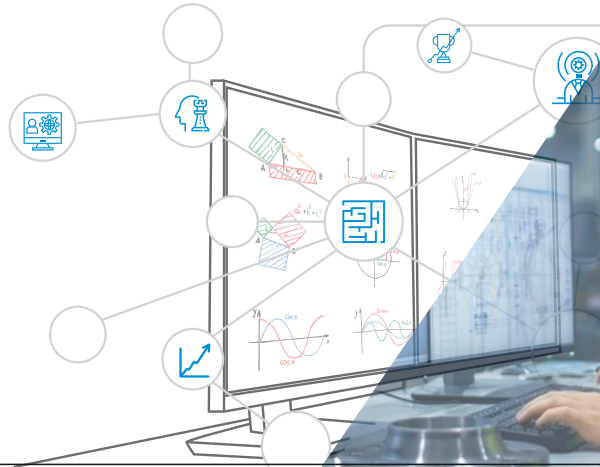


JUST GO!
GREEN

Structure Analysis Consulting Services Case Study 2020



Detail Design calculation , FEA Stress Analysis and Detail fabrication Drawing for Gland Steam Condenser Skid package

THE CLIENT

A UK-based client offering an array of customized solutions to chemical ,pharmaceutical, petrochemical, oil refinery, power generation and waste treatment.

THE BUSINESS NEED

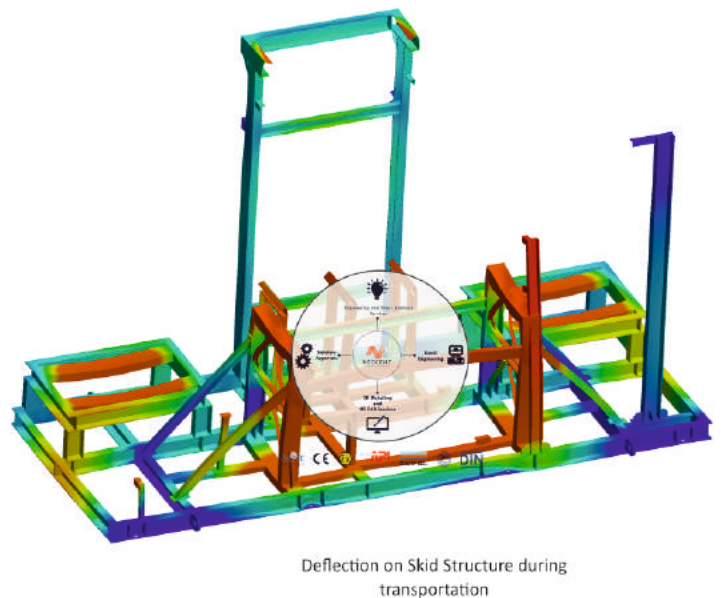
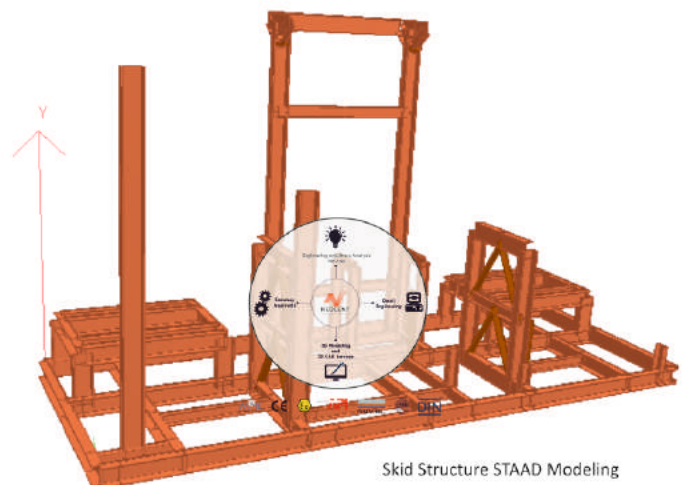
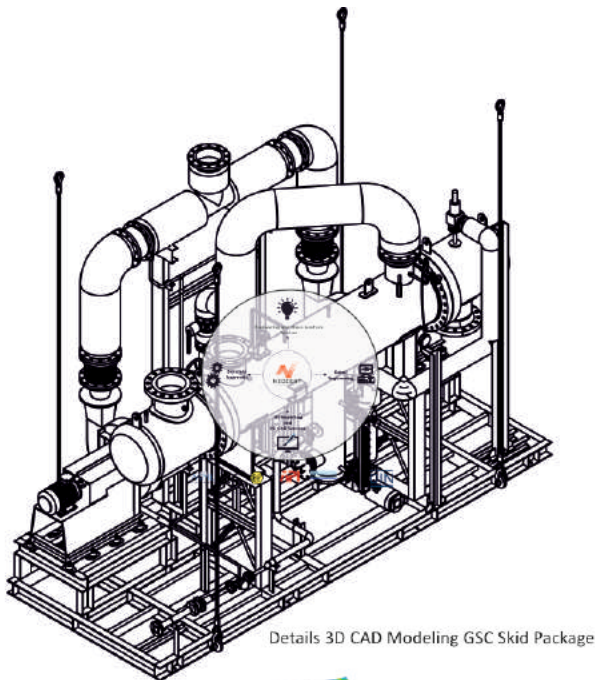
Our client was seeking engineering design assistance for a equipments (ASME U-stamp)design along with interconnecting piping routing. Client wanted Stress simulation on Skid Structure with IBC-2015 with ASCE 7-10.(LRFD load Combination)

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical and thermal detail design on Condenser and vessel, Pipe stress analysis for pipe Support, Pipe Support Design, Foundation load calculation etc.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D plant Modeling, Pipe Isometric drawing , Piping Support fabrication Drawing, Lifting and Erection Drawing.

Analysis : Piping Stress Analysis , Vessel Stress analysis (Code: ASME Sec VIII Div 2) ,Skid Structure Stress Analysis with IBC-2015, ASCE 7-10.



