CIM,
New Experience

Next Generation Work Process
for Civil Engineering
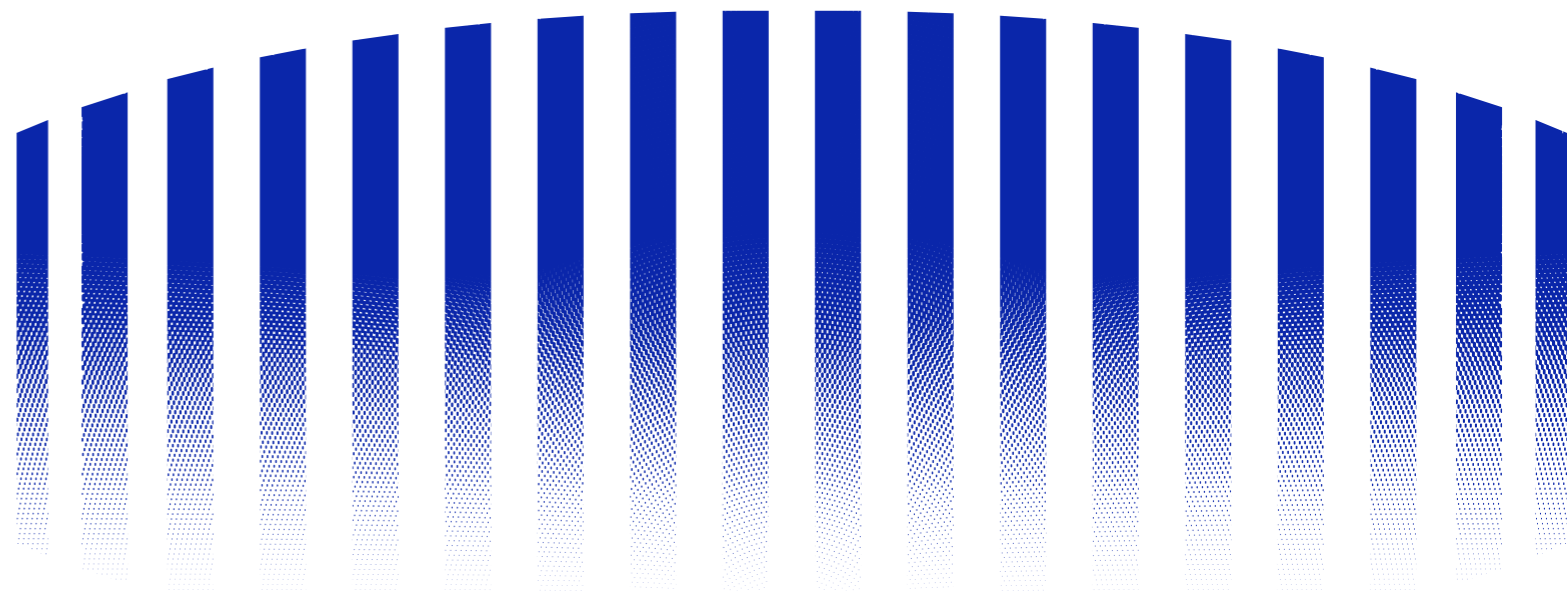
midas CIM

Civil
Specialized BIM

midas CIM

MIDAS

midas CIM

midas CIM

midas CIM,
Civil Specialized BIM

midas CIM is a total BIM solution that connects
midas Civil and midas Drafter to all civil engineering processes,
ranging from 3D structure planning, structural safety review,
structural drawing generation, material quantity calculation,
and construction simulation.

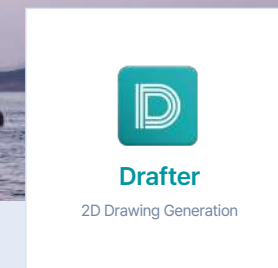## CONTENTS

NEXT GENERATION WORK PROCESS *for* CIVIL ENGINEERING

midas CIM is a BIM solution optimized for civil engineering practices.
It supports design engineers in effectively building an information model that considers road and railway alignment, super-elevation, and reflects reinforcing bars.
Furthermore, midas CIM provides suitable road and slope modeling features.

Drafter
2D Drawing Generation

Data Interface & Revision Update

midas Civil
Analysis & Design Check

midas CIM
3D Planning & Simulation

GTS NX
Geo-Technical Analysis System

Why?
midas CIM

01 Higher Quality

02 Practical

03 Quick & Easy

04 Interoperability

BIM model including full rebars and tendons along with alignment

Road and cutting slope modeling features to calculate accurate earthwork

Entire BIM model generated through a straight unit model

Higher quality data interface with midas Civil and GTS NX

01 Higher Quality

In midas CIM, a design engineer can easily create a BIM model that reflects rebars and tendons, taking into consideration the alignment. Furthermore, the BIM model is linked with general-purpose CAE products such as midas Civil and GTX NX, and structural drawings can be generated through midas Drafter.
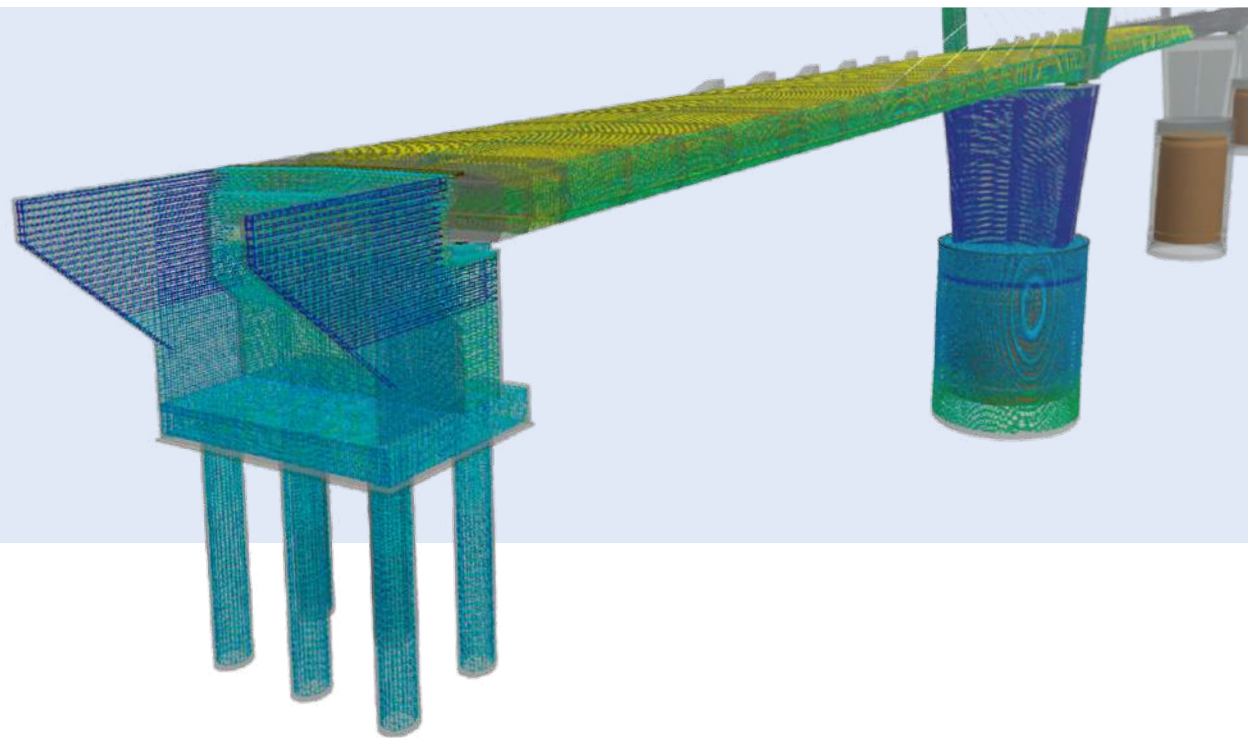
Modeling

