

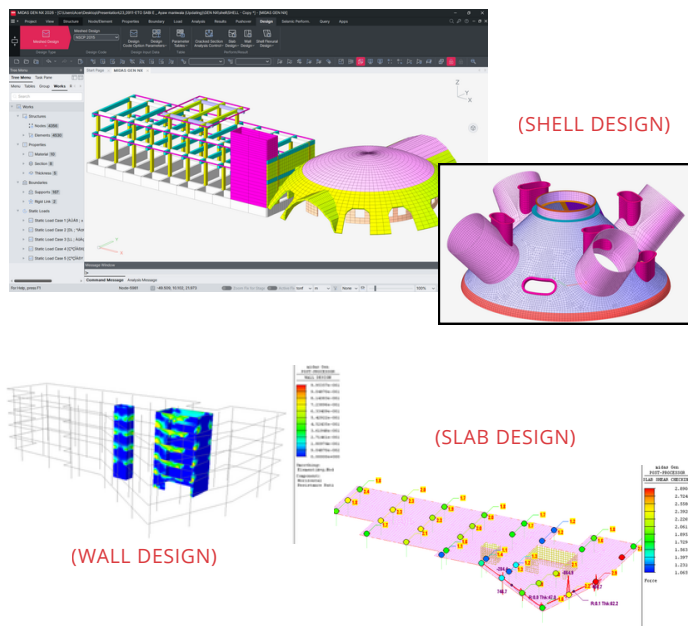
# MIDAS BUILDING PACKAGE

## PERPETUAL SOFTWARE

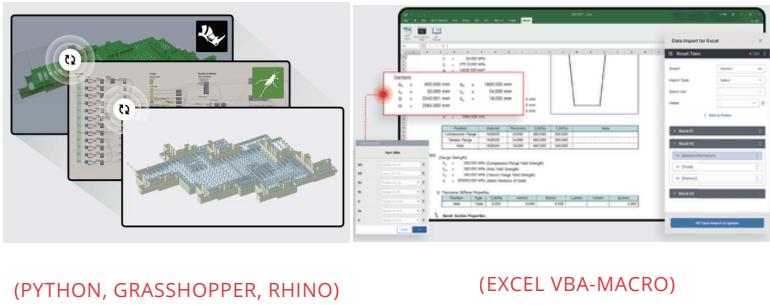
GEN

**MIDAS GEN NX**  
Design Solution for Building and General Structures

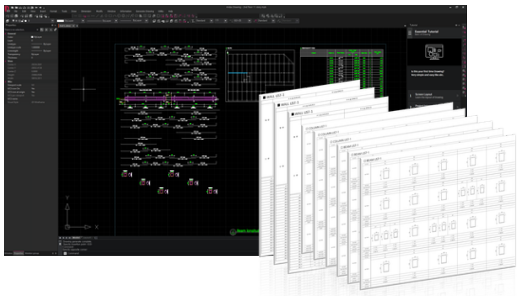
01 **MODEL, ANALYZE, AND DESIGN ALL COMPONENTS**  
(Frames, walls, slabs, foundation, etc.)



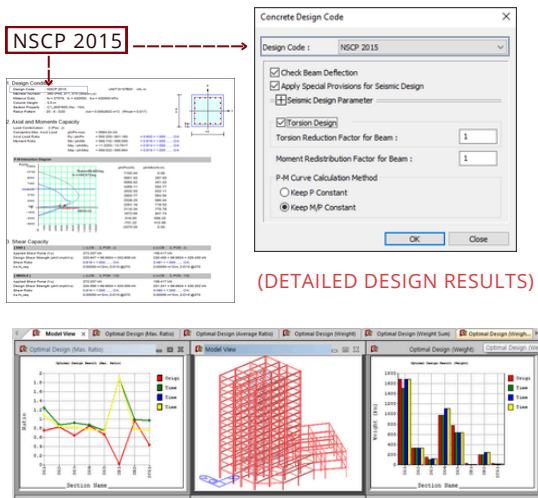
02 **PARAMETRIC MODELING THROUGH SCRIPTING**  
(Application Programming Interface)



