



The Next Generation Work Process for Civil Engineering



Engineering Software

Total Solution Service



# Global Network

MIDAS software is distributed over 110 countries through 6 overseas corporate offices and 35 regional business partners around the world

**No.1**

Market share

**6**

Regional offices

**35**

Distributors

**110**

Countries

MIDAS (Seoul)	Thailand	UAE
China (Beijing)	Malaysia	Nigeria
USA (New York)	Singapore	Ghana
India (Mumbai)	Indonesia	Seattle
Japan (Tokyo)	Netherlands	Mexico
UK (London)	Italy	Puerto Rico
Russia (Moscow)	Sweden	Venezuela
Shenyang	Slovenia	Colombia
Shanghai	Lithuania	Ecuador
Chengdu	Poland	Bolivia
Guangzhou	Slovenia	Brazil
Taiwan	Turkey	Chile
Vietnam	Egypt	

**30,000 Licenses**

**10,000 Clients**





# Civil engineering structural analysis & design solution.

MIDAS Civil is a structural analysis program that integrates the analysis and design process of bridges into a single program with moving load analysis, PSC bridge design, Cable-stayed bridge design and Suspension bridge design. MIDAS FEA provides an optimum solution to investigate linear static failure, material / geometry nonlinearity, heat of hydration, contact, crack propagation, fatigue and other detailed analysis. And, MIDAS UMD is a program, which offers the best design efficiency and productivity with examination of the cross section structures, basic design, stress examination and so forth.

## **midas Civil**

Software of structure analysis and optimum design in Civil engineering

## **midas FEA**

Software for detailed nonlinear analysis in Civil engineering

## **midas UMD**

Software for unit structure design in Civil engineering

Midas Civil is a structural analysis program that integrates the analysis and design process of bridges into a single program with moving load analysis, PSC bridge design, Cable-Stayed bridge design and Suspension bridge design.

The ability to manage complex bridges and the user-friendly interface are the strong points of midas Civil.

Especially, the construction stage analysis feature is "the" favorite feature of our customers.

# Rusky Island Bridge

Vladivostok, Russia



**Owner** Russian Federal Road Agency-Directorate for Construction of Road Facilities in Vladivostok  
**General Contractor** SK Most / Mostovik  
**Engineering Consultant** Mostovik  
**Construction Period** 2009 - 2012  
**Type of Project** Cable-stayed Bridge  
**Size of Structure** 1.1km Main Span, 3.1km Total Length



midas **Civil**

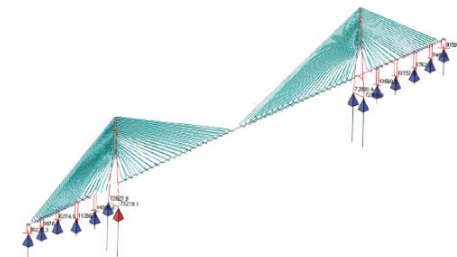
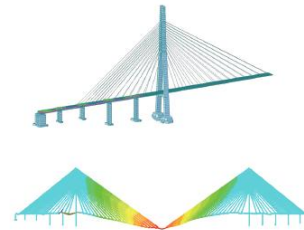
## Main features used in this application



- Unknown load factor and lack of fit force for cable optimization
- Construction stage analysis with composite action
- Moving load analysis

## Description on this project

The bridge to the Rusky Island is one of the world's largest cable-stayed bridges with the 1,104m long of the central span and it establishes a new record of bridge building practice in the world. The bridge also has the highest bridge towers and the longest stayed cables.



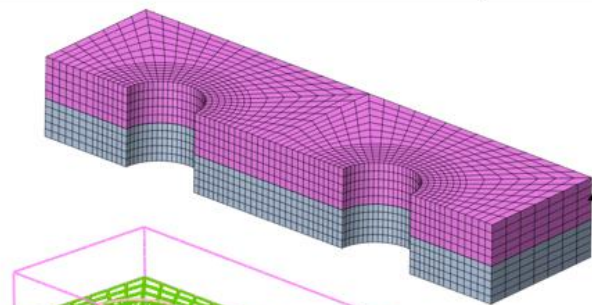
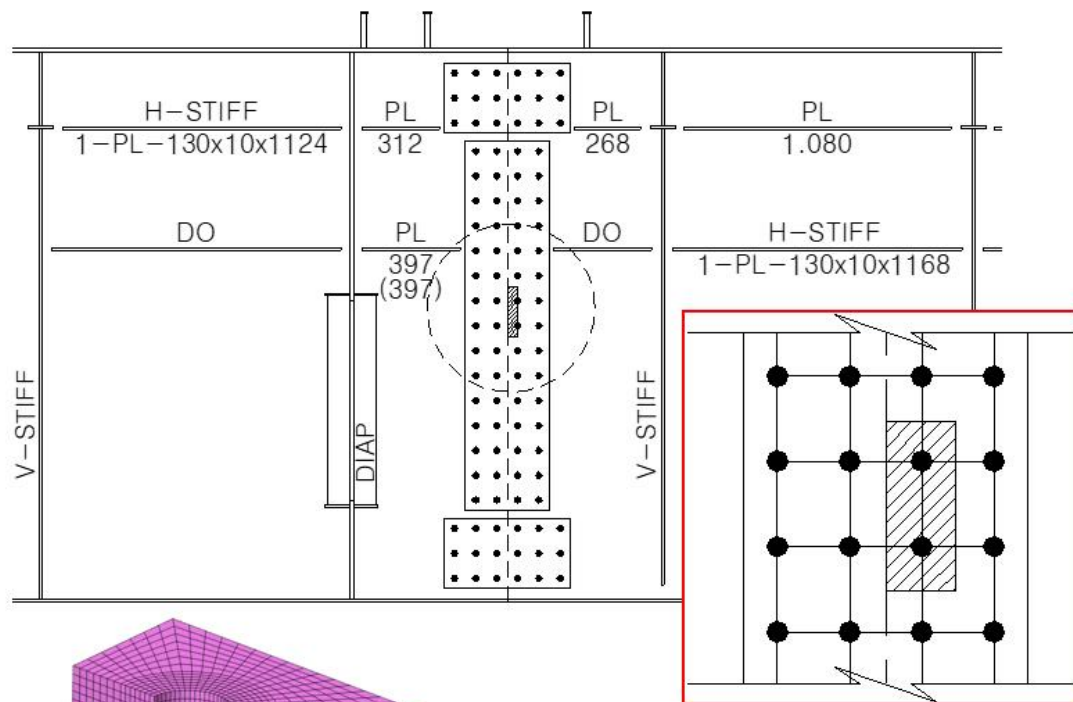
## Mostovik