Alignment Based Rebar Detailed Modeling
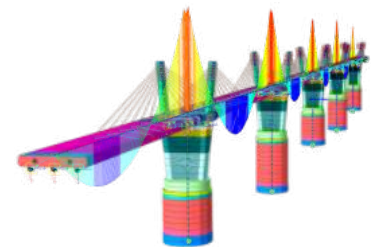
- Model generation according to LOD 350
- BIM data reflecting planar/vertical alignment
- Reflect the change interval between super-elevations
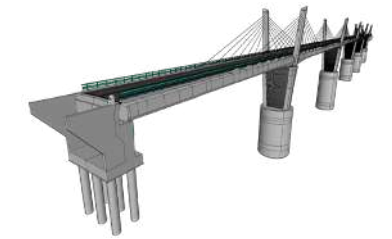
midas CIM

Analysis

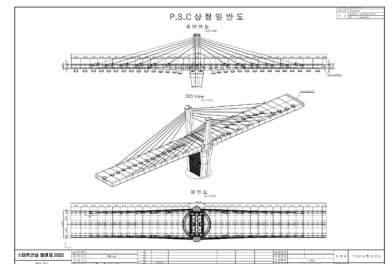**Direct Interface with Structural Analysis Software**

- Linked with general-purpose CAE products such as midas Civil and GTS NX

midas CIvil

## Drawing

Generation of Structural Drawings

- Provides same level information as 2D drawings
- Able to acquire information for construction
- Automatic updates of drawings when modifying information models
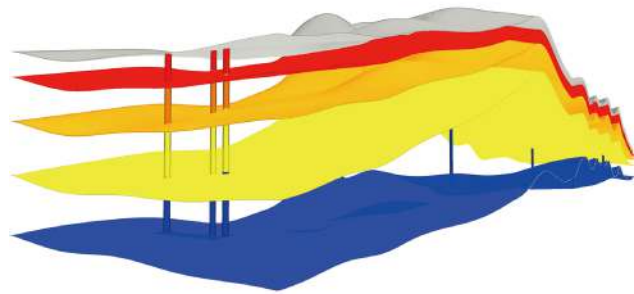
Drafter

Quantity

Quantity Information Linkage

- Generating quantity take-off table using property values on the model
- Direct calculation in connection with modeling
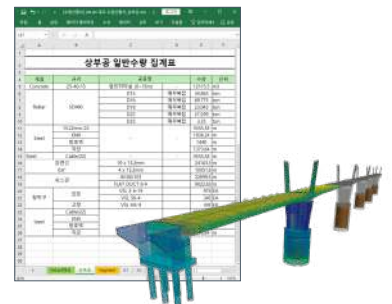
midas CIM

02 Practical

midas CIM is a product designed by experienced designers. midas CIM provides road and cutting slope modeling features capable of calculating accurate earthwork, and results are suitable for practical conditions.

03 Quick and Easy

- Generate the entire BIM model through a straight line unit model.
- Resources are greatly saved as immediate modeling corrections including reinforcing bars are possible when changing the alignment plan.
- The changes of super-elevation due to alignment changes are easily reflected by applying parameters.
- Similar type bridges can be created in midas CIM by just modifying some data in the existing bridge model.

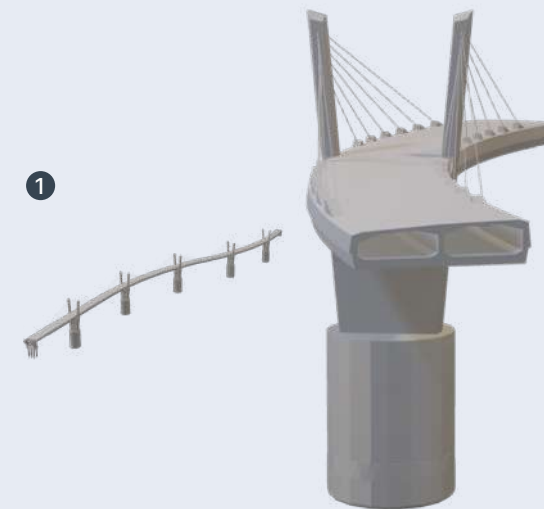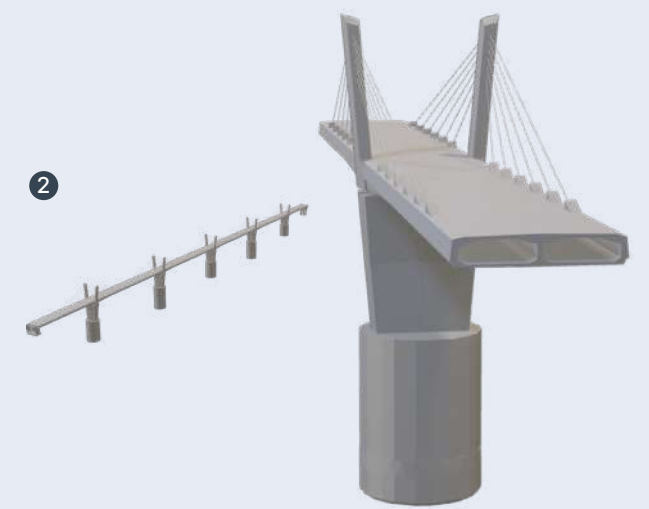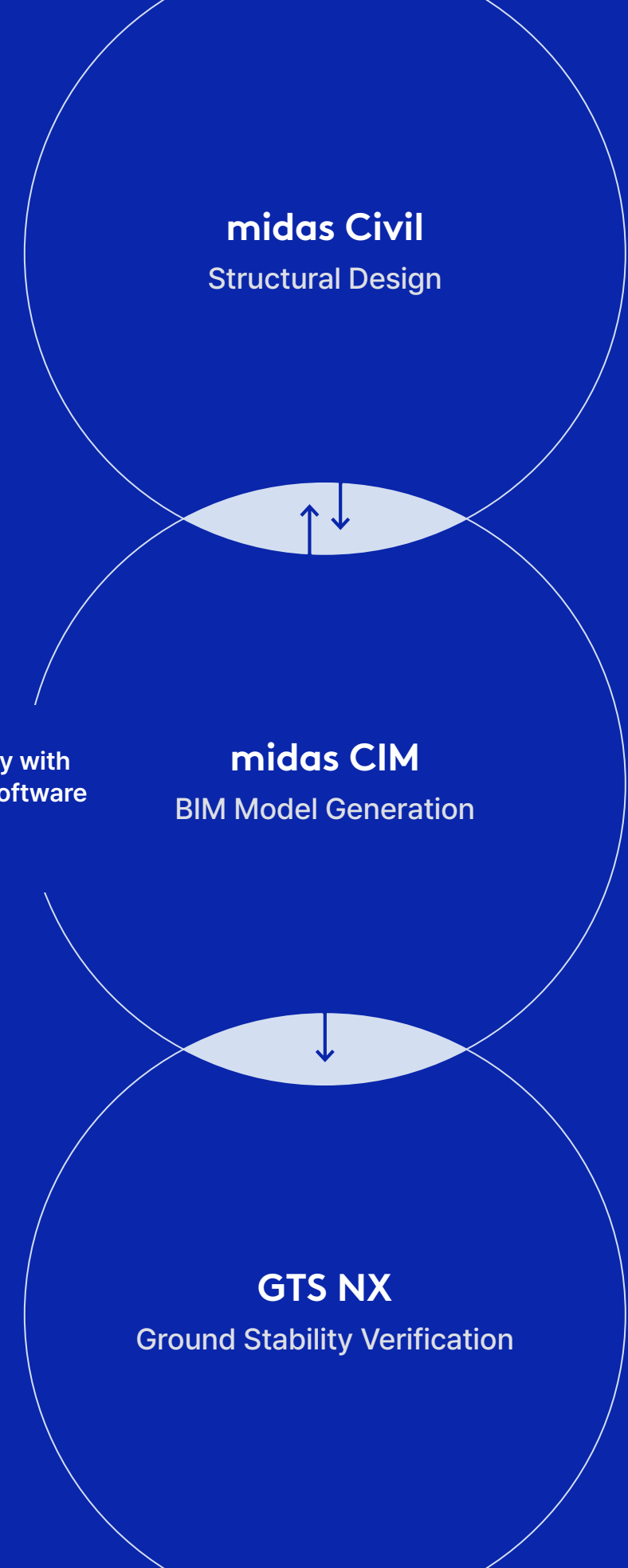| Straight Line Unit Model	Road Alignment	Assigning Unit Model to Alignment ▶	Generating BIM Model