Detail Design calculation , FEA Stress Analysis and Detail fabrication Drawing for 30 TPH Hopper Structure for AFR

THE CLIENT

A India-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

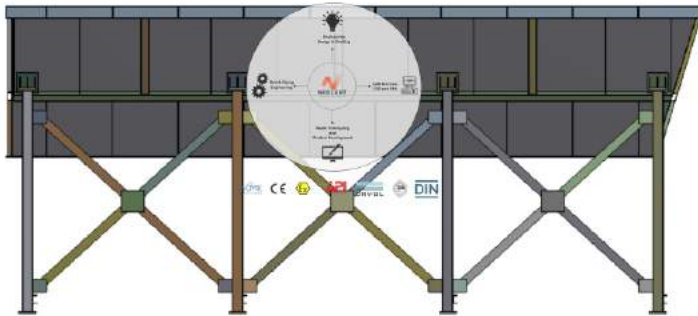
Our client was seeking engineering design assistance for a 30 tph Hopper structure design. Client wanted Stress simulation on Hopper Structure with IS:875 wind applicable code and Seismic for manufacturing approval process.

NEOCENT SOLUTION & DELIVERABLE

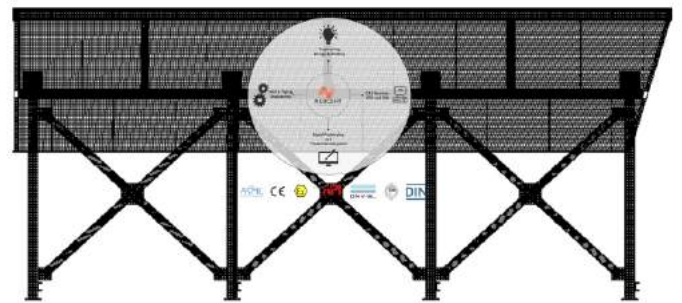
Detail Engineering : Mechanical detail design for hopper Structure, Foundation load calculation, Lifting and transportation load calculation , Lifting Lug details calculation etc.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling Hopper Structure, Transportation Support Drawing, Lifting and Erection Drawing.

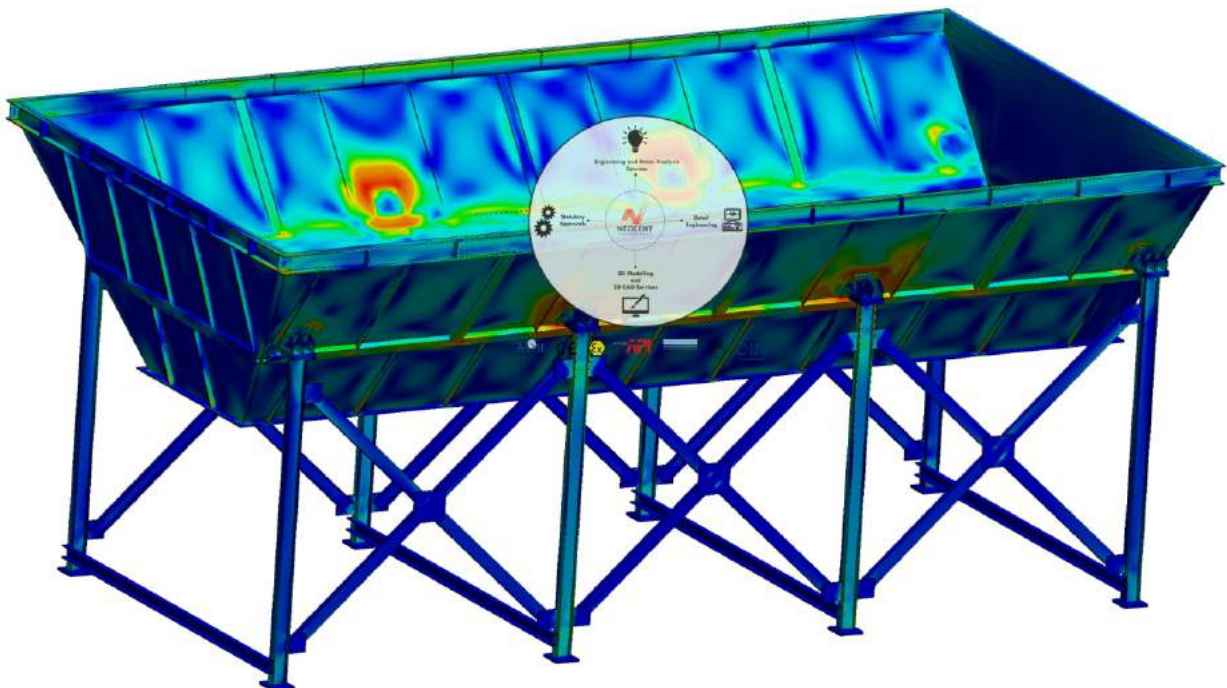
Analysis : Structure Stress Analysis



Details 3D CAD Modeling Hopper Structure



Meshing (Hexa) for Hopper Structure



Stress Distribution on Hopper Structure

Detail Design calculation , FEA Stress Analysis and Detail fabrication Drawing for 30 TPH Apron Feeder for AFR material handling

THE CLIENT

A India-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

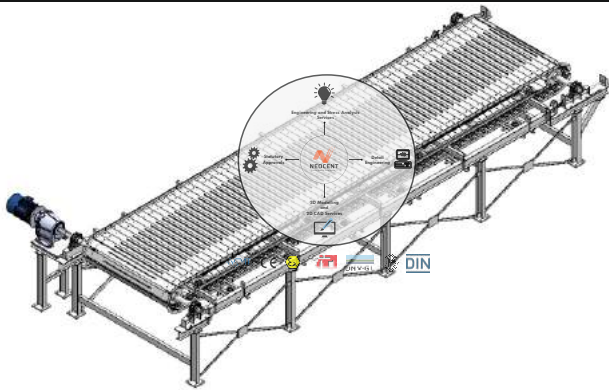
Our client was seeking engineering design assistance for a 30 tph Apron feeder structure design. Client wanted Stress simulation on Apron feeder Structure with IS:875 wind applicable code and Seismic for manufacturing approval process.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design for Apron feeder Structure, Foundation load calculation, Lifting and transportation load calculation , Lifting Lug details calculation etc...

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling Hopper Structure, Transportation Support Drawing, Lifting and Erection Drawing.