**Address** Mira prospekt 5 Omsk, 644080, Russia  
**Introduction** NPO Mostovik offers construction contract services which includes construction of roads and bridges. Also, it was founded in 1982 and is based in Omsk, Russia. As of 2016, it is in reorganization.  
**Website** [www.mostovik.ru](http://www.mostovik.ru)

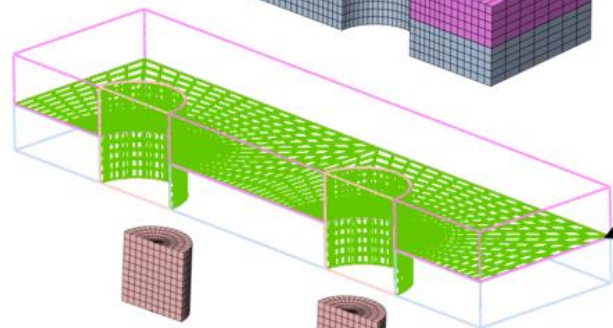
The next software named midas FEA NX might be less familiar to you.

midas FEA NX provides an optimum solution to investigate linear static failure, material / geometry nonlinearity, heat of hydration, contact, crack propagation, fatigue and other detailed analysis.





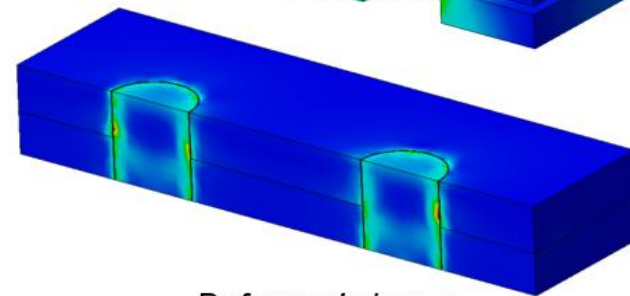
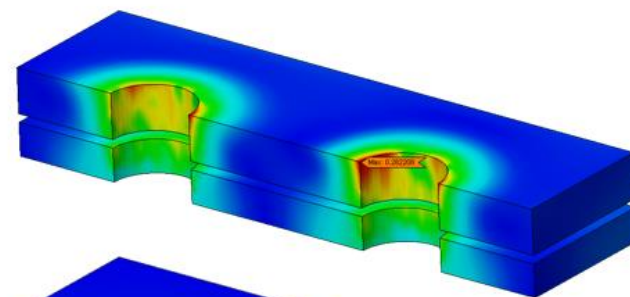
Gusset and web plates



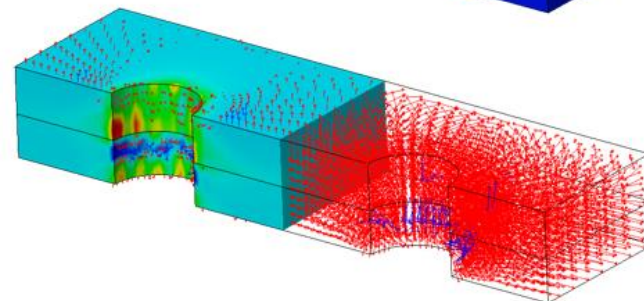
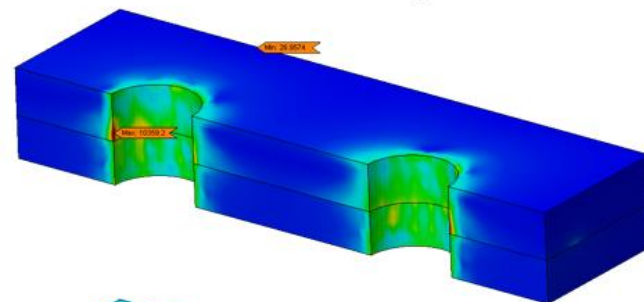
Contact faces



Pins



Deformed shapes



Stress in contact faces



# Analysis & Design Solutions for Construction.

midas Gen is an integrated, general-purpose structural analysis system with an intuitive User Interface and computer graphics for buildings and other constructions. The User Interface provides excellent accessibility and efficiency on complex structures with modeling, analysis and design. It is loaded with high-performance Multi-Frontal solver and analysis algorithm, offering the best solution in the field of analysis of building structures in the domestic as well as international construction sector.

## midas Gen

Software for optimum design and analysis of general building structures

## midas ADS

Software for design and analysis of shear wall apartment

## midas Design+

Member design and drawing generation software

## midas Drawing

Software for drawing structures and automatic calculations

## midas Modeler

Automatic structural analysis modeling software

## midas eGen

Software for structural design of low buildings

midas GEN is an integrated, general-purpose structural analysis system with an Intuitive User interface and computes graphics for building and other constructions.

The User Interface provides excellent accessibility and efficiency on complex structures with modeling, analysis and design,

It is loaded with high-performance Multi-Frontal solver and analysis algorithm, offering the best solution in the field of analysis of building structures in the domestic as well as international construction sector.



# Burj khalifa

Dubai, UAE



<b>Owner</b>	Emaar Properties
<b>General Contractor</b>	Samsung C&T
<b>Architect</b>	Skidmore, Owings & Merrill
<b>Engineering Consultant</b>	MIDAS IT / Skidmore, Owings & Merrill / Arcadis
<b>Construction Period</b>	2004 - 2010
<b>Type of Project</b>	Mixed-use Building
<b>Size of Structure</b>	829m Height (164-story)



midas Gen

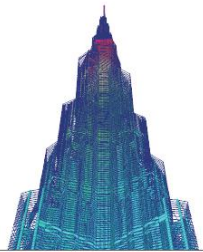
## Main features used in this application



- Construction stage analysis with creep and shrinkage
- Linear static analysis with plate and wall elements

## Description on this project

The Burj Khalifa is a mega-tall skyscraper in Dubai, United Arab Emirates. With a total height of 829.8m, the primary structure is reinforced concrete. It is designed to be the centerpiece of large-scale, mixed-use development. The design is derived from the Islamic architecture of the region, such as in the Great Mosque of Samarra. The Y-shaped tripartite floor geometry is designed to optimize residential and hotel space. A buttressed central core and wings are used to support the height of the building. Although this design was derived from Tower Palace III, the Burj Khalifa's central core houses all vertical transportation with the exception of egress stairs within each of the wings. The structure also features a cladding system which is designed to withstand Dubai's hot summer temperatures.



