STRUCTUREX
ENGINEERING CONSULTING TRAINING

Program Brochure : 2024

STEEL STRUCTURE & BIM TECHNOLOGY

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INTRODUCTION

we are designer engineer architecture planner technical specialists and trainer. we operate in the innovation and revolutionary changing field of designer and engineering construction installation and infrastructure educational services rank top in relate with civil/structure/infrastructure

We have a global community of engineers, technician and expert to deliver quality of training and services

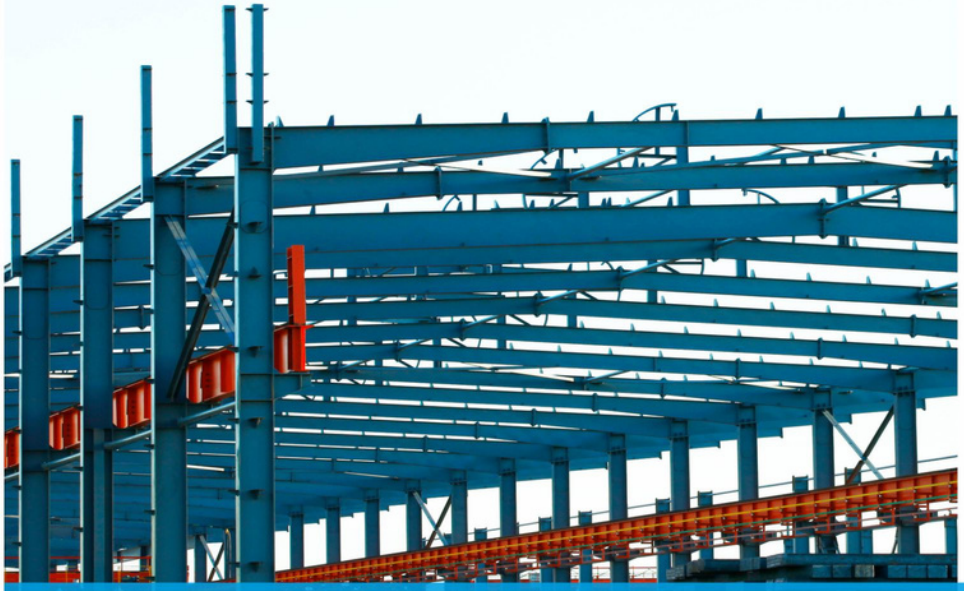
community of 10000+ and still counting Our trainee are from South east Asia Europe, Australia and UAE.

Our corporate training program and engineering educational services ranked top in INDIA and all over the world by most recognized organizations. We provide courses relate with civil/structural/ infrastructure engineering.

ABOUT PROGRAM

PG Diploma in Steel Structure & BIM Technology

is a full flange training program which enable you to carrier in different technical positions due to technical advancement in design and engineering worldwide professional qualification are not satisfying current MNC company job demand so structurex department of corporate training design this course for professional, fresh Graduate and Technical Specialist. Real challenge for Engineers and technical



specialist are increasing day by day due to project complexity and environment factor by adapting data driven technology this course enable you to accept that challenges

STRUCTURE ANALYSIS & DESIGN

RCC STRUCTURE Analysis & Design is a complex process of implementing engineering solving complex problem and challenge. n this program we follow steps by steps analysis and design process with theory codes concept and software. We also focus on sustainable technology and digital twins, on current industry Demand . Performing Deep Research with various national& International Code of Practice , Research and Journals.

Building Information Modeling (BIM) is the holistic process of creating and managing information for a built asset.Based on an intelligent model and enabled by a cloud platform, BIM integrates structured, multi-disciplinary data to produce a digital representation of an asset across its lifecycle, from planning and design to construction and operations.