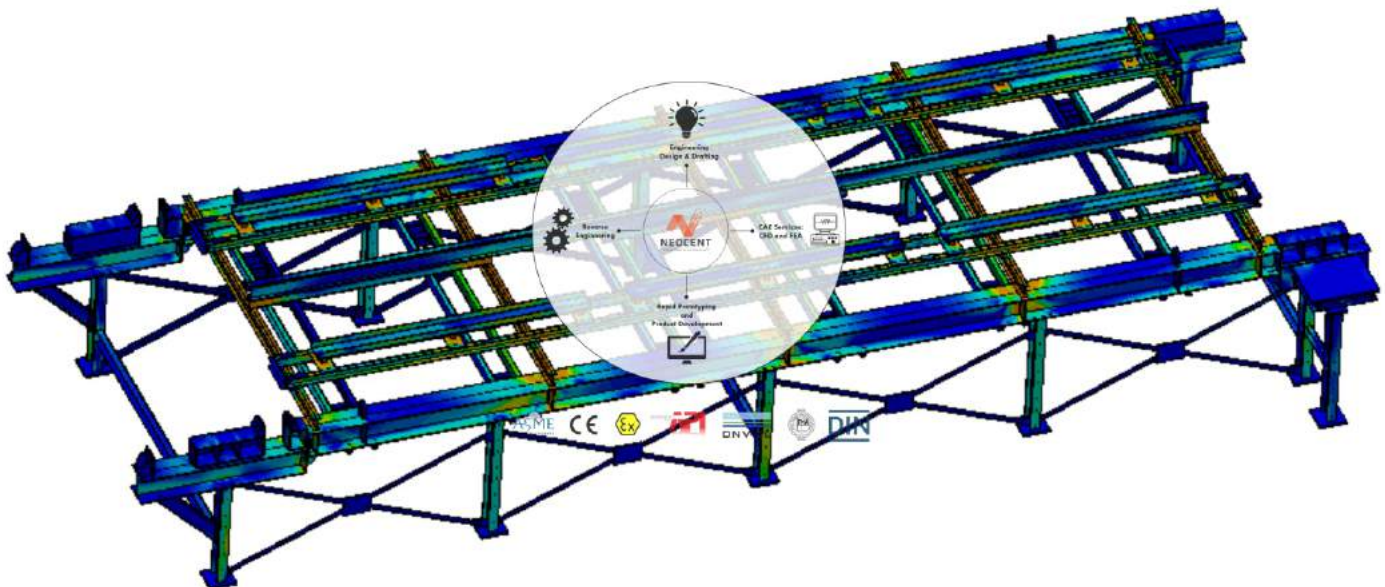
Analysis : Structure Stress Analysis



Details 3D CAD Modeling Apron Feeder Structure



Meshing (Hexa) for Apron Feeder Structure



Stress Distribution on Apron feeder Structure

Dynamic stress analysis on Railway Bogie with EN 13749 Standard and Fatigue Strength evaluation for Weld location

THE CLIENT

A India-based client offering an approved fabricated bogie frame and bolster manufacturer for electric locomotive, diesel locomotives, coaches, freight Wagons, Electrical Multiple units(EMU) and special purpose bogies as per customer requirements.

THE BUSINESS NEED

Our client was seeking engineering design assistance for a customized bogie based on the railway standard EN 13749. Bogie need to be tested dynamically along with fatigue strength evaluation at weld location.

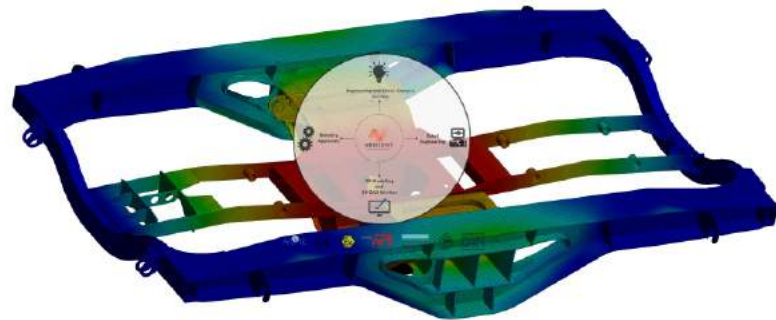
NEOCENT SOLUTION & DELIVERABLE

Analysis :

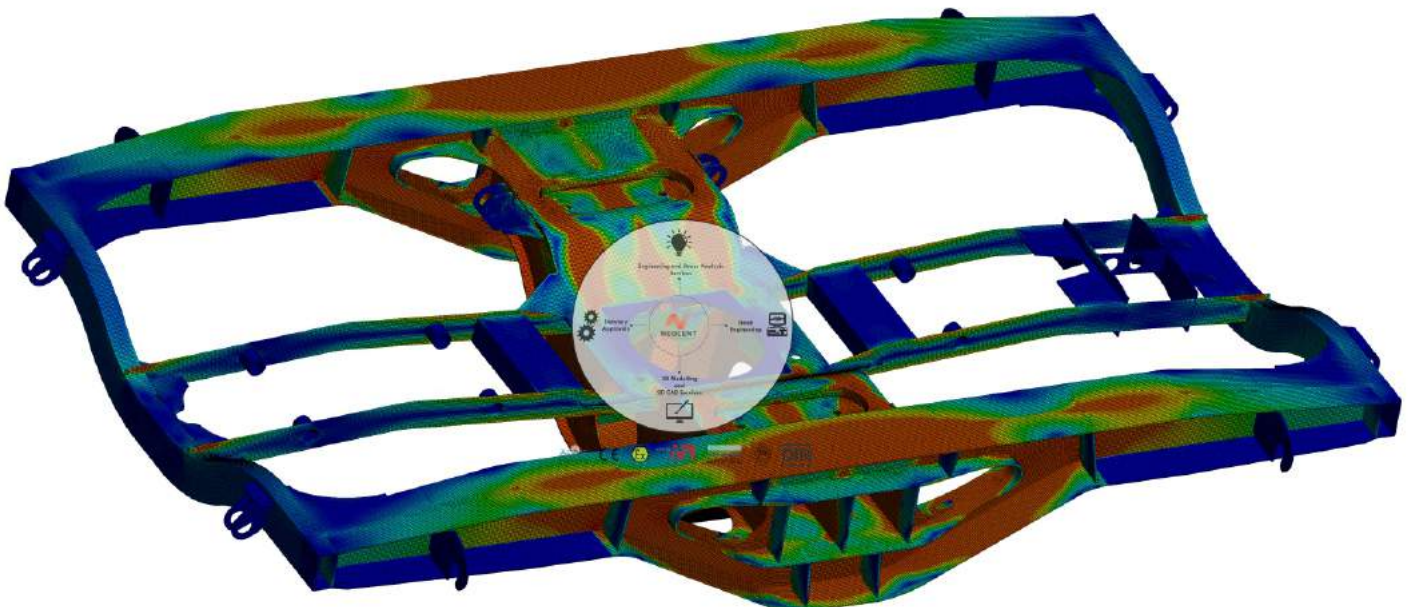
The analysis was based on the railway standard EN 13749 that describes the relevant load cases that represent different operating conditions of the structure. The loads can be separated into two main groups: exceptional- and operational loads. With the exceptional loads, the aim is to verify that the bogie does not suffer fatal damage as a result of an extreme load. While in the case of the operational loads, the strength of the bogie must be examined not only for static failure but also for fatigue due to the cyclic nature of the load. Since the tested bogie is a welded steel structure, the fatigue of the welds was investigated as a typical failure mode in terms of durability.