3D Alignment Line

1

2

1

2

04 Interoperability

Midas IT has been developing and distributing midas Civil and GTS NX, which are verified numerical analysis programs that have been applied to numerous practical designs over the last 20 years worldwide. midas CIM provides a high-quality data interface with midas Civil and GTS NX, and automatically creates the 2D CAD drawings in midas Drafter.
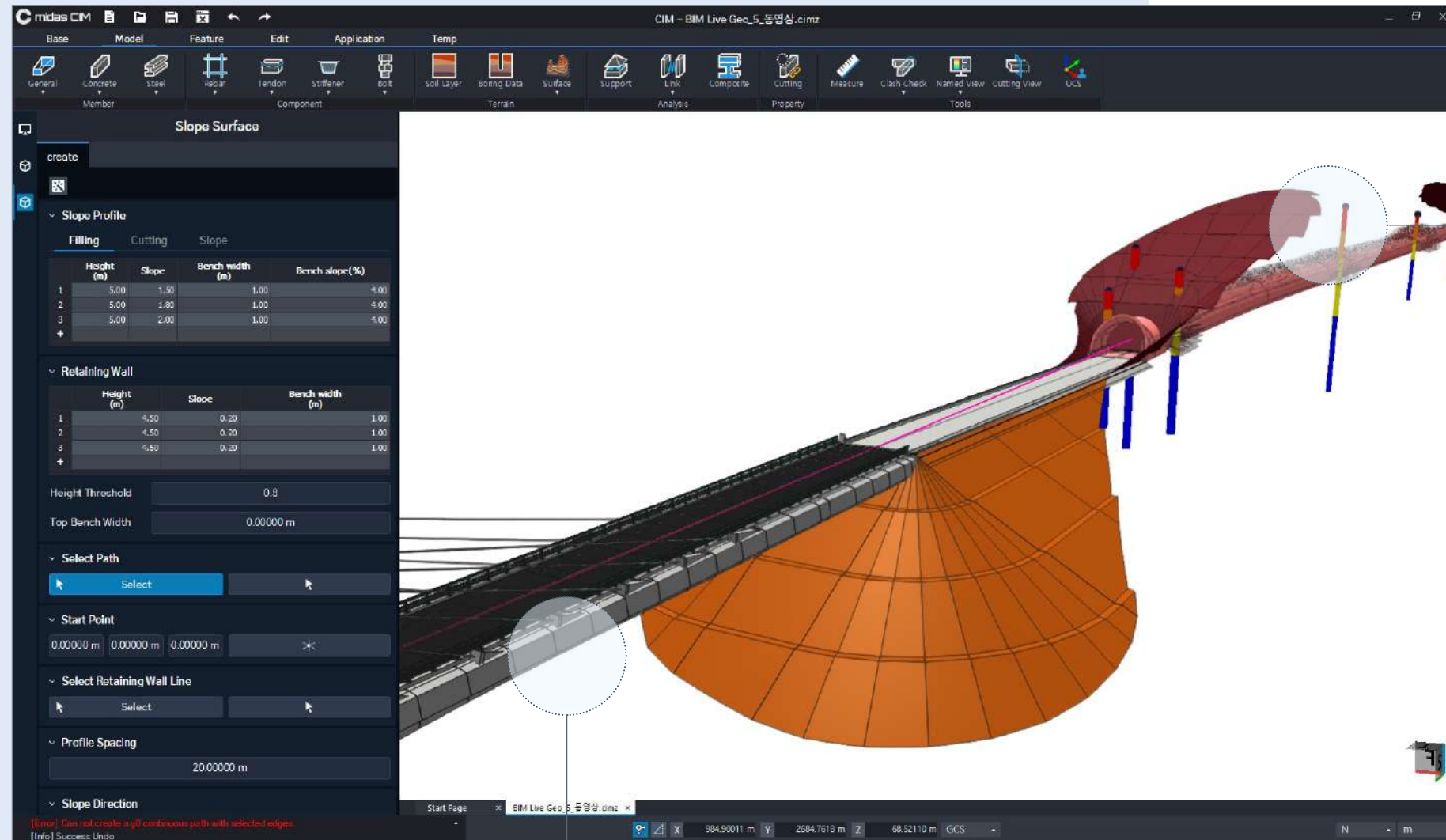
midas Civil
Structural Design

Interoperability with Various BIM Software

(ISO16739, IFC)

midas CIM
BIM Model Generation

GTS NX
Ground Stability Verification

04 Interoperability

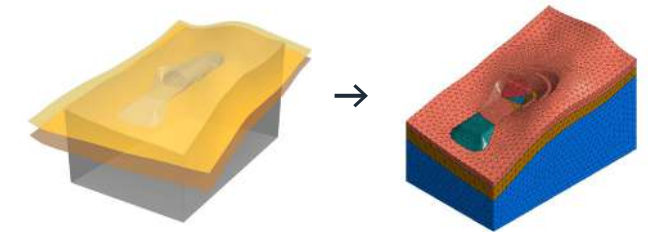## Direct Interface with Structural Analysis Software

Direct Interface with midas GTS NX

GTS NX

The ground shape including the ground material conditions can be imported from GTS NX.

Geometry Solid Export

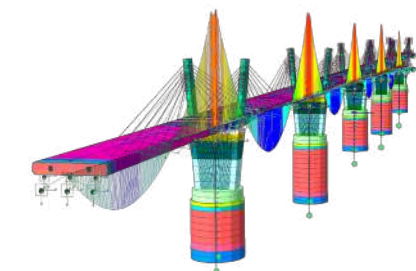### Direct Interface with midas Civil

midas Clvil

CIM → Civil
- From midas CIM model, the user can extract Frame and Plate elements to midas Civil model.
- When a change is made to a midas CIM model, the model in midas Civil is updated with existing load information.