## MIDAS IT

<b>Address</b>	MIDAS IT Tower, 17, Pangyo-ro 228 beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13487, Korea		
<b>Introduction</b>	MIDAS IT specializes in engineering consultancy, web business and CAE software development. MIDAS IT provides world class consultancy services in the fields of civil, structural, geotechnical and mechanical engineering.		
<b>Website</b>	<a href="http://www.midasuser.com">www.midasuser.com</a>	<b>Email</b>	<a href="mailto:info@midasit.com">info@midasit.com</a>



# Structure analysis of Ground field and design solution.

GTX NX is a finite-element-based analysis solution for geotechnical structures that is equipped with an optimized 64-bit solver on a next generation platform. SoilWorks is a total solution that reviews the practical design of tunnels, temporary facilities, slope faces, weak grounds, basins, penetrations and other fields of dynamic analysis and provides high-quality results. MIDAS GeoXD is a system that provides drawing and design of temporary facilities on the same work environment through direct CAD integration, and calculates result values in the shortest possible time.

## GTX NX

General-purpose geotechnical analysis software

## SoilWorks

Total solution for geotechnical design and analysis

## midas GeoXD

Software of calculating temporary facility structures and generating floor plan / quantity



midas GTS NX is a comprehensive finite element analysis software package that is equipped to handle the entire range of geotechnical design applications including deep foundations, excavations, complex tunnel systems, seepage analysis, consolidation analysis, embankment design, dynamic and slope stability analysis.

GTS NX also has an advanced user friendly modeling platform that enables unmatched levels of precision and efficiency.

# King's Cross Station

London, UK



Owner  
Network Rail  
Architect  
John McAslan + Partners  
Engineering Consultant  
Arup / Morgan Sindall  
Construction Period  
2008 - 2013  
Type of Project  
Railroad Station



GTSNX

## Main features used in this application



- The section of the existing tunnel where the shaft intersects is strengthened with block work
- The cylindrical section of the shaft is built with segmental lining
- The tapered section of the shaft is built in 1m deep stages and lined with sprayed concrete

## Description on this project

The redevelopment of King's Cross station in the city of London is turning a historic rail terminus into a dynamic transport hub. Arup's work as a lead consultant on King's Cross station embraced transport planning, multi-disciplinary engineering services, security, IT, lighting design, acoustics, visualization, and pedestrian modeling.



Arup	
Address	13 Fitzroy Street, London W1T 4BQ, UK
Introduction	Arup is a multinational professional services firm headquartered in London which provides engineering, design, planning, project management and consulting services for all aspects of the built environment. The firm has over 14,000 staffs based in 92 offices across 42 countries, and has participated in projects in over 160 countries.
Website	www.arup.com
Email	london@arup.com

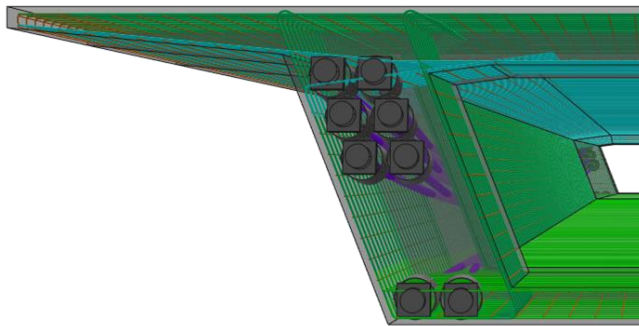


The Next Generation Work Environment for Civil Engineering



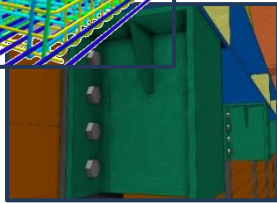
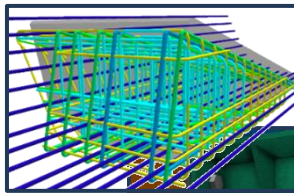