Details 3D CAD Modeling and meshing for Bogie structure (Shell meshing)



Deflection on railway bogie with static load case



Stress Distribution on Railway Bogie structure under Dynamic load

Detail Design calculation , FEA Stress Analysis and Detail fabrication Drawing for 100 TPH for AFR material feeding plant

THE CLIENT

A India-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

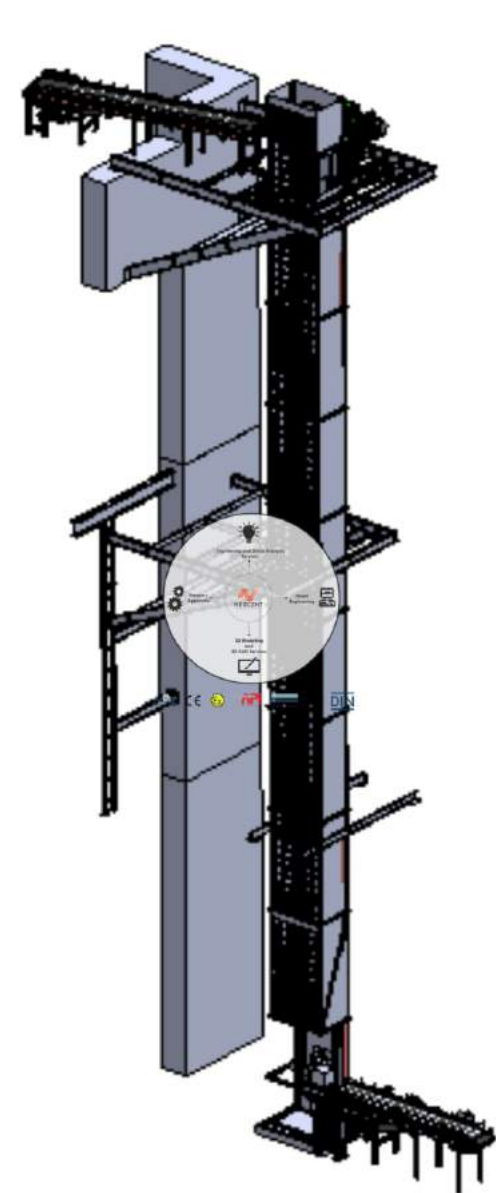
Our client was seeking engineering design assistance for a 100 tph starterkit_AFR Feeding system design. Client wanted Stress simulation on Structure with IS:875 wind applicable code and Seismic for manufacturing approval process.

**NEOCENT SOLUTION
&
DELIVERABLE**

Detail Engineering : Mechanical detail design for Elevator 26.5 meter height, Belt conveyor, Roller Conveyor, Double flap damp valve, Feeding chute Structure, Foundation load calculation, Lifting and transportation load calculation , Lifting Lug details calculation etc...

CAD Detailing : G.A. Drawing , P&ID, Details fabrication drawing ,3D Modeling equipments structure, Transportation Support Drawing, Lifting and Erection Drawing.

Analysis : Structure Stress Analysis and Rigid dynamic analysis for Counter weight Design.



3D detail Modeling AFR Feeding System



Erection at plant location



Design for Manufacturing and FEA Stress analysis on Container Mobile Home : 18ft Standard container ISO 1161 CSC Certified

THE CLIENT

A Netherlands based client have redefined independent traveling by introducing “truck - independent” models, incorporating the unrivaled feature and benefit of the container concept.