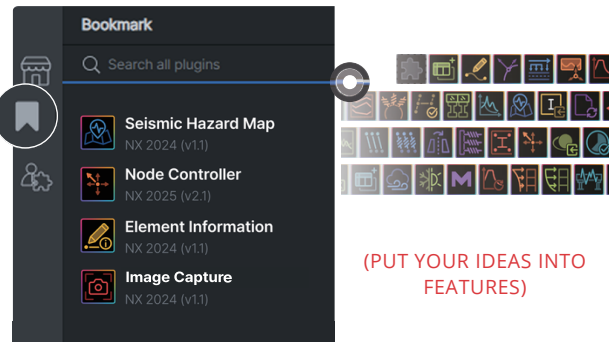
03 **DRAWING GENERATION**  
(Structural plans, section, rebar cutting list, schedule)



04 **NSCP 2015-READY STRUCTURAL DESIGN**  
(Vast database of design codes)



05 **VARIETY OF PLUG-INS IN THE MARKETPLACE**



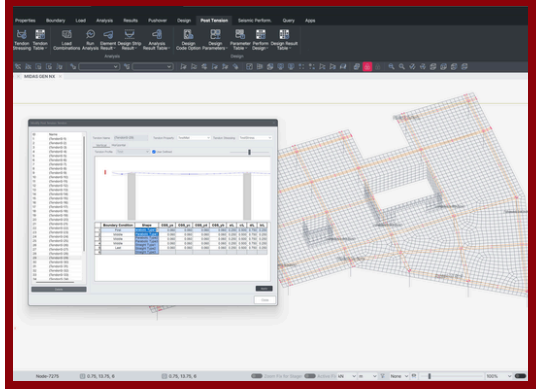
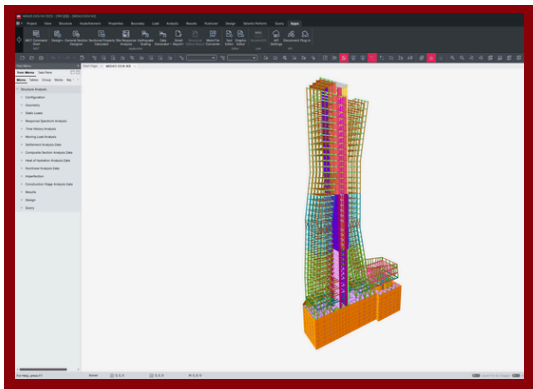
## MAINTENANCE SOFTWARE

D+

**MIDAS DESIGN+**  
Unit Member Design and Detailing Tool

### Analysis Capabilities

- Static Analysis
- Dynamic Analysis
- Moving Load Analysis
- Buckling Analysis
- P-delta Analysis
- Pushover Analysis
- Construction Stage Analysis
- Boundary Nonlinear Dynamic Analysis
- Post-tension and Pre-stressing
- Geometric Non-Linear Analysis



### Inelastic Time History

- Beam Element
- Lumped hinge & Distributed hinge

### Heat of Hydration

- Heat of Hydration Analysis for mass concrete
- Convection, Heat Source, Pipe cooling, etc.

### Material Non-Linear Analysis

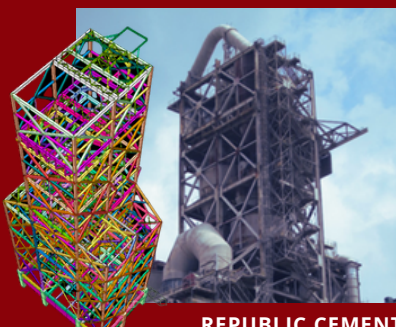
- Truss, Plate, Plane stress, Plane strain, Axisymmetric and Solid
- Tresca, von Mises, Mohr-Coulomb and Drucker-Prager
- Isotropic, kinematic and mixed hardening