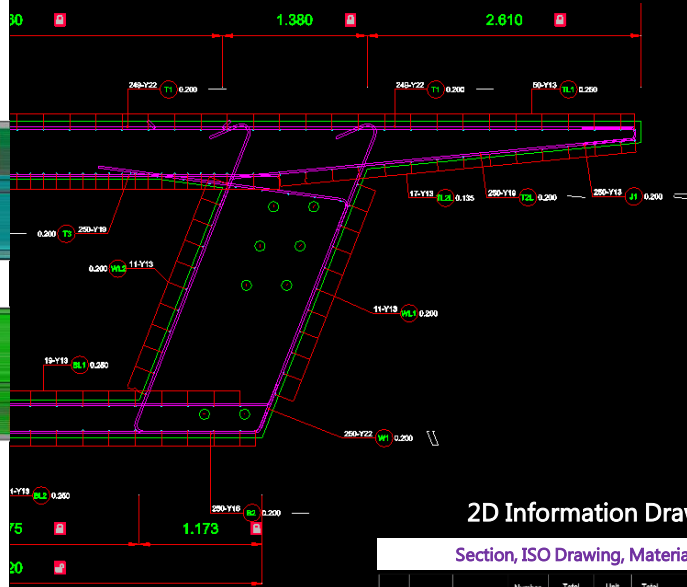
3D Detail Model

Rebar, Tendon, Stiffener, Bolt Detail








**Drawing View Export**

**Drawing View Update**



2D Information Drawing

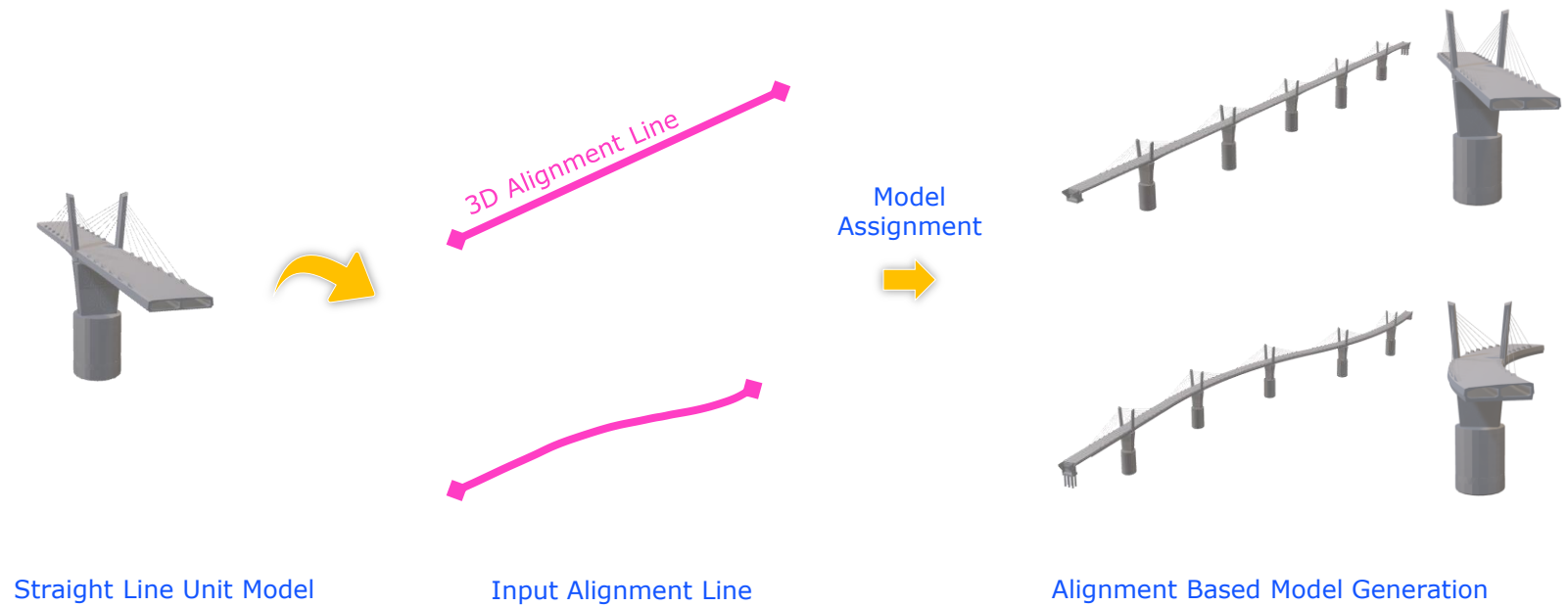
Section, ISO Drawing, Material List

Bar Mark	Diameter Name	Length (mm)	Number of Rebar	Total Length (m)	Unit Weight (kg/m)	Total Weight (ton)	Rebar Shape
B1	D16	5,322~5,440	250	1,182.730	1.580	2.082	
B2	D16	5,238	250	1,312.950	1.580	2.042	
H1	D19	2,667~2,780	250	627.633	2.250	1.555	
H2	D19	2,667~2,780	250	627.633	2.250	1.555	
J1	D13	1,076	250	276.561	0.990	0.269	

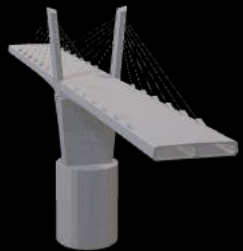
Auto Generation of Section  
In 2D Information Drawing