THE BUSINESS NEED

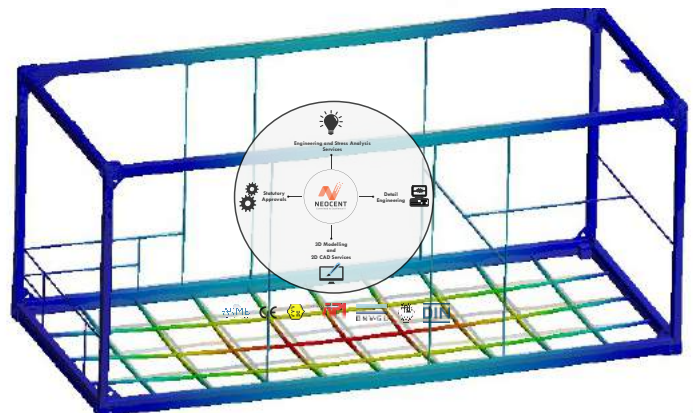
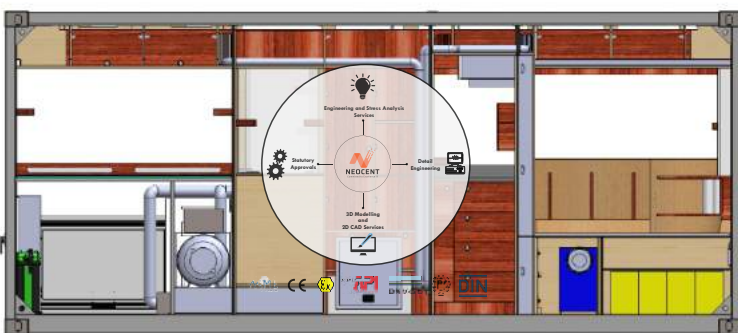
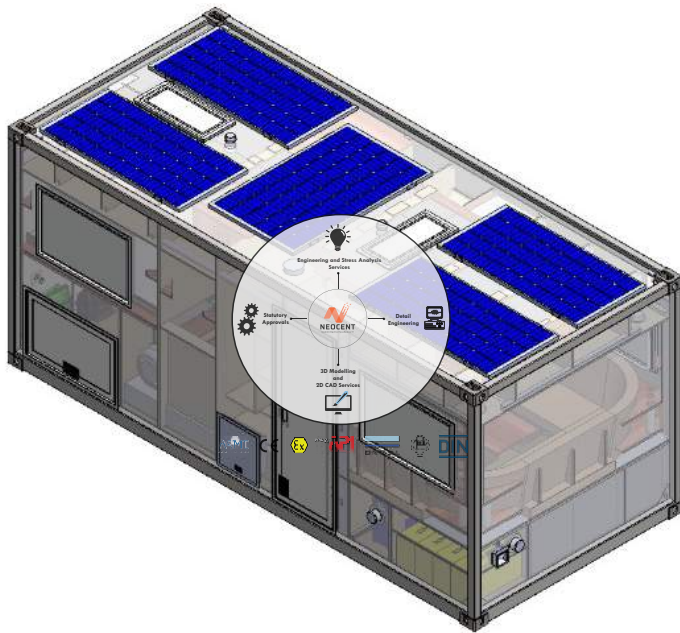
Our client was seeking engineering design assistance for a 18ft Long Standard container with ISO 1161 CSC Certification design. Client wanted Stress simulation on Container structure for CSC certification and ABS Approval.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design for container with ISO 1161 standard, Load calculation and Size optimization.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling with all internal components (HVAC, Piping, Architecture, Refrigeration - Air conditioning unit, Water purification system, Solar system etc).

Analysis : The following force simulations shall be conducted on the Container. The design of the Container must be able to satisfy the stated conditions: Stacking, Top Corner Fittings Lifting, Bottom Corner Fittings Lifting, Longitudinal Restraint, Strength of End Walls, Strength of Side Walls, Strength of the Roof, Strength of the Floor, Transverse Rigidity, Longitudinal Rigidity.



DFM For Ropeway Crossing Bridge (80 meter length) of NH 206_NATIONAL HIGHWAY AUTHORITY OF INDIA APPROVED

THE CLIENT

A India-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

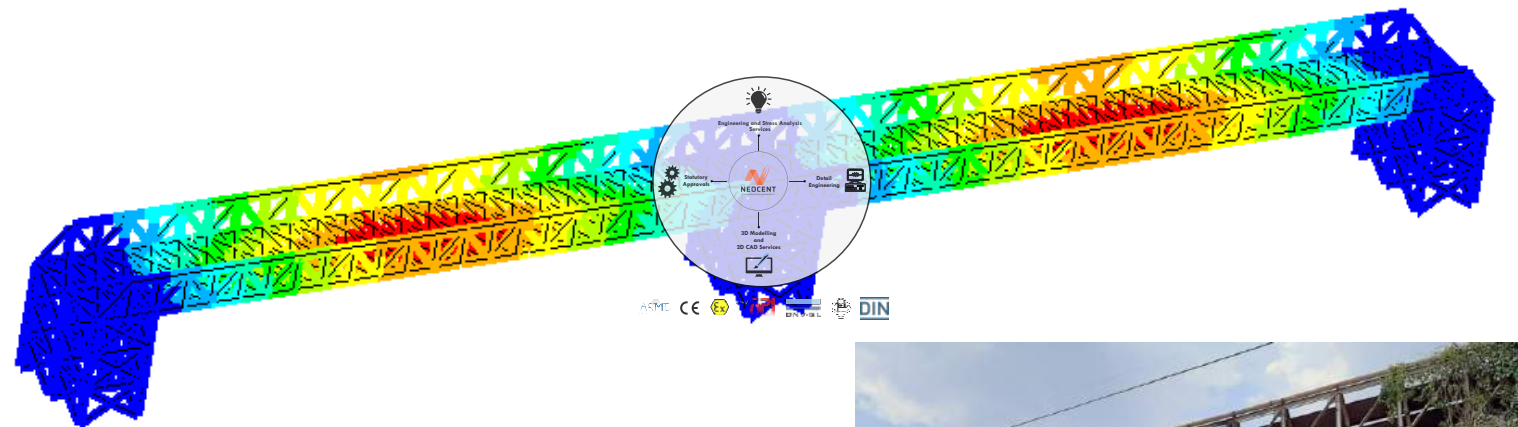
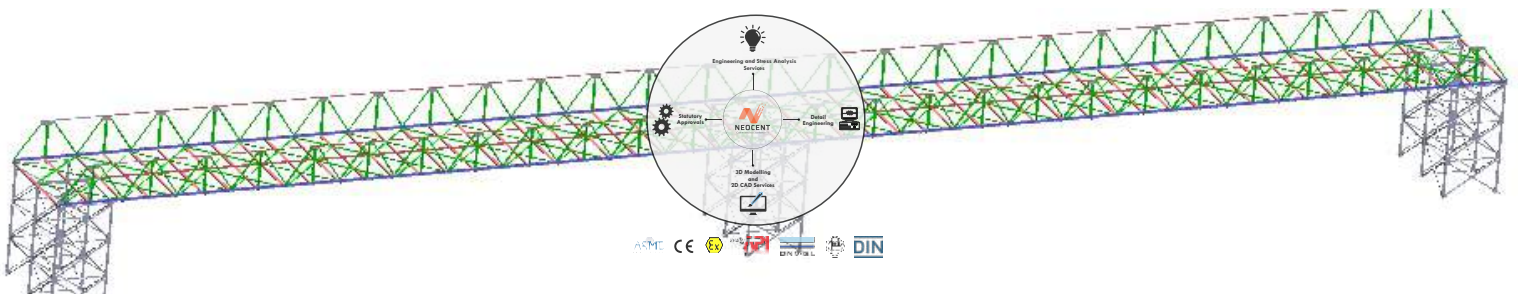
Our client was seeking engineering design assistance for 80 Meter Bridge structure design. Client wanted details calculation and Staad analysis report for approval process.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design structure calculation with different load cases , Foundation load and foundation drawing.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling Modeling, Erection drawing.

