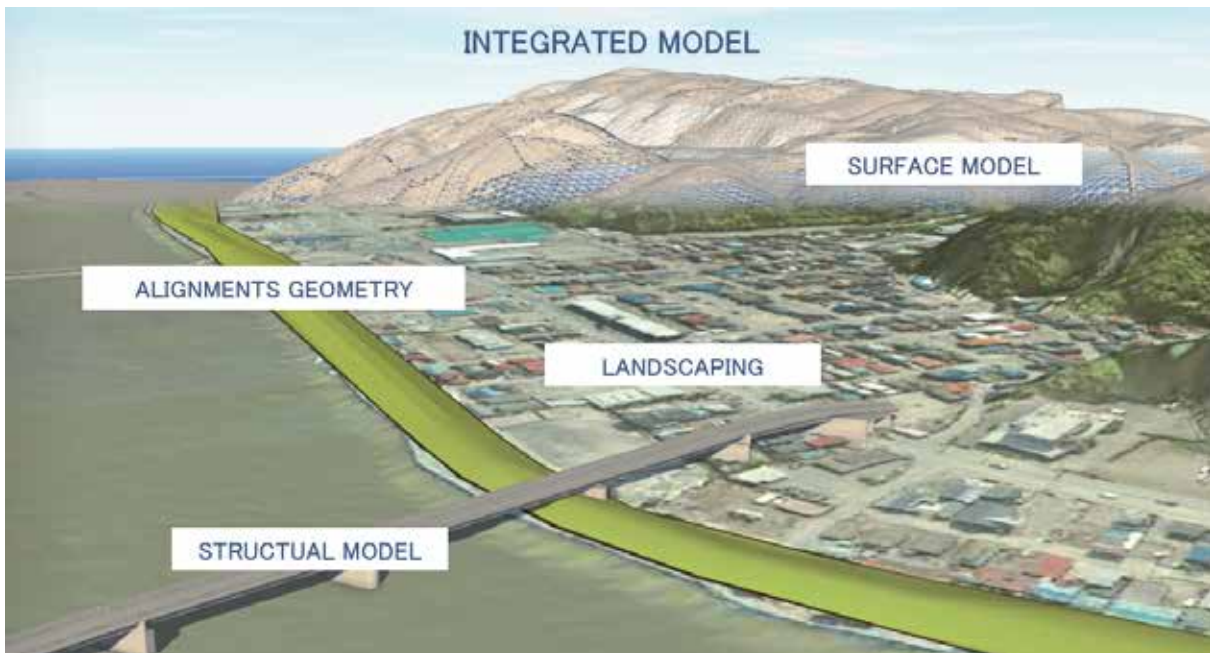


# 4. Research and Development

## (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.

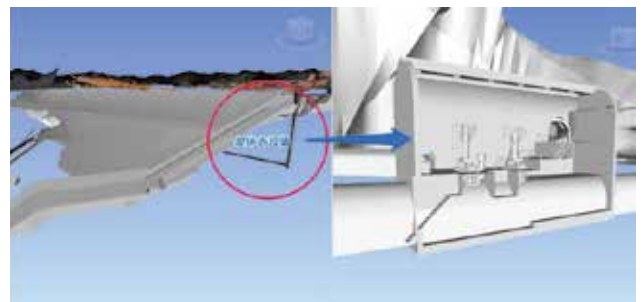
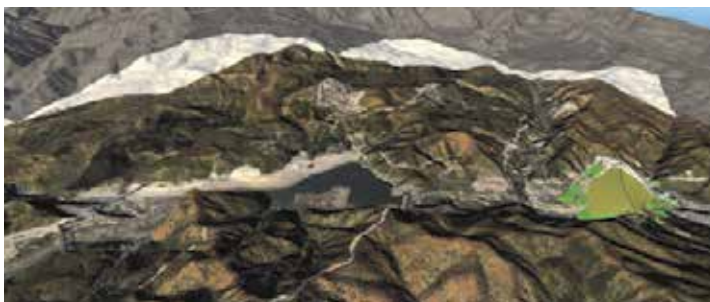
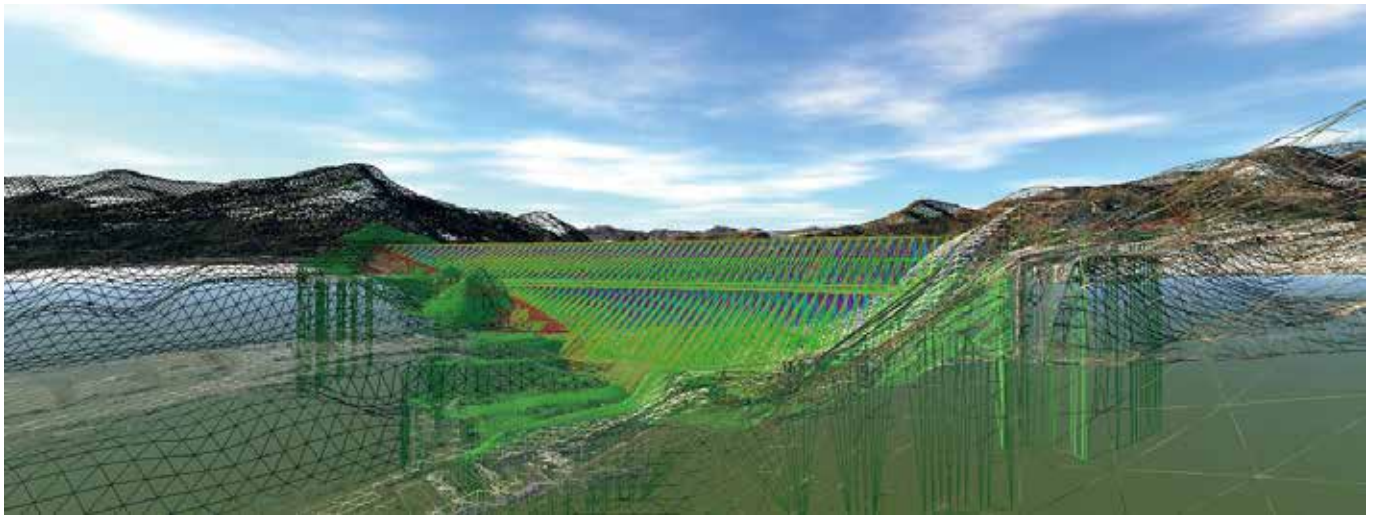
### ◎ Education

JACIC develops and produces human resources for engineers involved in CIM, and cooperates with and supports related organizations. One of them is " CIMSoluton ". 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.



© 3D Modeling

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.



4. Research and Development

(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.