**MOSCOW CITY PALACE**  
(RUSSIA)



**BURJ KHALIFA**  
(UAE)

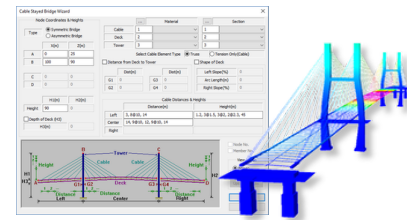


**REPUBLIC CEMENT PREHEATER TOWER UPGRADE**  
(PHILIPPINES)

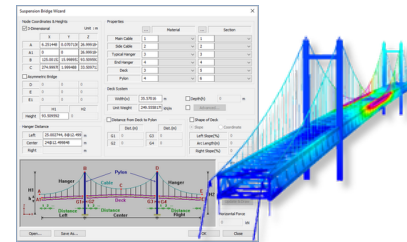


**SEA GAMES ATHLETIC STADIUM**  
(PHILIPPINES)

## 01 Automatic Modeling Wizards

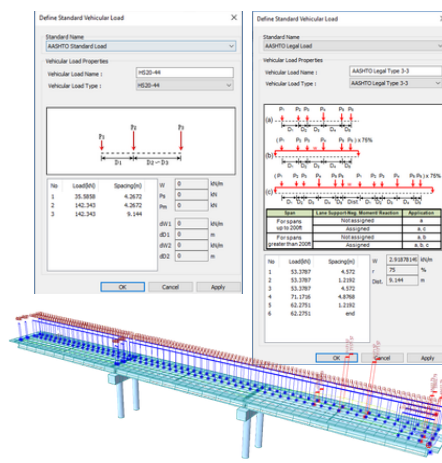


Cable-stayed Bridge Wizard



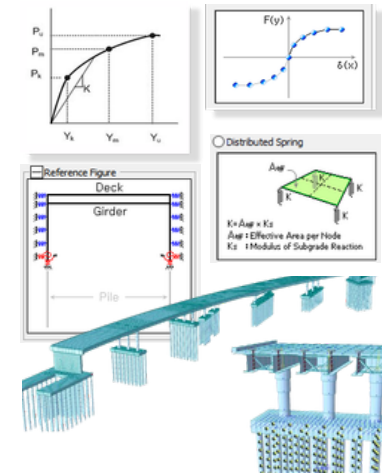
Suspension Bridge Wizard

## 02 Optimized Moving Load Analysis



Moving Load Tracer for Automatic Generation of Critical Vehicle Pattern Loading

## 03 Consideration of Soil Structure Interaction

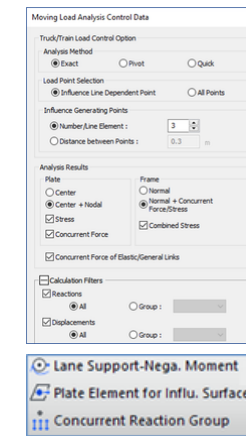


Spring Supports for SSI Simulation

## Analysis Capabilities

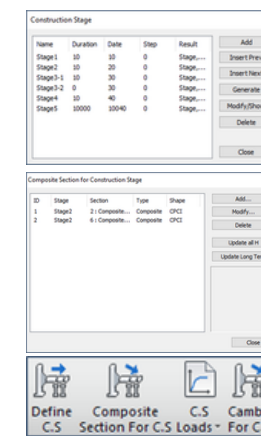
### Moving Load Analysis

Moving load analysis as per AASHTO and other international standards



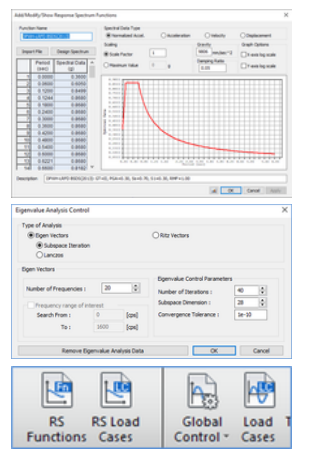
### Construction Stage Analysis

Construction stage reflecting time-dependent material properties and prestress forces.