Analysis : FEA Stress analysis on Bridge structure with different load case as per NHA standards, Foundation analysis.



Design for Manufacturing and Validation on Crane lashing structure under DNV Approval

THE CLIENT

A UK-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

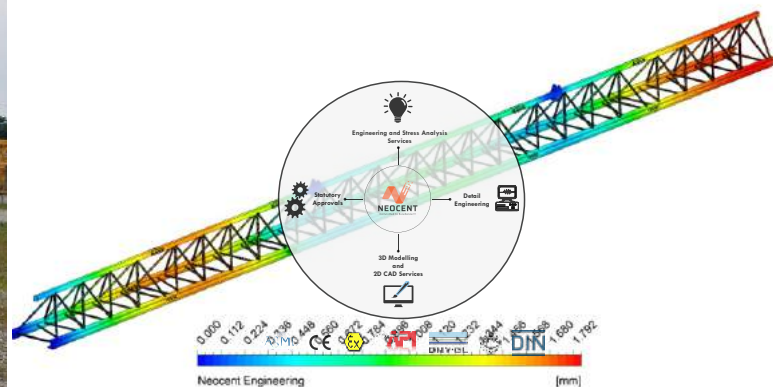
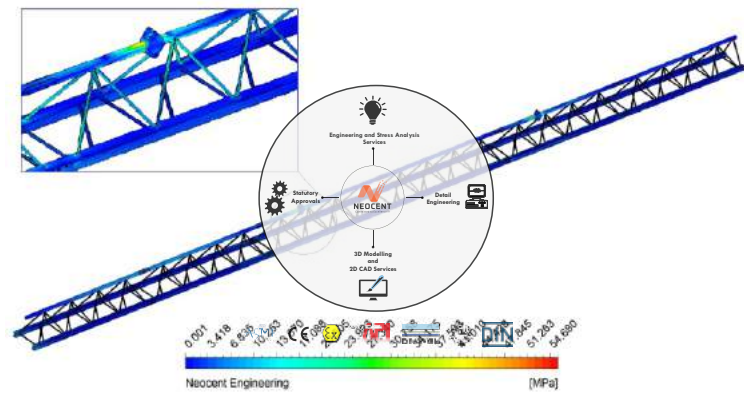
Our client was seeking engineering design assistance Crane structure design. Client wanted details calculation and Staad-FEA analysis report for DNV approval process.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design structure calculation.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling, Erection drawing.

Analysis : FEA Stress analysis on different load case as per DNV standards.



Manufacturing at client Workshop

Stress Analysis for validation

Design for Manufacturing for Screw Conveyor along with ladder structure

THE CLIENT

A India-based client offering an array of customized solutions to cement industries with customized material handling equipments.

THE BUSINESS NEED

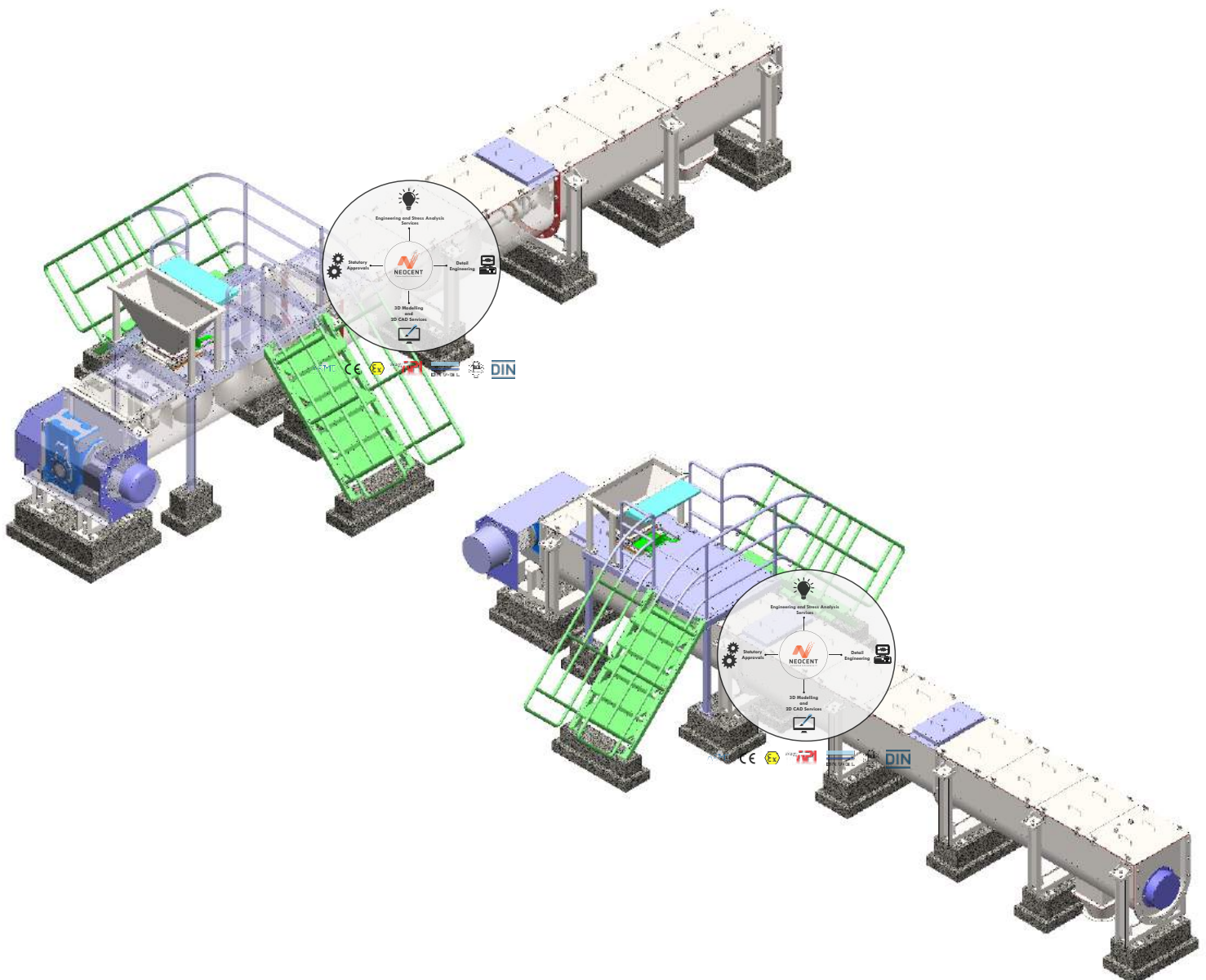
Our client was seeking engineering design assistance Screw Conveyor design. Client wanted details calculation and Stress analysis report for structure.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design calculation , Foundation load calculation, Dynamic load study.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling, Erection drawing.