Civil → CIM
- Convert midas Civil model to midas CIM model.
- By utilizing the existing midas Civil model, proposals that include a 3D BIM model can be generated without additional work.
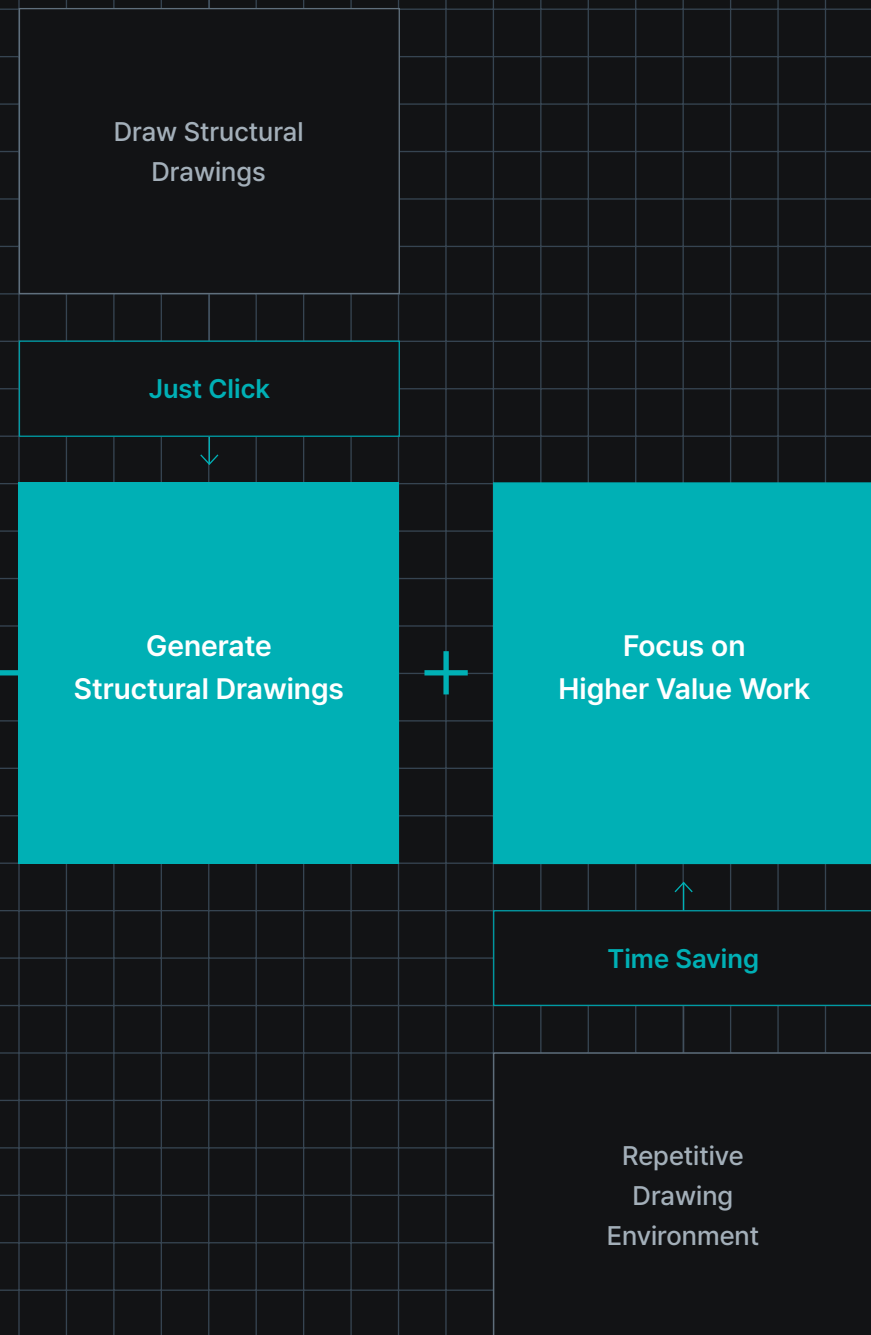
Revision

midas
Drafter

NEW PARADIGM

Draw Structural Drawings

Just Click

Generate Structural Drawings

+

Focus on Higher Value Work

Time Saving

Repetitive Drawing Environment

Real-time Generation of Cross-section Drawings

Drawings in 2D CAD can be created by setting the cutting position and drawing area required for cross-section drawing generation. The completed drawings are updated in accordance to model changes.
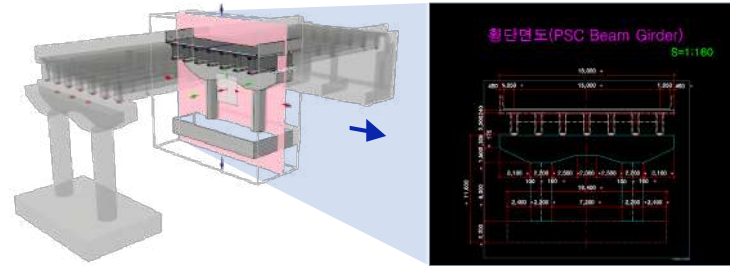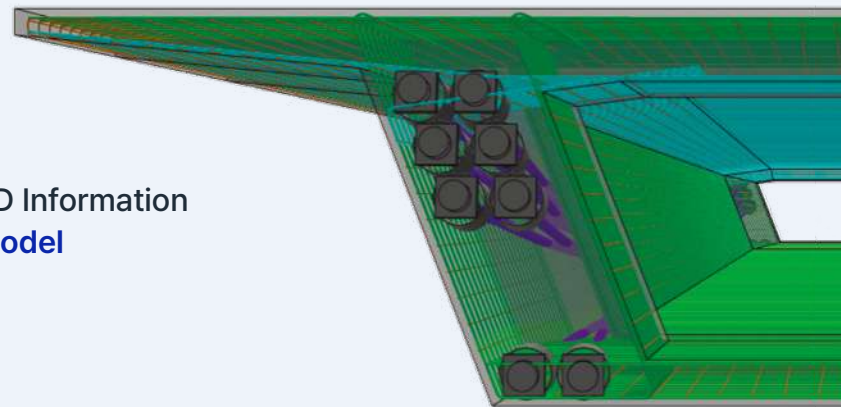

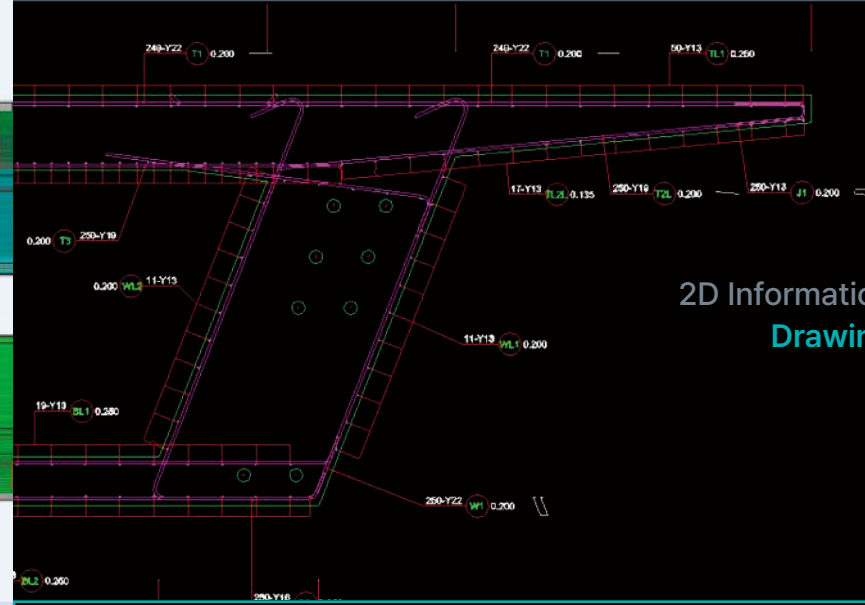## Drawing Creation reflecting Structural Details

The user can create cross-sectional drawings, plan drawings, and longitudinal layouts, including information on longitudinal/transverse braces and connecting bolts.
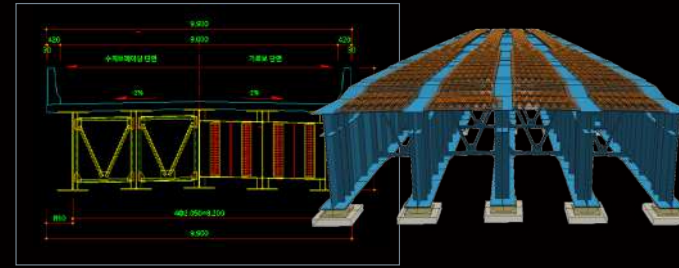
midas CIM   3D Information Model

2D Information Drawing   midas Drafter

Drawing View Export

Drawing View Update

It is not about Drawing, but about Creating the structural drawings.