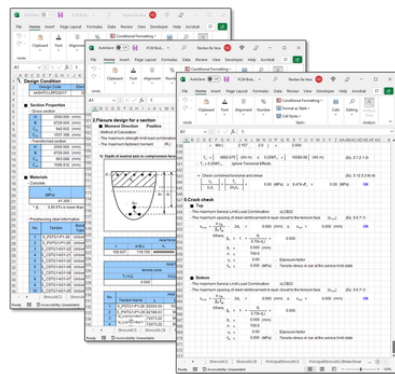


### Linear Dynamic Analysis

Eigenvalue analysis using Subspace Iteration and Lanczos controls

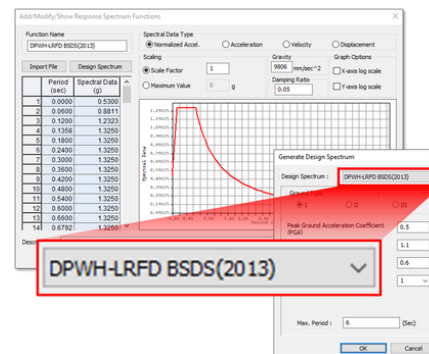


## 04 Comprehensive Report



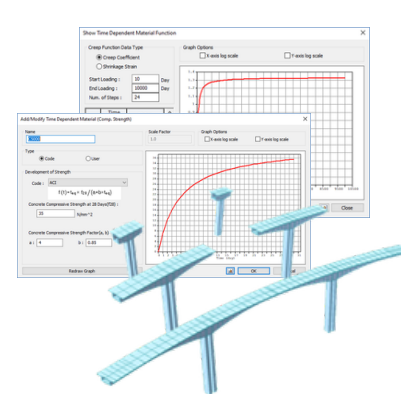
PSC Design Excel Report

## 05 Inclusion of Localized Codes



Automatic RS Function Generation as per DPWH-LRFD BSDS 2013

## 06 Simulation of Construction Stage

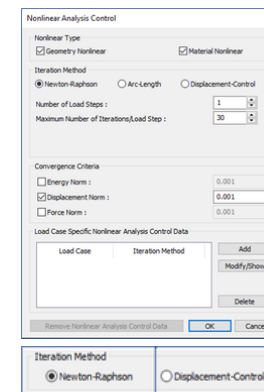


Generate Models for All Construction Stages

## Advanced modules

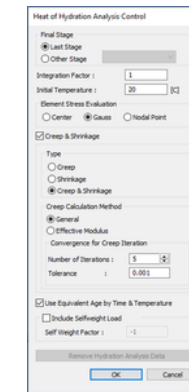
### Nonlinear Dynamic Analysis

Applicable for geometric nonlinear and material nonlinear analysis



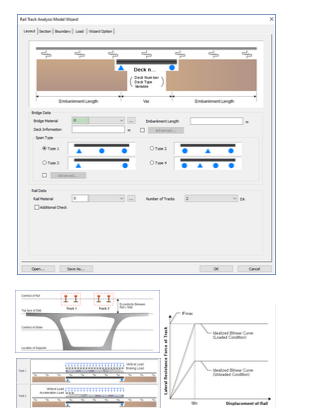
### Heat of Hydration

Considering two parts- Ambient temperature analysis and stress analysis.



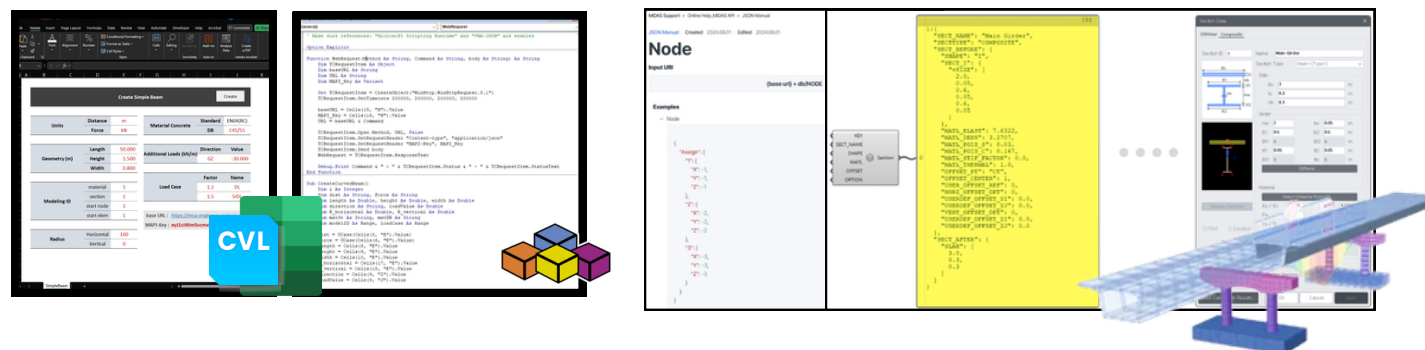
### Rail Structure Interaction

Rail-structure interaction considering temperature, acceleration, and braking loads