Analysis : FEA Stress analysis on Screw Conveyor Structure, DEM simulation to study particle tracing.



DFM For PHX-45 Catwalk Tabular Handling _DNV And API Standard Design standard

THE CLIENT

A UK-based client offering an array of customized solutions to offshore industries with customized pipe handling equipments.

THE BUSINESS NEED

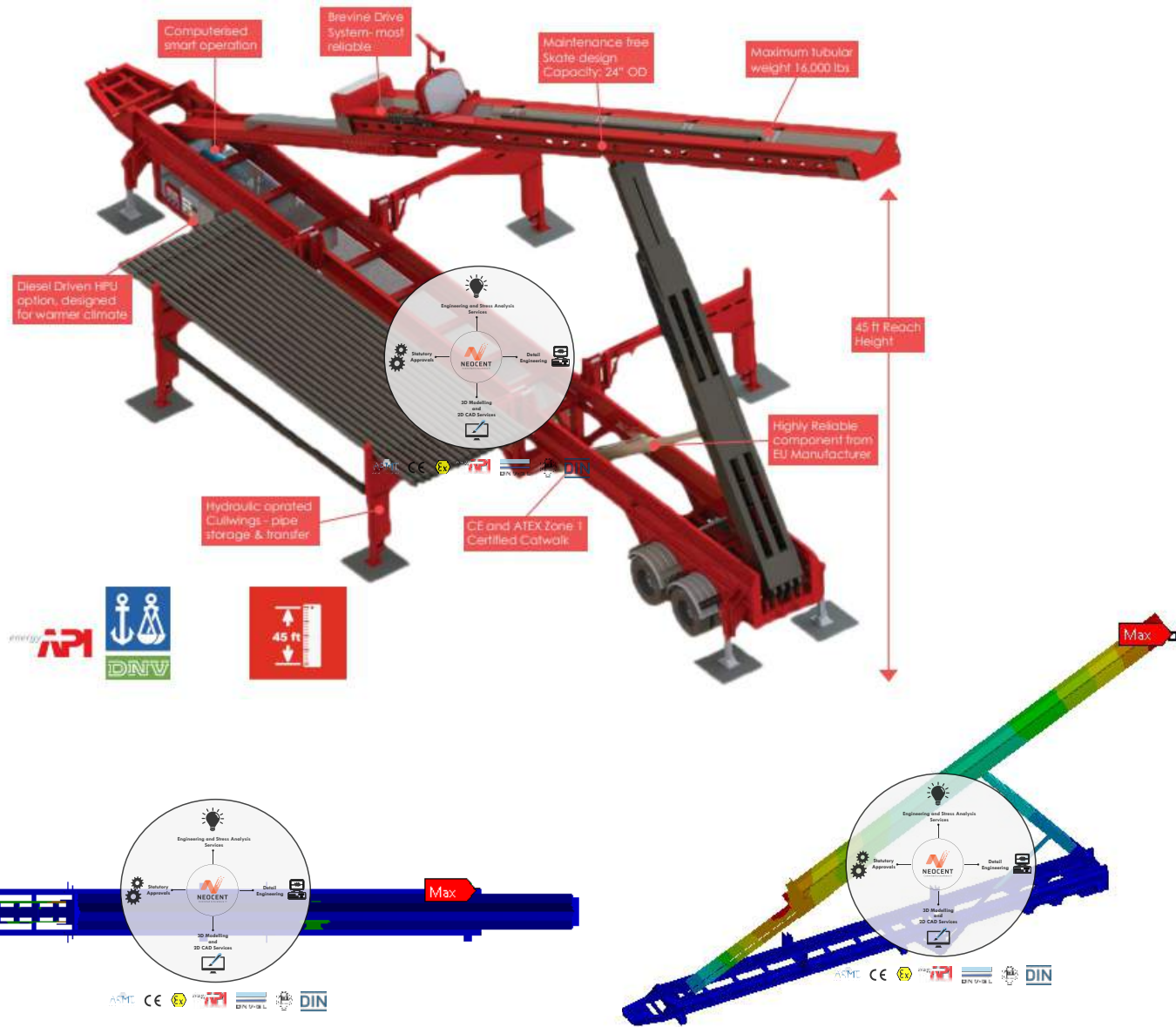
Our client was seeking engineering design assistance 45 ft tabular catwalk design as per DNV standard procedure.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design calculation , Hydraulic Capacity calculation.

CAD Detailing : G.A. Drawing , Details fabrication drawing ,3D Modeling, Erection drawing.

Analysis : FEA Durability test for Main arm, Skate and Trailer structure, Dynamic Stress simulation during opening to closing of structure, Multi Body Dynamics for Force and Moment calculation.



Design for Manufacturing and FEA Optimization of Form panel under different Loading Conditions - DIN EN 12812:2008-12E.

THE CLIENT

A India-based client offering an array of customized solutions to construction and infrastructure projects with Form panel and Scaffolding solution.