Drawings can be created without errors or information omissions as they are automatically generated from a 3D structural model.

Generation of Straightened Longitudinal Drawings of Curved Bridges

By using midas Drafter with midas CIM, the user can create and edit drawing results in a 2D CAD environment. Coordinate tables for tendon profiles and longitudinal layout developed in 2D drawings can be generated using the 3D structure curved along with the alignment of the Road Information.
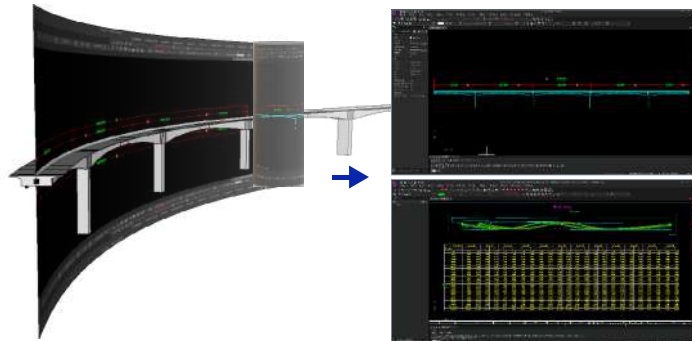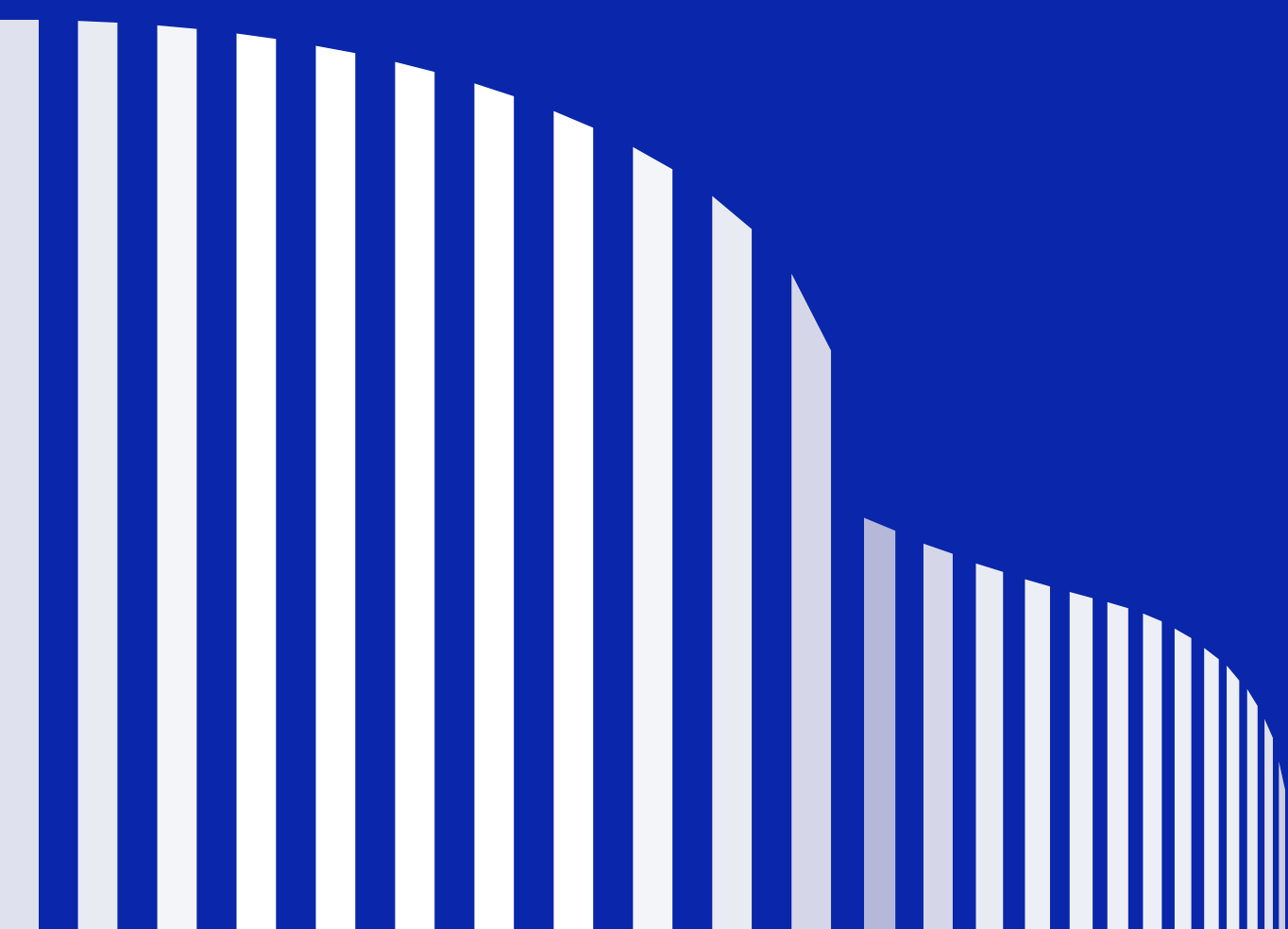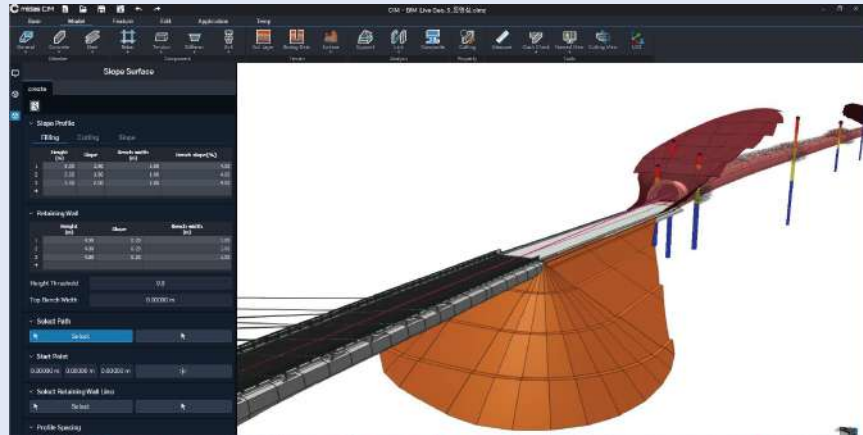