PROGRAM INSITE

E-Classroom

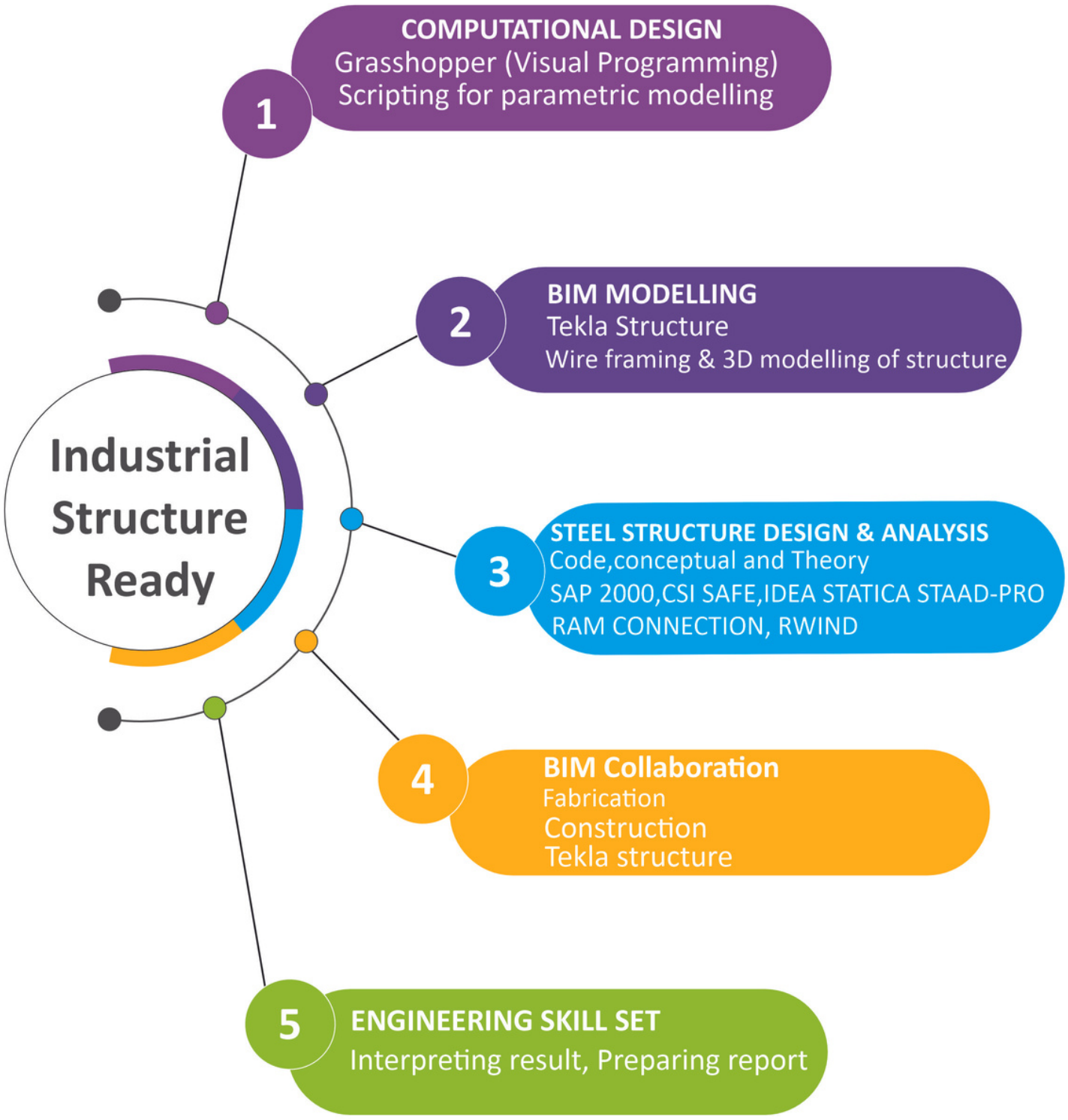
Online live training program mode enable you to participate from worldwide in your comfort zone. For working professional or fresher who lived in different part of world state and country. With lots of additional benefits candidate able to participate as REMOTE workplace (Cloud Technology). Our technical team ensure for all kind of technical support related to Software or Technical.