## APPLICATION PROGRAMMING INTERFACE

### Data Integration for Bridge Modeling, Loadings, Parametric Analysis, and Design



- Perform design automation using Excel (VBA / Macro)
- Enable data exchange for pre/post processing

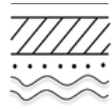
- Integrate Rhino, Grasshopper, Json, and Python to enable parametric modeling/analysis with visual scripting tools
- Reuse design data in repetitive project formats



## 1. ALL-IN-ONE 2D AND 3D GEOTECHNICAL ANALYSIS

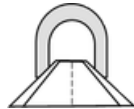
GTS NX **supports various types of analysis**. Selected practical applications of the software are shown below :

**GTS**



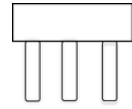
### GROUNDWATER FLOW

Analyze the transient flow of homogeneous and zoned embankments



### TUNNELING AND MINING

Analyze each phase of tunnel construction including the excavation and installation of supports.



### DEEP FOUNDATION

Full range of foundation analyses to generate results for the investigation of new or existing structures.



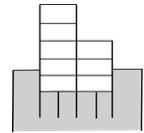
### EXCAVATIONS AND OPEN PIT

Analyze each stage of the excavation sequence along with the permanent and temporary structures



### SLOPE STABILITY

Perform 3D finite element analysis of slopes to generate more accurate and efficient results

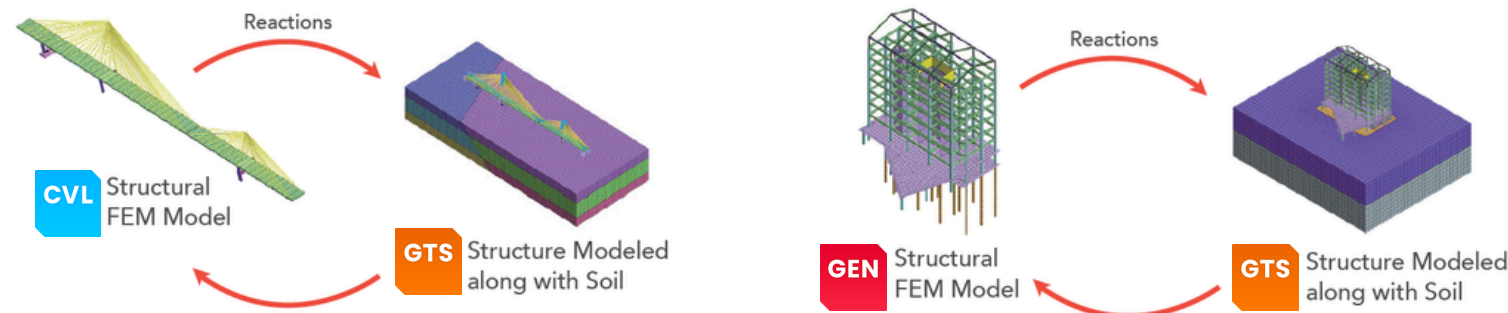


### SOIL-STRUCTURE INTERACTION

Consider the different soil behavior factors influencing the structures' response