Isometric Drawing Generation

All models contained in CIM can be displayed in isometric drawings in midas Drafter by setting the desired view angle.
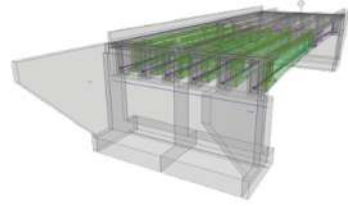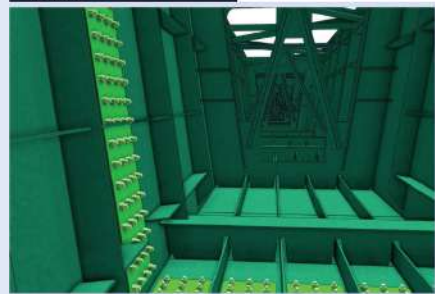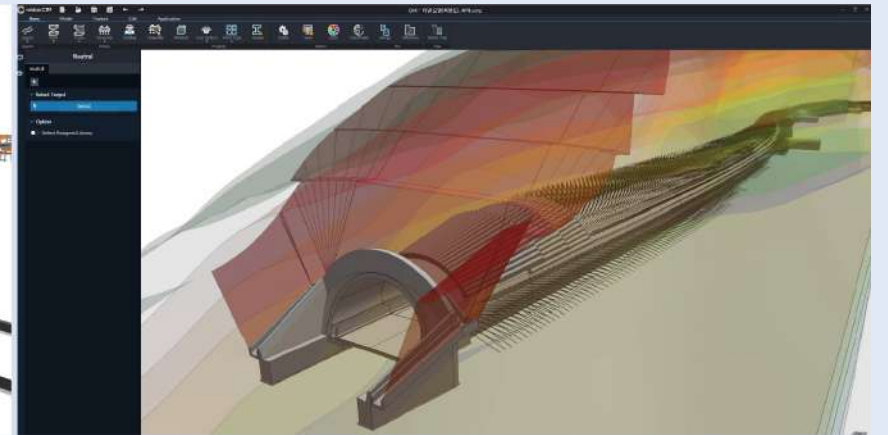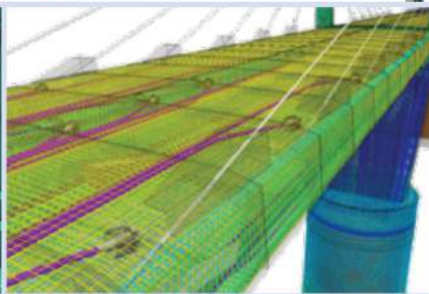
PROJECT
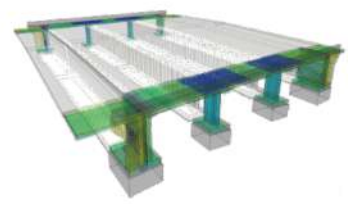# GALLERY

midas CIM
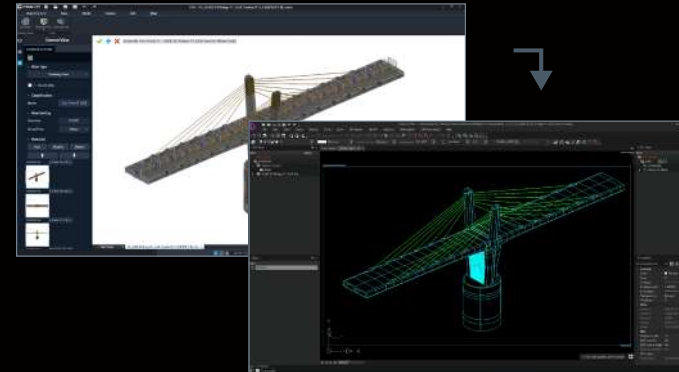
Single-span girder bridge
including rebars and tendons
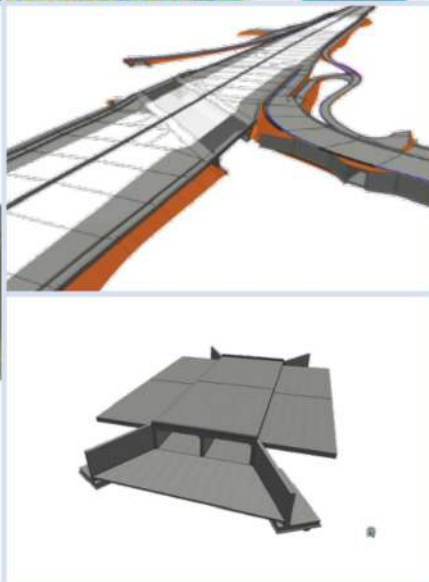
Road modeling including
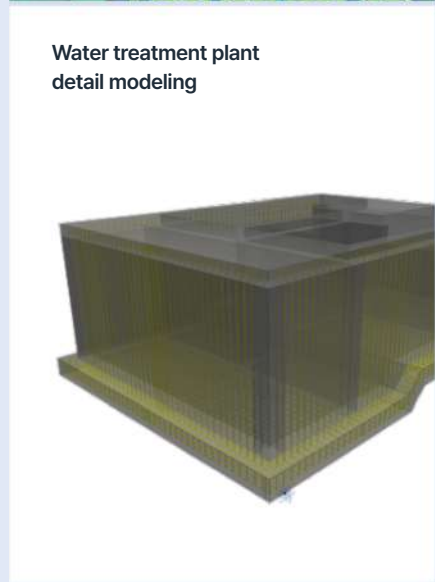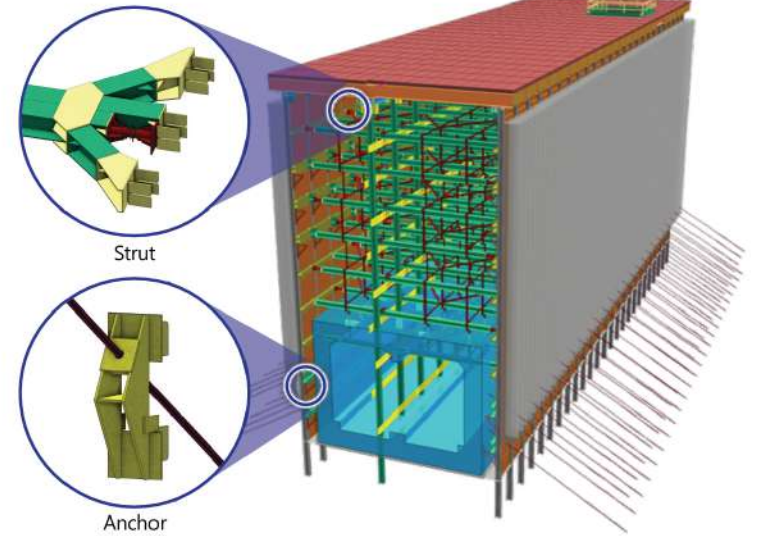Interchange, bridge, tunnel, etc.

Modeling of flared bridge
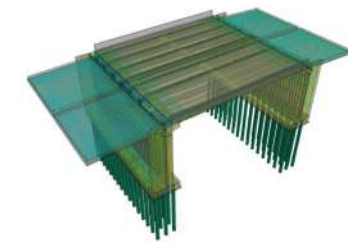including rebars