THE BUSINESS NEED

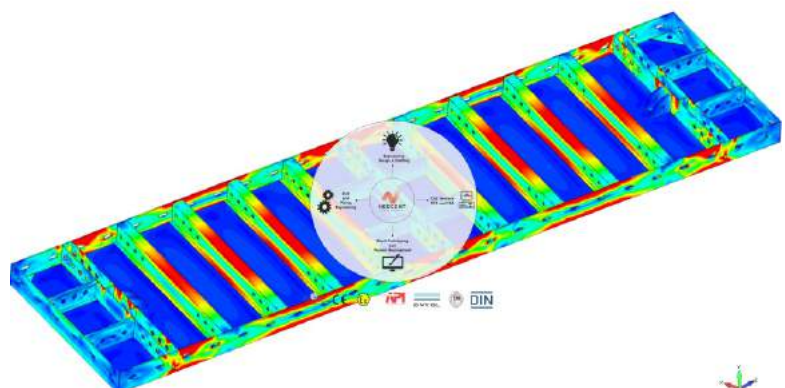
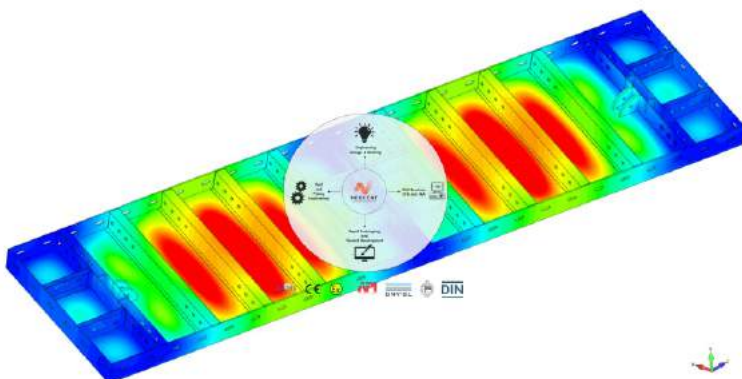
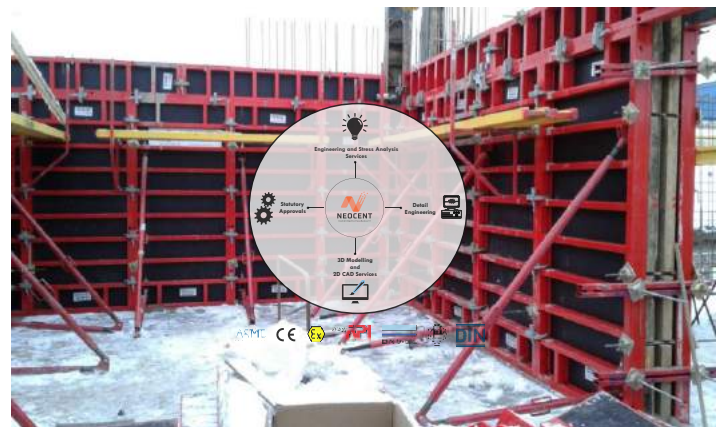
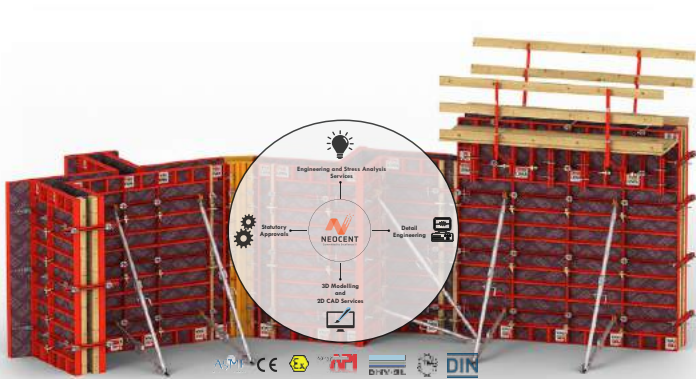
Our client was seeking engineering design form panel for construction and Infrastructure project as per DIN EN 12812:2008-12E standard.

NEOCENT SOLUTION & DELIVERABLE

Detail Engineering : Mechanical detail design calculation, Wedge Clamp - Tie Rod design calculation.

CAD Detailing : G.A. Drawing, Details fabrication drawing ,3D Modeling, Erection drawing.

Analysis : FEA Durability test for structure based on DIN EN standard.



Neocent Engineering Services is a multi-discipline engineering services company. Established in 2015, we offer high-quality engineering support solutions to global EPC organizations across some of the industries listed: Automotive, Aerospace, Turbo machinery, Heavy engineering, HVAC, Oil & Gas, Material handling and Process industry.

Neocent provides detailed engineering services to EPC, EPCM, OEM, and PMC as long-term turnkey projects. Our EPCM services include Project Management, Feasibility Studies, Conceptual & Basic Engineering, Detailed Design, Procurement, Construction Management, Commissioning & Start-up, and Operations & Maintenance.

Neocent Engineering's service offering, include;

- Engineering and Stress Analysis Services
- Details Engineering
- 3D Modelling and 2D CAD Services
- Statutory Approvals

Neocent Engineering expert engineers are proficient in analyzing the impact of external forces on static structures, such as construction components, machine components, and more. Our highly skilled engineers offer structural analysis to ensure that these modules meet fatigue safety requirements.

Our Structure and stress analysis specialists help simulate the movements of non-stationary objects in vibration analyses, lifting analysis, and other services. With our technology and experience in structure stress analysis, we quantify and further rectify failure in the structure of components that do not meet the proposed design plan, which could result from improper use of materials or even flaws in the manufacturing process.

Industry codes and standards adhered to by our Designers :

ANSI, AISC, UBC, ASCE, ACI, BS, IS.

Neocent FEA Consulting Services

The technical expertise of our FEA consultants in delivering Finite Element based product design optimization enables you to address complex engineering design problems and help validate product designs prior to production.

At Neocent, we aim to achieve our vision by emphasizing ensuring that our offerings meet the following criteria, agility, on-time delivery, superior quality, cost-effectiveness and great efficiency continues learning culture amongst the team and guarantees continuous innovation in the business.



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