Program Module	Learning Module	Nature	Fee Structure	Payment Option	Duration
1	Steel Structure analysis & Design	Compulsory	INR 60,000/-(Inciuding 18%GST)	One Time Payment	8 Month
2	BIM Modelling and Management				
3	Computation Design /Parametric Modelling	Optional	INR 20,000/-(Including 18%GST)	If Taken all Module then fee can be paid in 2 installment	Included in 8 Month

Day	Timing	Platfrom
M W TH/TU TH SAT	Timing slot 7:30 pm To 9:30pm	Zoom meeting

Sr.No:	Additional features	Remark**
01	Backup video lecture	All the session video lecture after live session will be shared in downloadable from
02	Doubt session	Dedicated doubt session (Everyday)
03	Study material and supportive document	All the required material and supportive document will be provide
04	Technical support	Technical support for software and pc.
05	Dedicated whatsapp group	Whatsapp support available
06	Technical update for Lifetime	Lifetime technical update will be available

PROGRAM WORKFLOW



SOFTWARE AND TECHNICAL SUPPORT

Programme Module:01

- Software installation
- Technical support
- Introduction

- Software
- Codes and Standard
- Books
- Technical Notes & Presentation
- Technical Sheets and Data

WEEK : 01 TECHNICAL SETUP	
TRIMBLE	TEKLA STRUCTURE
CSI	SPA 2000
DLUBAL	RWIND
CSI	SAFE
BENTELY	STAAD PRO
IDEA	STATICA
or	
BENTELY	RAM CONNECTION

ADDITIONAL MODULE	
Rhino3D	GRASSHOPPER

BIM : TEKLA STRUCTURE

Model to build and maintain

Tekla Structures is a full structural workflow solution from geometry to rebar design or connection detailing, followed by steel fabrication or precast manufacturing, all the way to erection and planning of scaffolding, concrete formworks, and pours on-site. And, when the revisions are updated during construction, the owner has an as-built model to be registered and used for asset management.

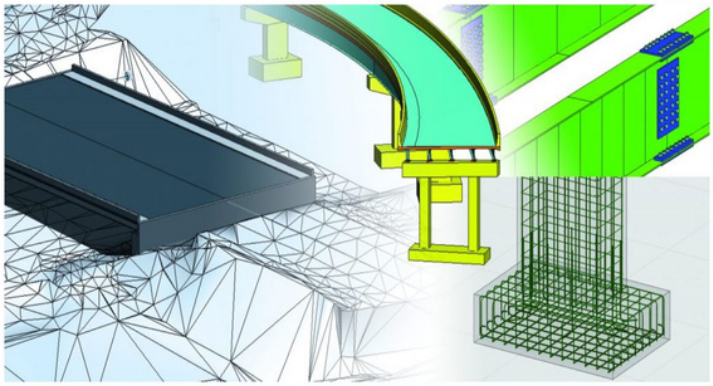
With Tekla Structures you can:

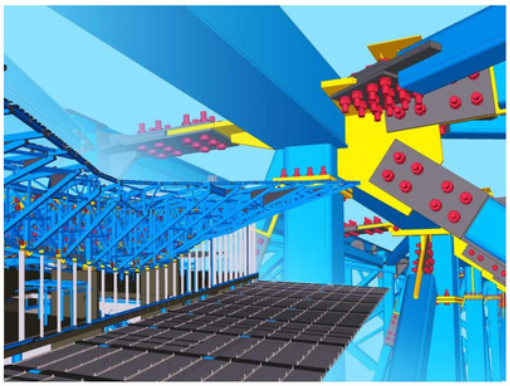
1. Model to build
2. Import road alignment automatically
3. Define key sections easily
4. Detail Rebar efficiently, any size or complexity
5. Update the model at any time
6. Add content from our library
7. Accurate quantities and documentation
8. Communicate with the model
9. Prevent errors and waste on-site
10. Use the model for asset management

Smart Facility Management

Move your bridge life-cycle management to model-based workflow, including approval processes and construction projects. Achieve better project delivery without delays and over budget. After construction use and update the digital as-built bridge model in maintenance and inspections.