Earthwork modeling
reflecting road conditions

Temporary works and
underground structures

Strut

Anchor

Water treatment plant
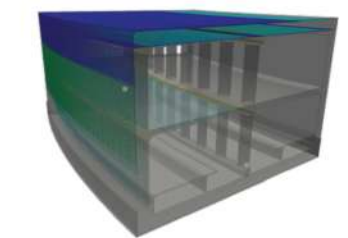detail modeling

Slab bridge
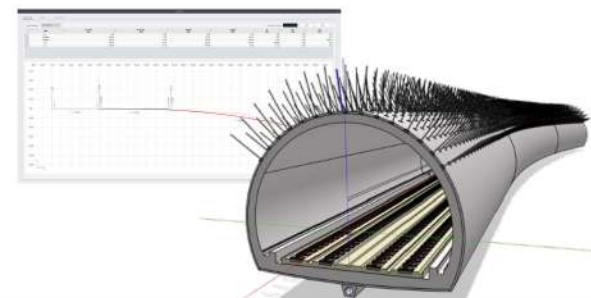including sub-structures

Retaining walls
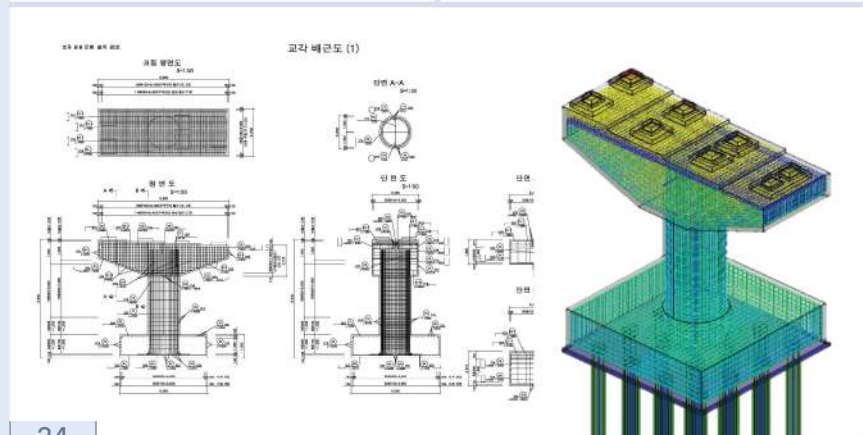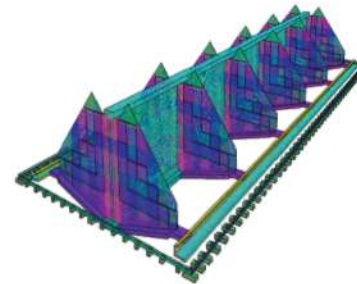
Subway station structure
including rebars

Lining modeling reflecting
alignment

Underpass
geometry modeling

MUMBAI TRANS HARBOUR LINK in India

Bridge Type	: PSC BOX Bridge
Total Length	: 21.8km
Total Lane Width	: 27m

The 22km-long Mumbai Trans Harbor Link, which will be recorded as the longest bridge in India, is a maritime bridge construction project that connects the Nhava Sheva area on the mainland of India with the Sewri area in the southern part of Mumbai Island over the sea. The total construction cost of this mega-scaled project is 3 billion USD, and Larsen Tubro (hereafter referred to as L&T), India's leading construction company, participates in the construction. The design company provided 2D drawings to L&T, but it was not easy to intuitively establish the construction sequence of the interchange section using only 2D drawings at the construction site. Therefore, L&T requested a 3D BIM model from Midas IT India. The modeling of a very complex intersection section where six roads intersect was completed using midas CIM and the contractor was able to solve the difficulties through an intuitive 3D model.
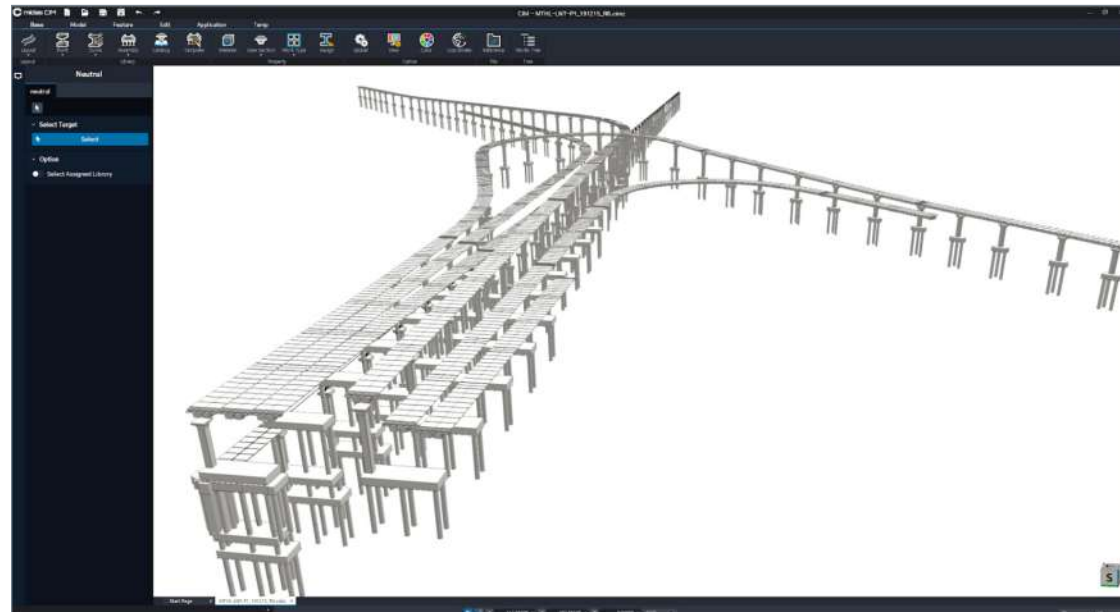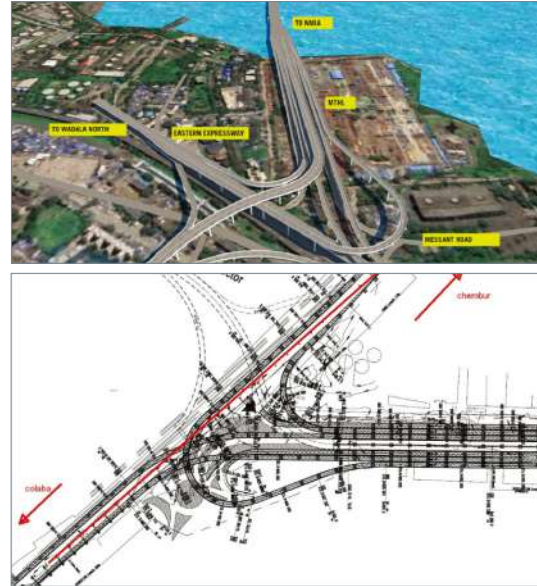
In the other construction section, most of the 2D drawings created by an Indian design company had interference issues with reinforcing bars and tendons, and construction was delayed due to repeated drawing checks. By providing Crash Report using 3D modeling, including rebar and tendon through midas CIM, L&T anticipated cost savings by identifying and responding to problems in advance.
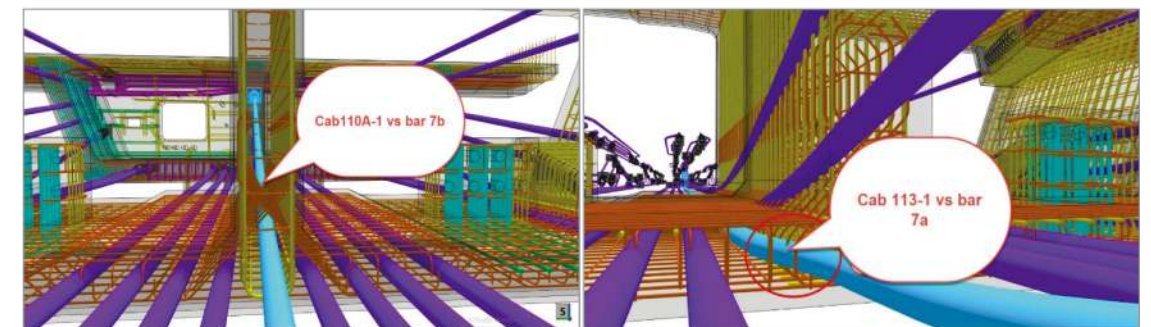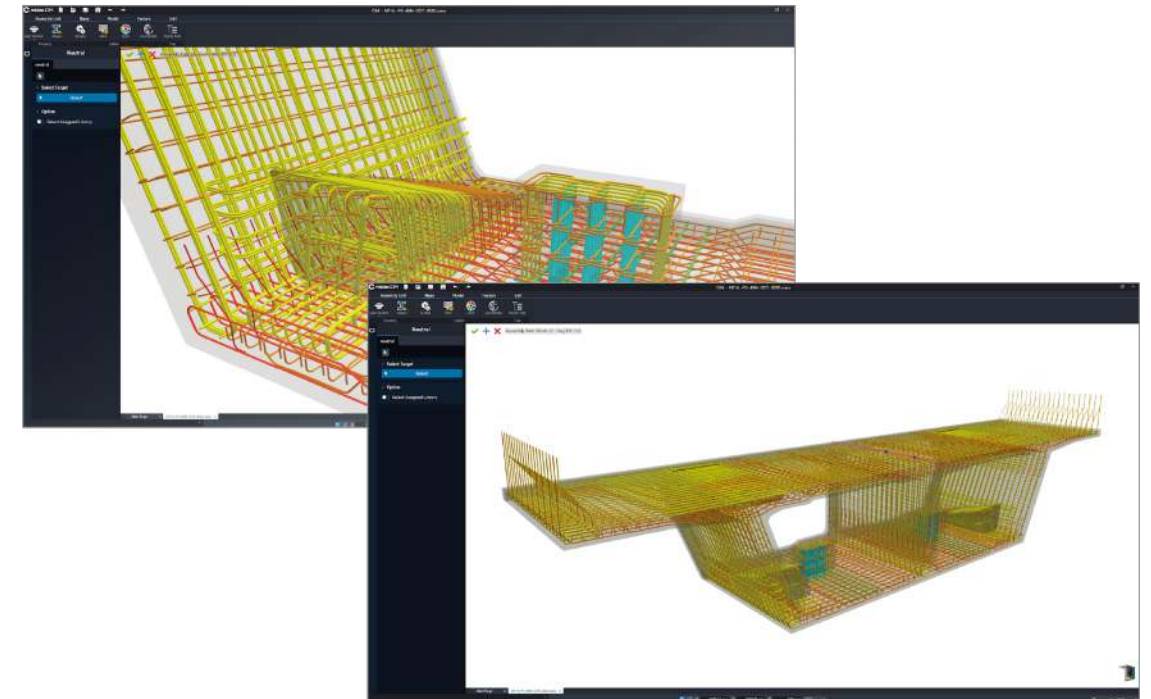
DongJiang Bridge
in china