Auto Update of Drawing Object

## Model Generation Process



# Library Catalog



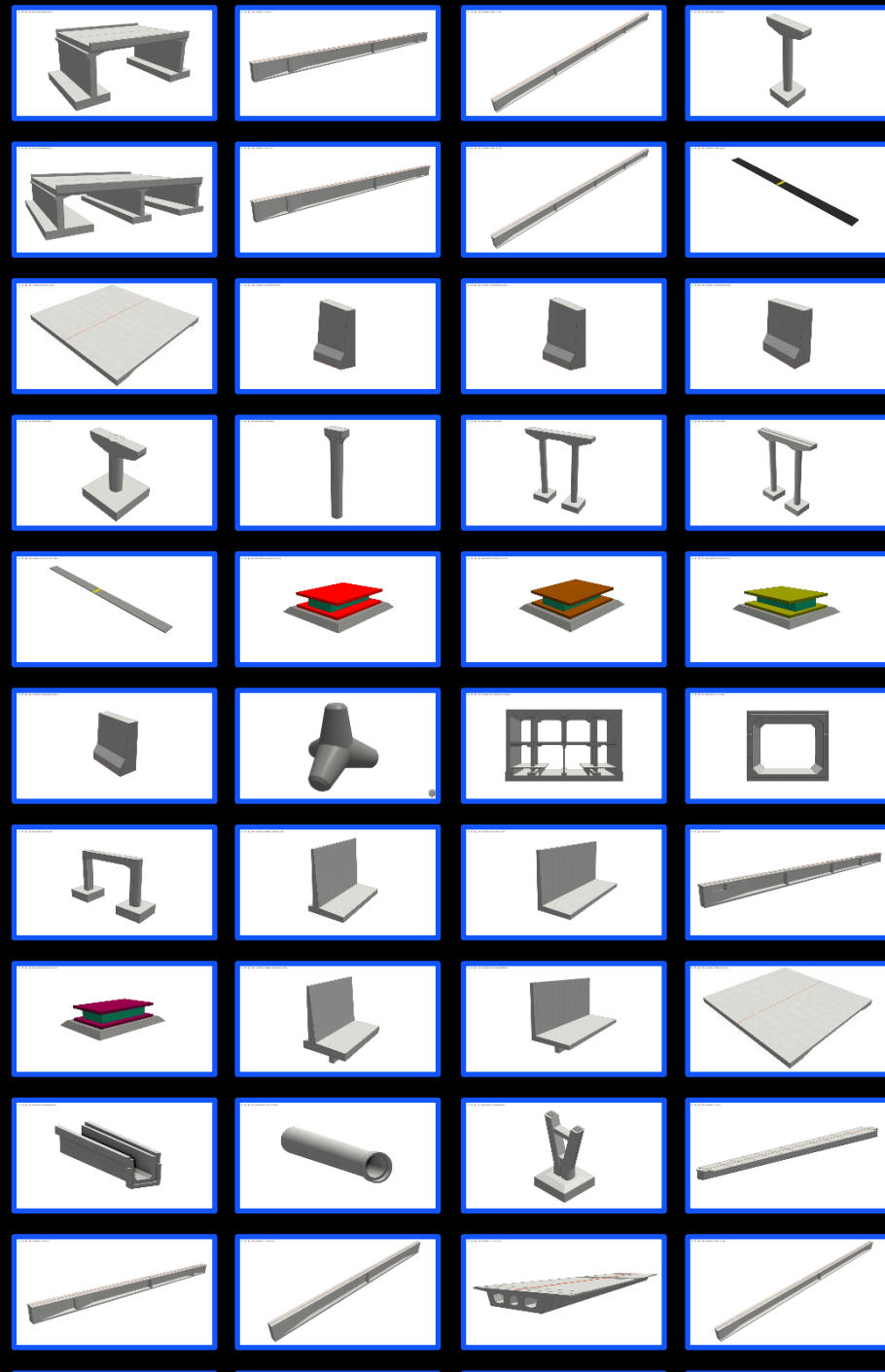
Assembly Unit



Curve Library

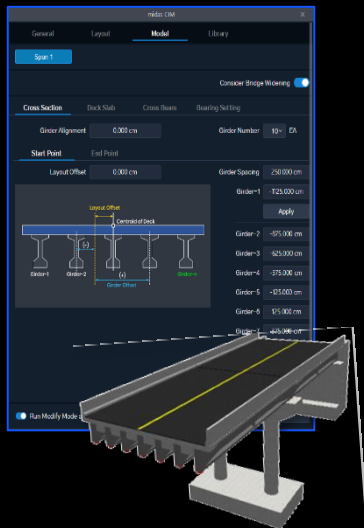


Point Library



# Smart Template

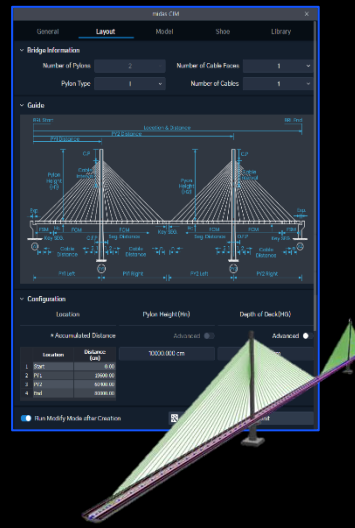
PSC Beam Bridge



PSC Box Bridge



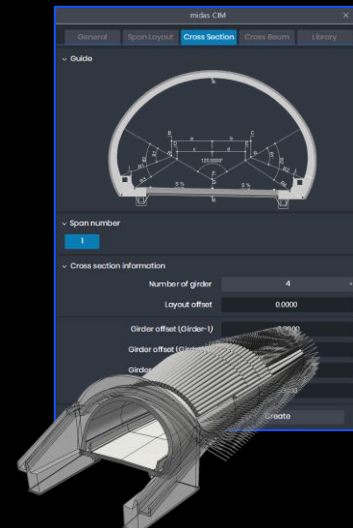
