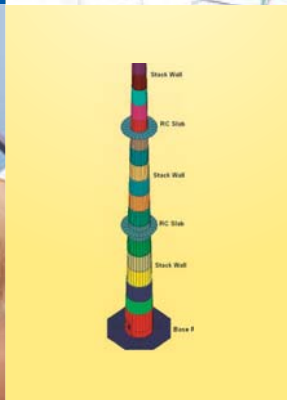


CRANES: Civil – Structural Engineering Services



Civil Engineering Services

The Cranes - Civil Engineering Services Group is in the business of providing services for the civil & structural engineering community for the last 15 years. Our team includes PhDs with more than 25 years of experience (Civil - Structural Engineering), Masters in Engineering (Structures) and Bachelors in Civil Engineering.



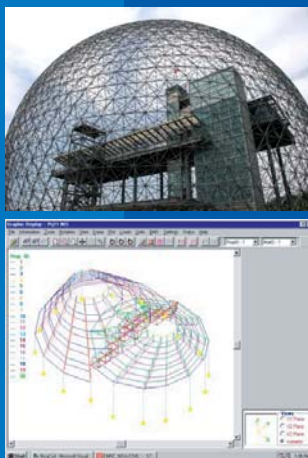
Our Activities

- Analysis & Design of Civil Structures
- Proof Checking of Analysis & Designs
- Software development for Analysis, Design & Drawing for Civil Engineering Structures - NISA/CIVIL
- Customized software development for Civil Engineering
- Research & Development related to Civil Engineering field

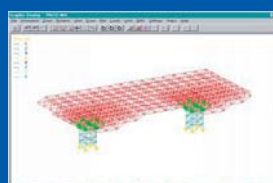


Analysis Capabilities

- Static Analysis
- Modal Dynamic Analysis
- Advanced Dynamic Analyses (Transient, Time History, etc.)
- Floor Response Spectra
- P- Δ Analysis
- Construction Sequence Analysis including prestressing sequence
- Nonlinear Analysis (Material, Geometric)
- Fluid Structure Interaction



Steel Dome structure for assembly hall in Mysore



Design/Analysis and qualification of structure

Civil Design Capabilities

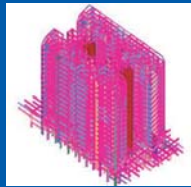
- Buildings – RCC, Steel
- Bridges – Straight, Curved, Skew
- Analysis of Nuclear Power Civil Structures
- Machine Foundations – TG Foundations, Block Foundations
- Space Frames including Joint Selection and Allocation
- Structural analysis and Design of Pipes
- Gas holding structures
- Under Tunnels, Super passages, Aqueducts
- Cooling Towers, Smoke Stacks
- Water Treatment Plants, Retaining Structures
- Modeling and Analysis of Innovative Civil Engineering structures
- Seismic Re-Evaluation of structures as per AERB/ASME/ASCE

Software Tools and Expertise

NISA/CIVIL
STAAD®

ANSYS®
AutoCAD®

LS-DYNA®
CAESAR®



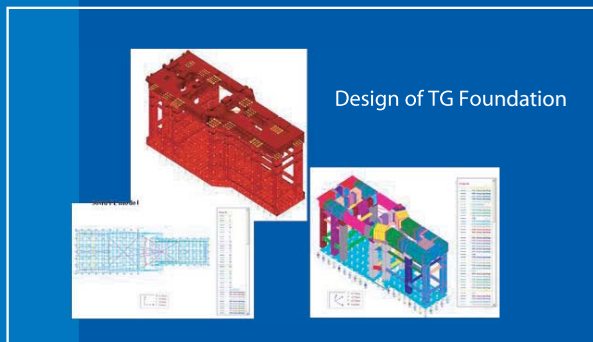
Design/Analysis and qualification of high-rise building



Evaluate Ultimate Load carrying capacity inner containment structure beyond Accident Scenario

Partial list of Innovative R & D work handled by members of our group

- To Evaluate Ultimate Load bearing capacity of Nuclear containment structures
- Customized software development for complete Analysis, Design & Drawing (GA & Reinforcement) for Turbo Generator foundations

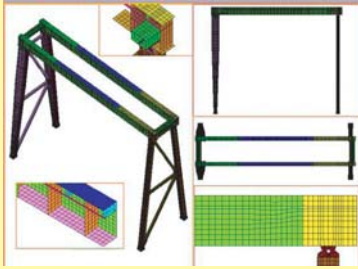


- Customized software development for complete Analysis, Design & Drawing of Irrigation structures like Dams, Under Tunnels, Radial & Vertical Gates etc.

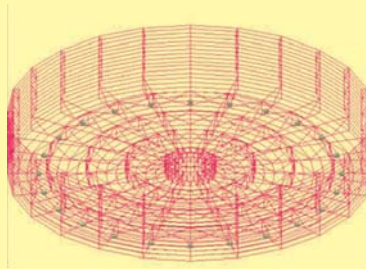
Partial List of consultancy work completed by us..

- Under Pass Grade separator - Civil World
- Large Span Steel Space frame roofs - ITPO
- Large Industrial Structures - Steam Generator Buildings
- Analysis of Large Capacity Crane structures and material handling equipment - WMI cranes, SMS DeMag
- Villas, Apartments & Commercial Buildings – Klassic, Galaxy, Shruthi...
- Water Treatment Plants, Swimming Pools - KUWSD&B
- Large capacity water tanks - KUWSD&B & Professional Board
- Institutional structures - SIBBC, Dental College, MSRIT, Monastery, Cancer detection and education center, Naturopathy hospital
- Dry fabric seal type Gas - Holders-SMS Demag
- Feasibility study on Sky bus system - CES
- Study of wind effects between two high-rise buildings - South America
- Seismic Re-Evaluation of Nuclear Power Plants, Equipments and Supporting Structures - NPCIL (MAPS, TAPPS, RAPPS) & FBTR

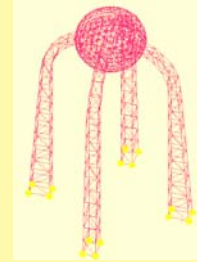




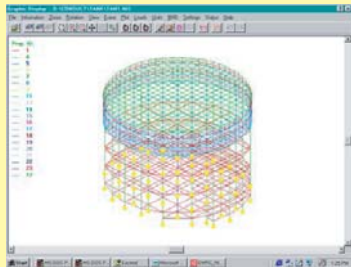
Analysis and Design qualification of 40 T crane structure – WMI



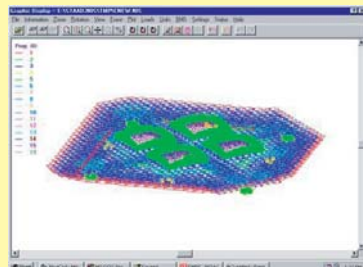
Stress Analysis and Design of dry fabric seal type Gas Holder (Capacity 30000 m3) – SMS DEMAG



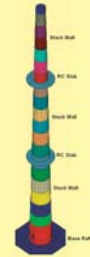
Analysis and design of steel monument structure



Analysis and design qualification of 40 Lac Litres Overhead Tank resting on sloping ground – RR water supply project



Analysis of Space frame - ITPO



Seismic reevaluation of Mast

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