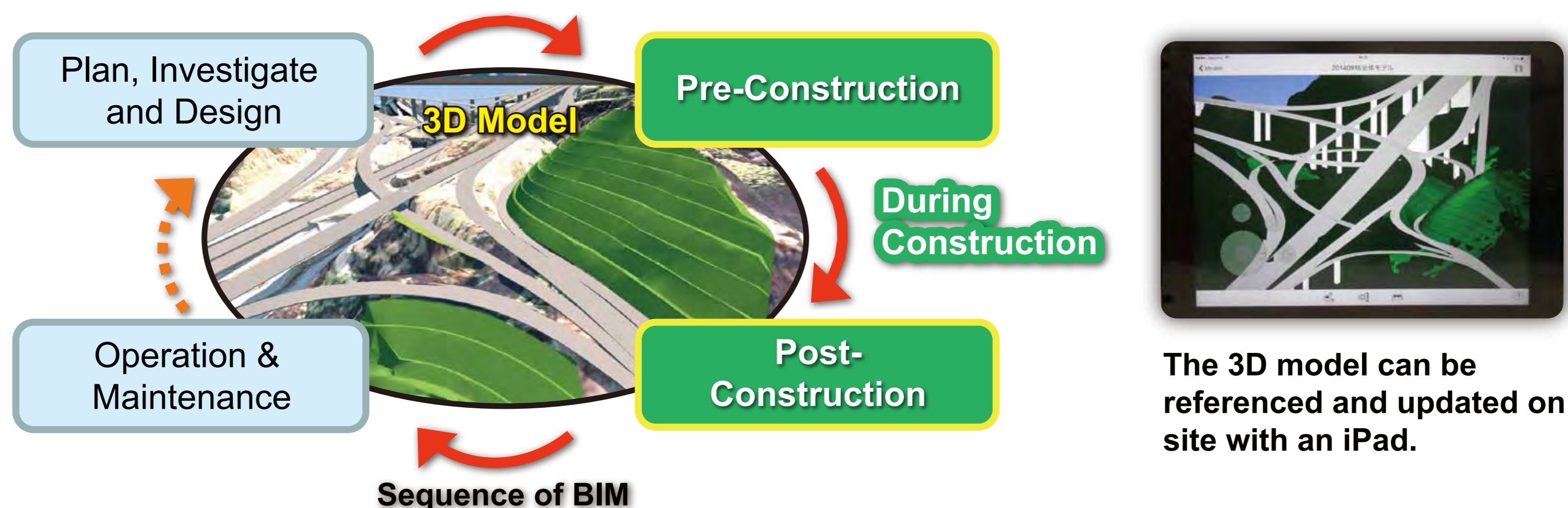


BIM for Infrastructure (CIM:Construction Information Modeling/Management)

~새 프로젝트 관리 수법을 이용한 건설 프로세스의 개혁~

BIM for Infrastructure (so-called "CIM" in Japan) is a process specialized for heavy civil projects by utilizing innovative CAD technology. It makes project management more efficient by sharing a 3D model that is updated throughout every stage of a project from the planning, design, and construction to operation and maintenance phases. As all information is combined into one CAD model, higher quality and efficient work can be achievable. In other words, projects can be completed with less overall cost and time by eliminating reworks due to design conflicts and/or by sharing accurate as-built information for future maintenance. Obayashi is one of leading companies facilitating BIM in the industry and has made excellent results.



BIM Application to Tunnel Project

Obayashi selected Mikusa Tunnel Project (Client: Ministry of Land, Infrastructure, Transport, and Tourism of Japan) as the first project to be managed with BIM in Japan. BIM effectively displayed not only the tunnel structure itself but also topographical & geographical data. Actual field conditions obtained from the non-core drilling excavation ahead of tunnel face were incorporated into the 3D model. By comparing the actual data to the original design model, the Field Management was able to easily and clearly identify, via BIM, a difference in the geo-conditions prior to the actual tunnel excavation. The Mikusa project was successfully completed with drastically improved tunneling production. Obayashi has since utilized BIM for many other tunnel projects.

《Actual BIM for Tunnel by Obayashi》

<p>Face Observation Data</p> <ol style="list-style-type: none"> ① Date ② Station Point ③ Support Pattern (Design・Actuals) ④ Observation Rating ⑤ Cover Depth ⑥ Water Inflow 	<p>Lining Quality Management Data</p> <ol style="list-style-type: none"> ① Date ② Station Point ③ Support Pattern ④ Slump ⑤ Quantity of Air ⑥ Temperature ⑦ Salt Content ⑧ Quantity of Water ⑨ Strength ⑩ Crack on Lining 	
Integration of Information on Face Observation	Integration of Information on Lining Concrete	
<p>Support Pattern of Design Stage</p> <p>Support Pattern Based on Information of Pre-boring (Non-core information)</p>	<p>Location of Photo of Tunnel Face</p> <p>Ground Layer</p>	Meeting at Project Site with BIM
Integration of Design and Pre-boring Data	Ground Layer by Photo Data of Tunnel Faces	Meeting at Project Site with BIM

Application of BIM to Operation & Maintenance Works (Advantage to Client)

During the post-construction phase, the 3D model will continue to be updated with as-built information obtained by a 3D scanner & camera. As the 3D model contains all of the data from the original design to the construction phases, a client can take this comprehensive information from BIM and utilize it during future operation and maintenance.