Bridge type	: Cable Stayed Girder Bridge
Total Span	: 506m
Span Configuration	: 118m + 270m + 118m

DongJiang Bridge is located in Huizhou City, Guangdong Province, China, and was designed by the 5th Design Institute of the China Railway Group. The main bridge is a cable-stayed bridge with a PSC box girder, and 3D modeling was carried out considering the road alignment. The pylon height above the girder is 70m, the cables are arranged in a harp shape, and 80 pairs of cable members are modeled.

LiLi Bridge
in china

Bridge type	: Steel Box Arch Bridge
Total Span	: 210m
Span Configuration	: 50m + 110m + 50m

LiLi Bridge is located in Suzhou City, Jiangsu Province, China, and was designed by the Dongje University Design Institute in Shanghai, China. This is the arch bridge modeling case of the steel box girder, including detailed modeling of the steel joints, stiffeners, and sub-structures.


ChaiJiaXia Bridge
in china

Bridge type	: Cable Stayed Girder Bridge
Total Span	: 1,250m

The ChaiJiaXia Yellow River Bridge located in Lanzhou City, Gansu Province, China, was designed by the Urban Construction Institute in Shanghai, China. As an asymmetrical S-shaped curved cable-stayed bridge, the height of the main tower is 96m and 114m, respectively, and the vertical elevation deviation of up to 8.3m is considered in the 3D model. The Yellow River Bridge, modeled using midas CIM, won first place in the China Innovation BIM Competition.

JACOBS
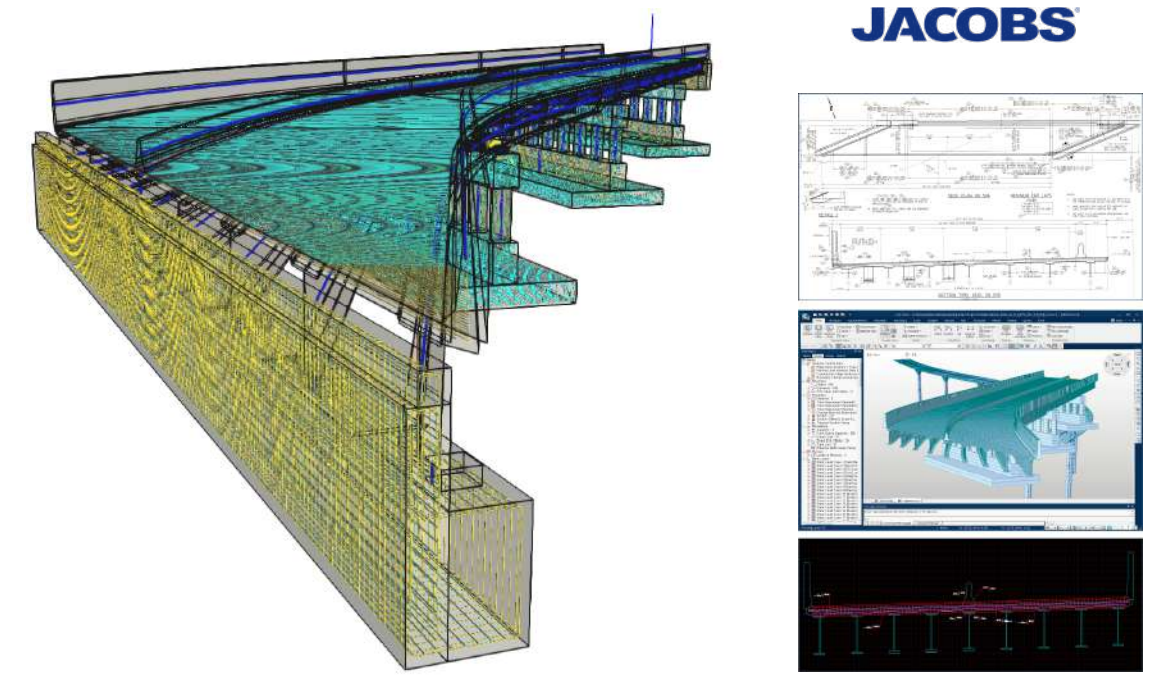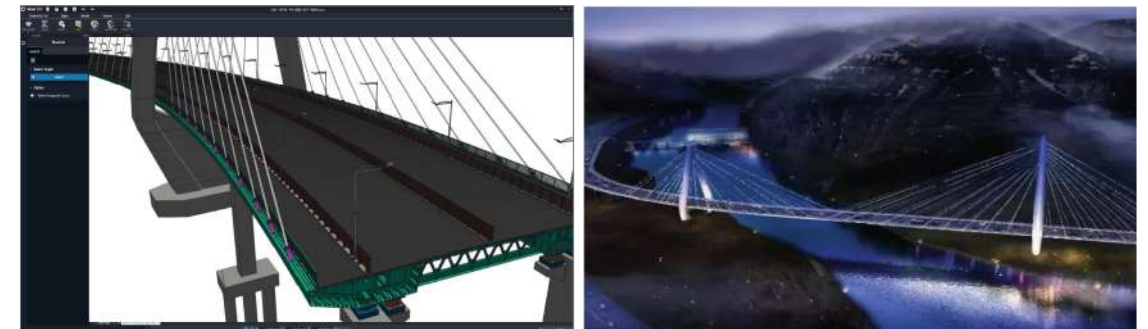
Why midas CIM

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Experience

midas CIM provides a high-quality data interface with midas Civil and GTS NX and automatically creates the 2D CAD drawings in midas Drafter.

MIDAS