Cable Stayed Bridge



Suspension Bridge



Tunnel







Launch

## About

License

## Recent Project

## Create Project

Curve Library

Base

Model

Feature

Edit

View

Setting

Plane

Path

Point

Path Linked

1 Point Linked

Export

Parameter

Text File

Regenerate

Setting

Constraint Entity

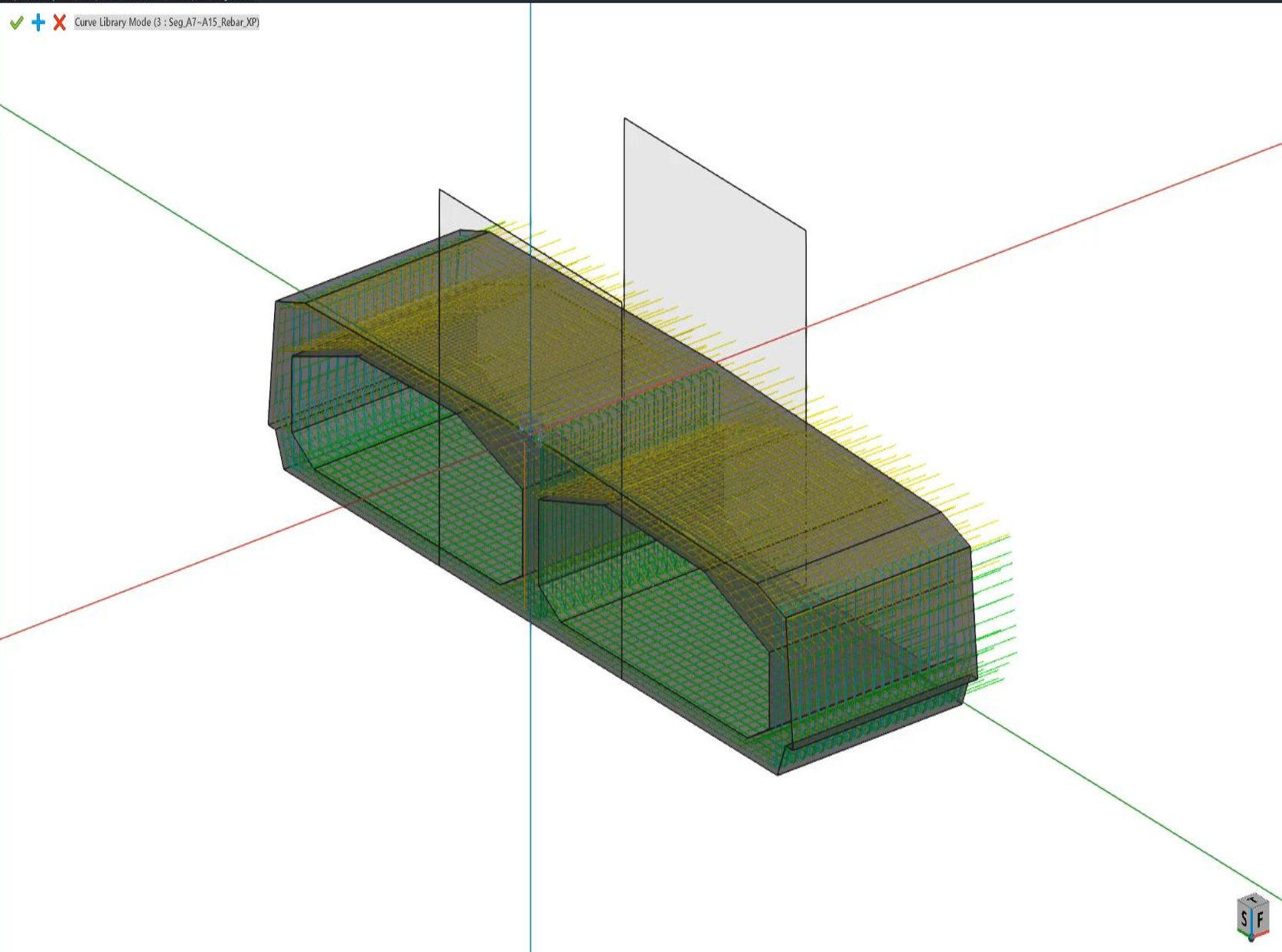