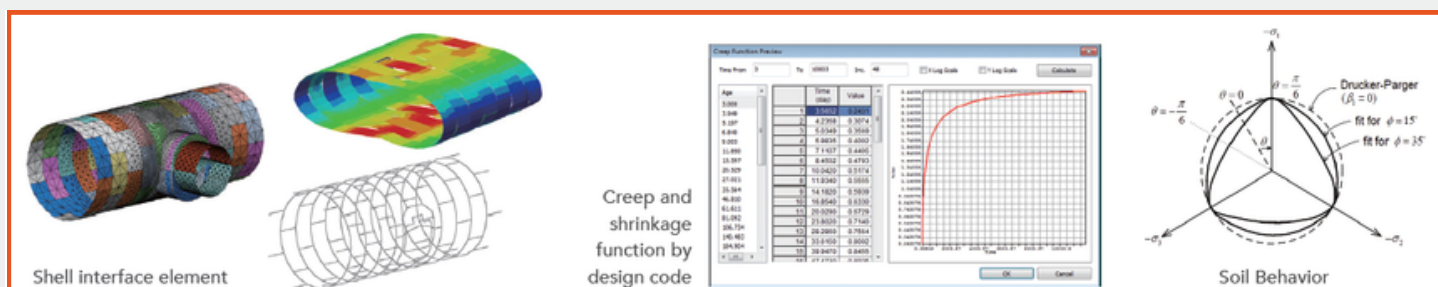
## 2. STRUCTURAL SOFTWARE INTEGRATION

Has the capabilities to **import model information** such as mesh, material, structure cross section and load & boundary condition from MIDAS structural software .



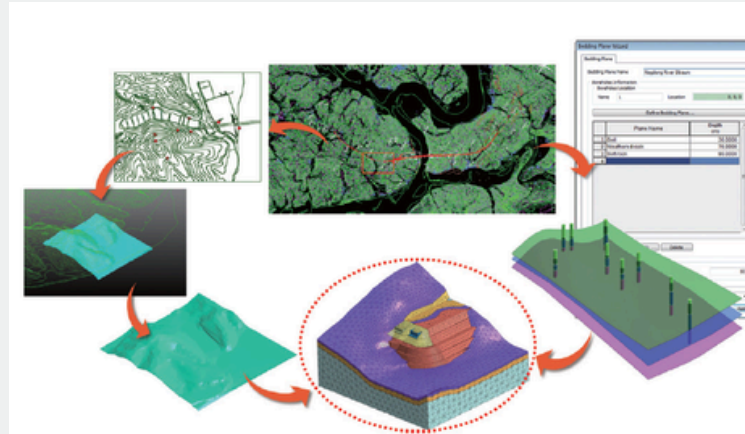
## 3. VARIOUS ELEMENTS AND MATERIAL MODELS

Provides elements that are classified into **line, plane, solid, and other types**. Supports different material models to simulate the behavior of soil, rock and other continua.



## 4. AUTOMATION TOOLS AND USER-FRIENDLY INTERFACE

GTS NX is powerful software with a **"Terrain Geometry Maker (TGM)"** feature that converts digital topographic maps into editable surfaces. It has a user-friendly 'Bedding Plane Wizard' to model uneven soil strata effortlessly.



Create 3D ground surface using **topographic map**

| File Format                     | Description                           |
|---------------------------------|---------------------------------------|
| *.dwg                           | AutoCAD drawing files                 |
| *.dxf                           | AutoCAD drawing Interchangeable files |
| *.x_t;*.xmt_txt;*.x_b;*.xmt_bin | Parasolid (9 to 29)) files            |
| *.sat;*.sab;*.asat;*.asab       | ACIS (R1 to 2018 1.0) files           |
| *.stp;*.step                    | STEP (AP203, AP214) files             |
| *.igs;*.iges                    | IGES (Up to 5.3) files                |
| Mining File Extension           | leapfrog, MICROSTATION                |

Automatically create **3D geological** stratum through actual field data

## MIDAS LOCAL PARTNERS



## Contact Us

phmarketing@midasit.com

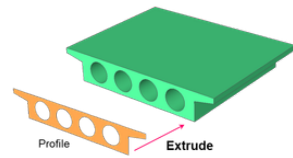
(+639) 17 701 0712

MIDASIT PHILIPPINES CORP

@PHMIDASUSER

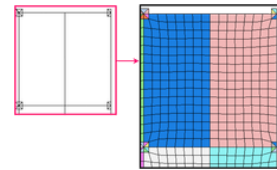
# CONFIGURATION

## Geometry Modeler



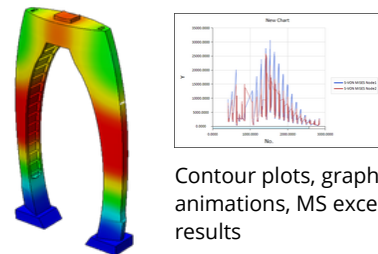
Cad-based modeling.  
(extrude, sweep, fillet,  
project, revolve, etc.)

