor, and material costs, and a program that implements logic for computer processing. In Japan, we call this system a cost estimation system from 2000.

Activity about a cost estimation system of JACIC

JACIC engaged the development of the cost estimation system of MLIT since it was established, and contributed its improvement and supporting the operation. In addition, we offer the cost estimation systems based on Standardized classification of MLIT to local agencies. We have obtained much expertise from the duties of MLIT, so our system gets a high evaluation, because of a contract official’s reduction of burden to calculate estimated threshold price.

Product and Service for local government

JACIC provides the system and the ASP service for cost estimation, and the data for the system to local governments. The system was adopted Web method and data formation is XML data format.

The XML formation data are able to apply to various systems flexibly, and the Web based system and the ASP service are easy to update in cost than previous client-server model.
Construction-related materials recycling information service

Developing land infrastructure contributes to improving quality of the people's life. On the other hand, processing wastes is a challenging issue. In Japan, laws and regulations have been enacted to promote recycling construction-related materials.

JACIC has established Construction-related materials information center to support construction project members can recycle materials, for example concrete, asphalt, timber and so on as byproducts from construction and demolition, and also re-use soil. Thus we are providing two web based information services.

For construction-related materials

We support promotion of recycling on construction sites construction-related materials and evaluation of effectiveness of administrative measure through statistics.

【Main Feature】
Creating forms based on laws and policies.
Sharing information of recycling fee and recycled material’s price for each recycling plant.
Showing route on the map between a construction site and a recycling plant.
Summarizing recycle activities.

For using and transporting soil

We support exchange of supply and demand information on each construction project sites, so that they can transport necessary soil among construction project sites.

【Important Feature】
Sharing soil exporting project site and soil importing project site within date term for supply and demand, quantity and quality of soil.

Position of JACIC

Business scale of recycling information service

<table>
<thead>
<tr>
<th></th>
<th>construction-related materials</th>
<th>using and transporting soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>National government</td>
<td>224</td>
<td>212</td>
</tr>
<tr>
<td>National Institute</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Local government</td>
<td>315</td>
<td>433</td>
</tr>
<tr>
<td>Other organization</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Construction firm</td>
<td>15,352</td>
<td></td>
</tr>
<tr>
<td>Recycle plant</td>
<td>1,715</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>17,615</td>
<td>657</td>
</tr>
</tbody>
</table>

(as of Mar. 2017)
6. International Service

(1) Cooperation & Contribution

Cooperation and Contribution

JACIC put out Japanese technical information of Construction mainly to the Asian countries.

- Supporting the ICCBEI Conference

Japan Society of Civil Engineers (JSCE) and JACIC together with Asian researchers in the field of construction Engineering Information have set up an International Conference named ICCBEI (International Conference on Civil and Building Engineering Informatics.) in 2013 & 2015 in Tokyo or 2017 in Taiwan. The Conference is held every other year.

JACIC will let stats participate as authors and organise JACIC Session in the Conference which is the exchange place of academic scholars and civil engineers.

- Accepting other countries’ training delegation

Asian countries’ government teams visit JACIC often to study Japanese information systems in the field of Construction. In 2013, 2015 and 2016 Vietnam delegation visited JACIC through JICA programs to study about CORINS.

- Cooperations for IFC standard activity

JACIC supports the activities of IFC standard together with JSCE and BuildingSMART Japan.

(2) Certification of Construction Technology

As an active member of the Construction Technology Review and Certification Council, JACIC conducts reviewing and certification of construction information technology. This program aims promoting research and development of the private sectors and contributing to introducing new state-of-art construction technology at through prompt and adequate introduction and implementation of various new construction information technologies developed by the private sector and applicable to public works by authentic certification of the technology.

The reviewed and certificated technologies of all members in the Construction Technology Review and Certification Council are uploaded on the JACIC Web site.

http://www.jacic.or.jp/sinsa/
(1) Public Relation

**JACIC Web Site**

JACIC provides Business information of JACIC, Construction related news, Technical information, Introduction of JACIC-Systems, etc.

http://www.jacic.or.jp/

**Seminar**

JACIC-Seminar (free participation) is held in various parts of Japan with the latest topics of construction information.

<table>
<thead>
<tr>
<th>DATE</th>
<th>SEMINAR THEME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr. 2017</td>
<td>The latest situation of Japanese construction information system</td>
</tr>
<tr>
<td>Oct. 2016</td>
<td>Panel discussion on standardization and mandatoryization of BIM / CIM process</td>
</tr>
<tr>
<td>Oct. 2016</td>
<td>Deployment over CIM</td>
</tr>
</tbody>
</table>

Also, the contents (over 100) of the lecture at each seminar are posted on the JACIC Web Site.

**Publication**

JACIC publishes publication in the construction information field.

**JACIC-INFORMATION** (Book 2 times/year)  **JACIC-news** (on Web every month)

(2) Research Grant

**Support for research and development**

JACIC suports research and development in the field of construction information.
About 10 subjects are supported every year.

Main target area of research

- Standardization of construction information
- Utilization of three-dimensional data
- Utilization of AI, IoT
- Citizen learning
Office & Access MAP

Japan Construction Information Center
General Incorporated Foundation
Akasaka Seventh Avenue Building
10-20, 7-chome, Akasaka, Minato-ku, Tokyo 107-8416, Japan
tel.03-3505-2981 fax.03-3505-2966
URL:http://www.jacic.or.jp/english/index.html

Regional offices

- Hokkaido regional center
- Tohoku regional center
- Kanto regional center
- Hokuriku regional center
- Chubu regional center
- Kinki regional center
- Chugoku regional center
- Shikoku regional center
- Kyushu regional center