Expression Entity

Export

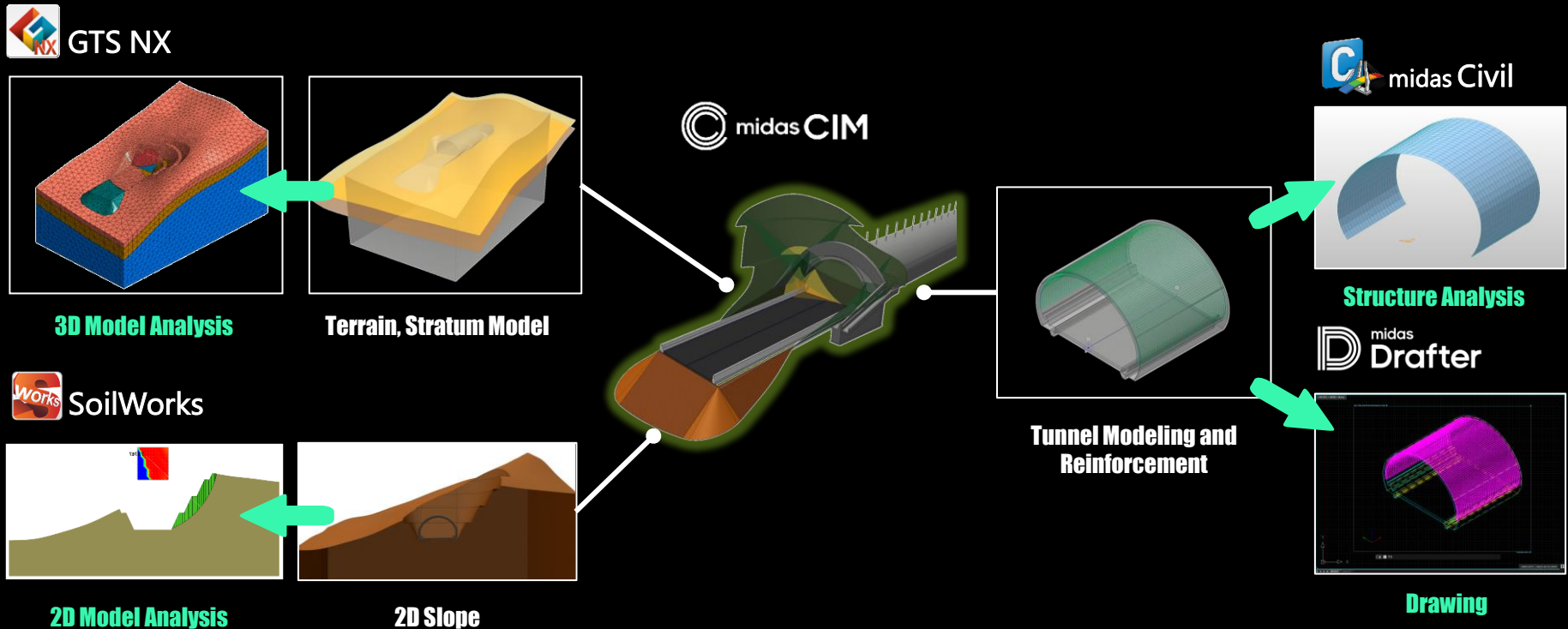
Parameter

Temp

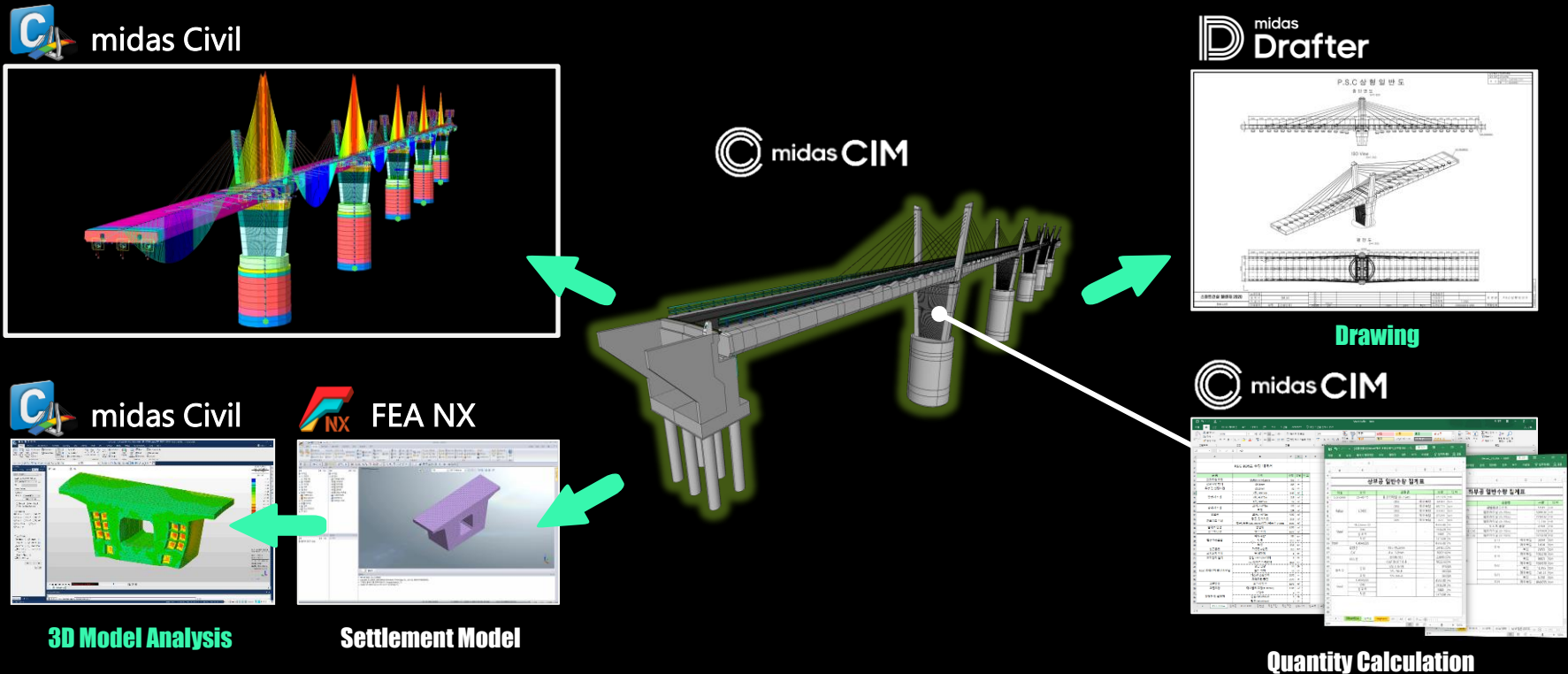
Regenerate



# Geotechnical Design with CIM



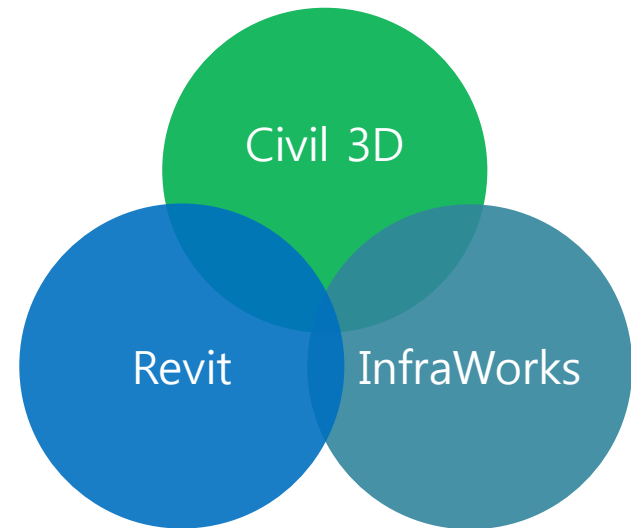
# Bridge Design Process with CIM

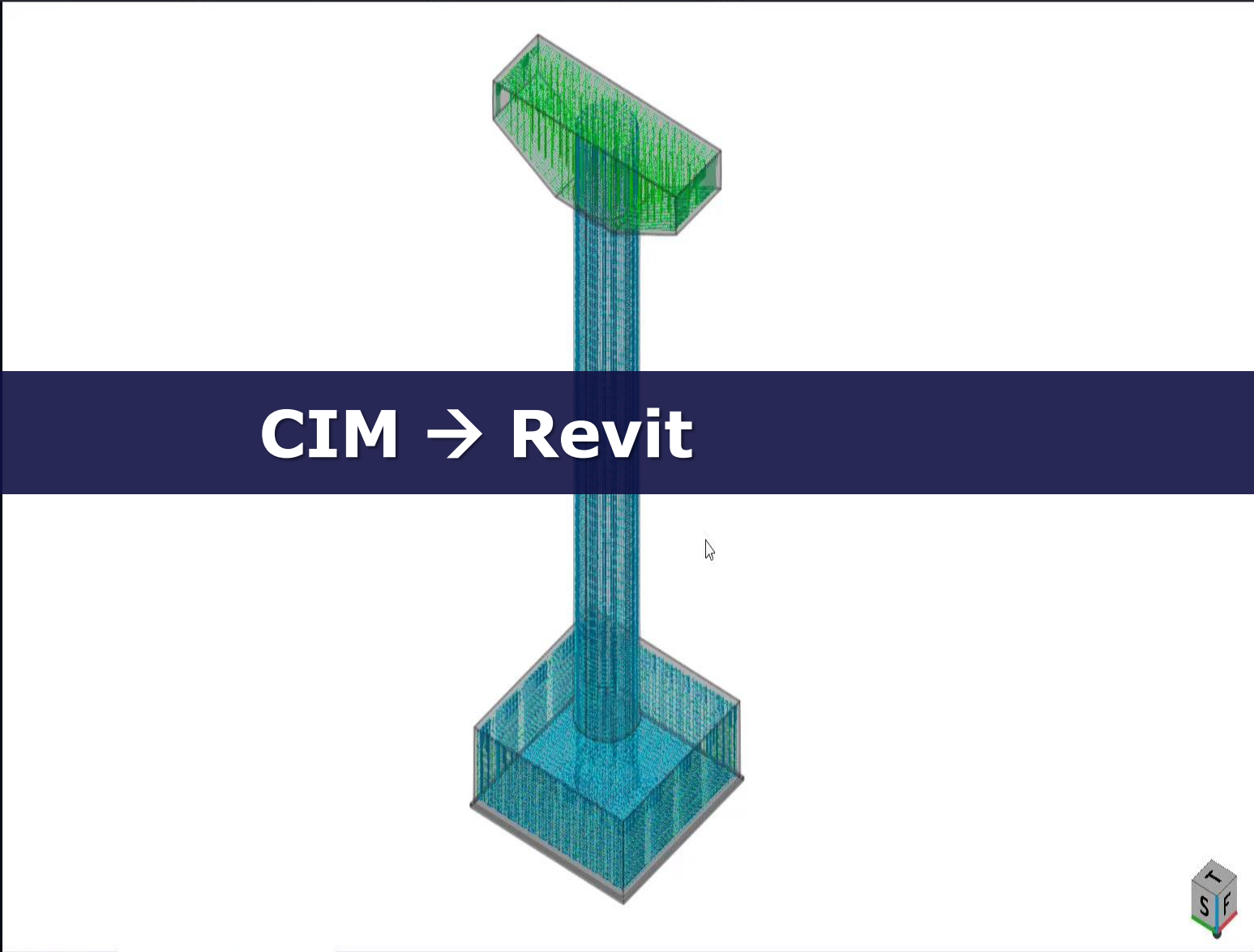
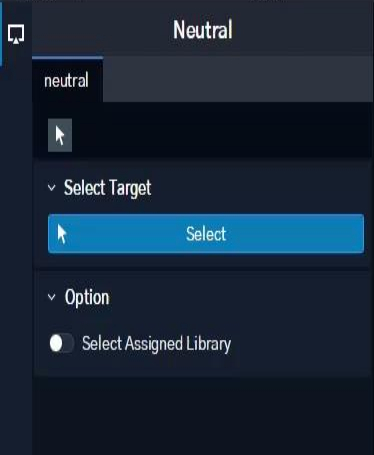