## Mesh Generators



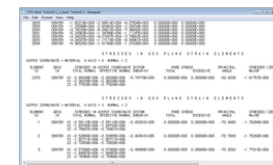
Automatic surface and solid  
meshing.  
(tetrahedron, pyramid, and  
hexahedron elements)

## Post Processing



Contour plots, graphs,  
animations, MS excel compatible  
results

## FEM Solver

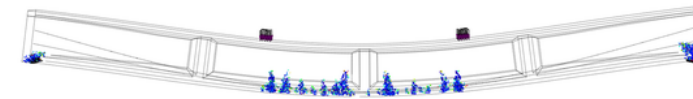


Stable stress convergence  
regardless of the applied  
load, and fast convergence  
speed of nonlinear analysis.

# APPLICATION AREAS

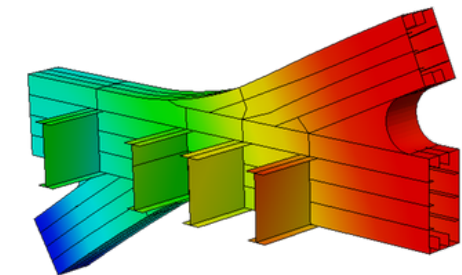
## 1. Crack Analysis

Crack width calculation in the nonlinear  
analysis of reinforced concrete  
elements.



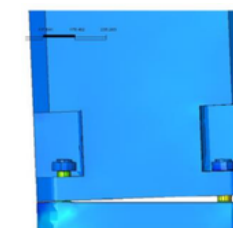
## 2. Complex Junctions

Apply Finite Element Method on Complex  
connections and junctions.



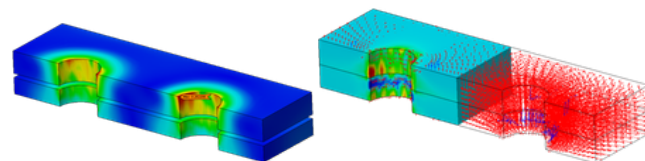
## 3. Retrofitting

Simulate the actual behavior of existing  
structures including its critical members.



# ANALYSIS CAPABILITIES

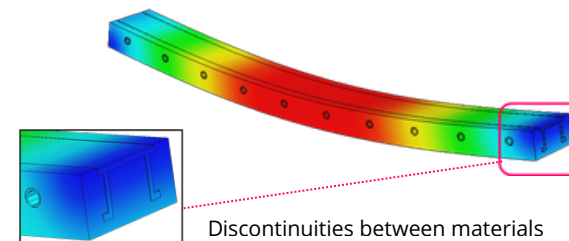
## Static Contact Analysis



Deformed shapes

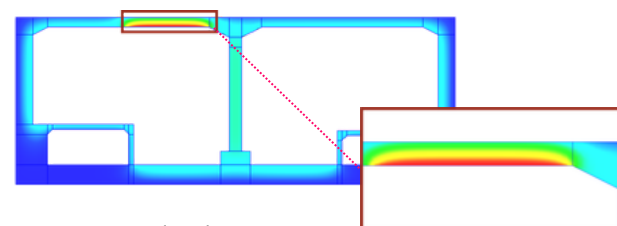
Stress in contact faces

## Interface Nonlinear Analysis



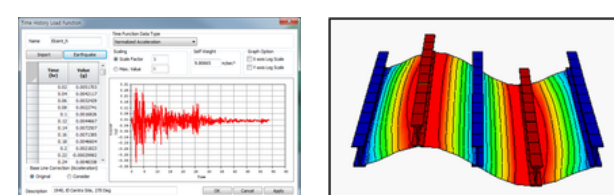
Discontinuities between materials

## Heat of Hydration Analysis



Temperature distribution

## Dynamic Analysis



Time history load function

MIDAS FEA **NX**