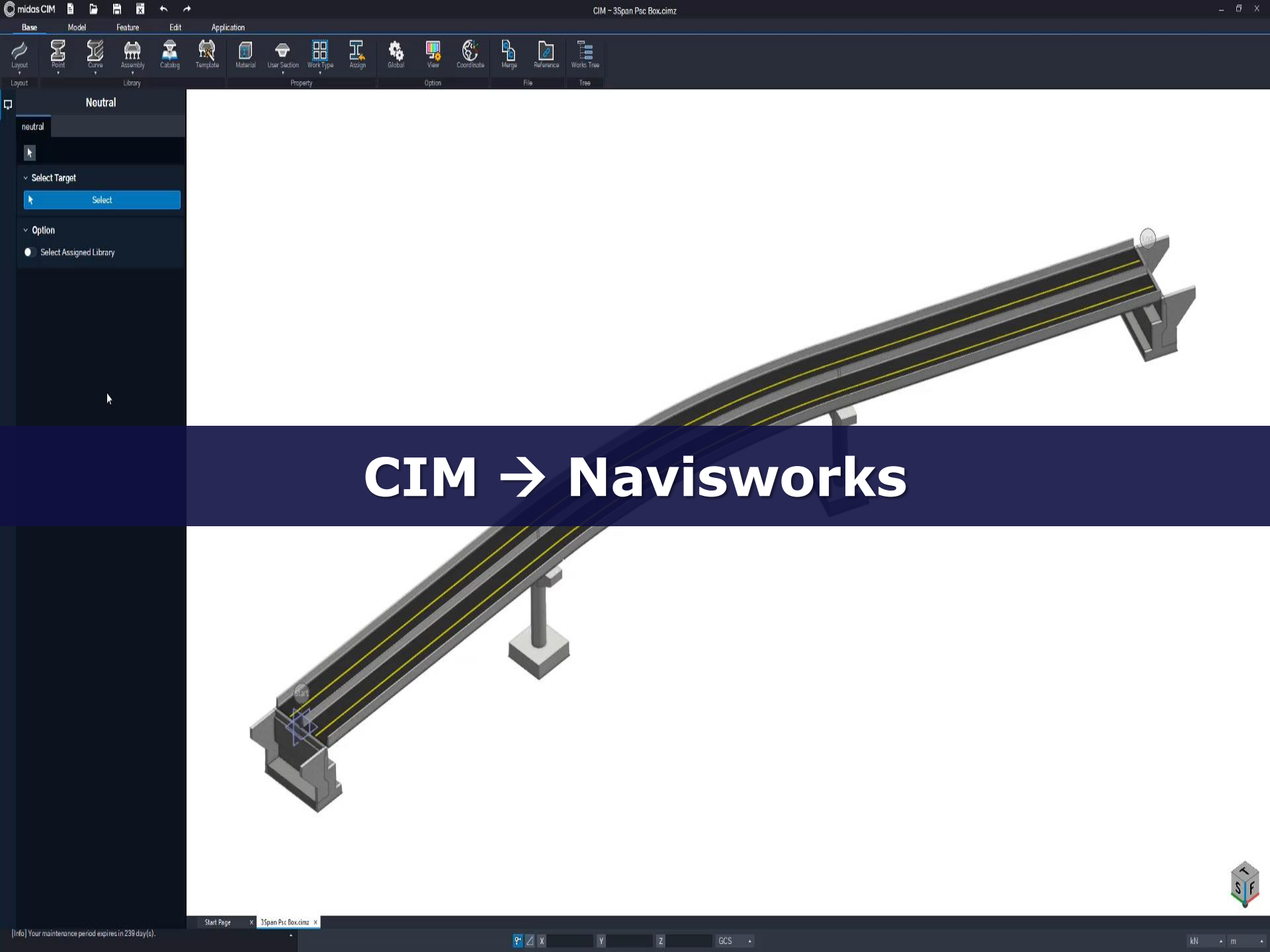
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CIM → Revit







# CIM → Infraworks





The image is a 3D digital rendering of a landscape. It features rolling green hills under a bright blue sky with scattered white clouds. In the center, a two-lane asphalt road with a yellow double line and white edge lines stretches into the distance. Three cars are on the road: a dark car in the left lane and two light-colored cars in the right lane. To the right of the road, there is a body of water. In the background, a cluster of trees sits on a hill. A dark blue horizontal band with white text is superimposed over the middle of the image.

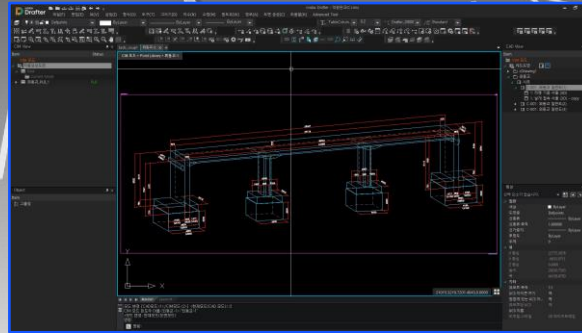
**CIM → Lumion**



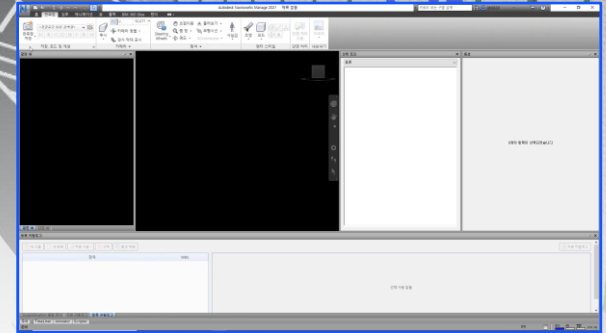
# BIM Conversion Design & Simulation



**[Modelling] BIM Model**



**[Drawing] 3D PDF**



**[Quantity] Navisworks Interaction**



THANK YOU

Kyle Kang  
khko803@midasit.com