1. Move from paper-based approval process to model-based process
2. Build digital bridge registries with information models (IFC format)
3. Use the steel model information for collaboration on Trimble Connect
4. Keep a record of revisions and project progress with Trimble Connect
5. Examine the as-built model data with health monitoring data, e.g. sensor data
6. Use the digital as-built model information in inspections
7. Link the as-built model with inspection notes, photographs, pile driving records, etc.
8. Develop digital asset management processes utilizing the model data





BIM MODELLING AND DETAILING

BIM MODELLING AND DETAILING OF STRUCTURE IN TEKLA

Programme module:01

Scope of learning Autodesk Tekla structure

1. Generate BIM and BrIM 3D Model
2. Generate Structural Model
3. Generate Drawing sheets
4. Detailing of structure
5. Different type of reports and estimation

Modelling and detailing of

1. Multistory steel structure
2. Prœngineered building steel structure
3. Design of industrial steel structure
4. Steel truss factory design

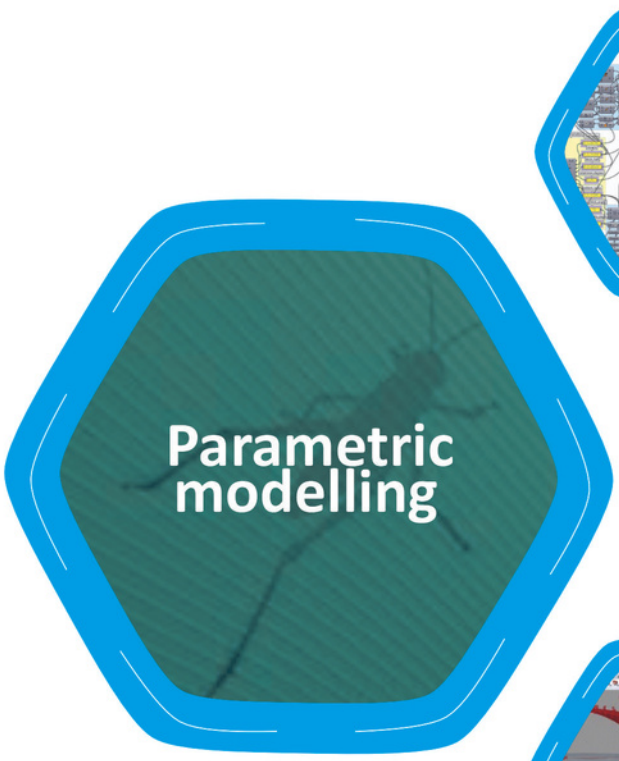
Sr.no		Topic	Remark
01	01 Software algorithm Basics tools and command	• Properties, Views, levels, grids, component • Steel menu • Framing • Advance • Connection modelling • RCC Menu • RCC • Rebar • Drawings sheets • Report	Regular class
02	Workshop	• Multistory steel structure	Project
03	Workshop	• Pre -engineered building steel structure	Project
04	Workshop	• industrial steel structure	Project
05	Workshop	• Steel truss factory design	Project

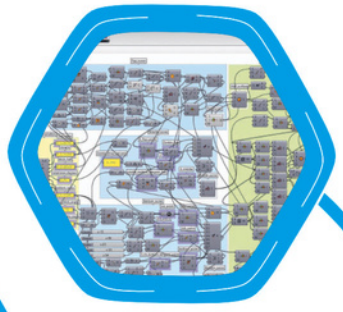
PARAMETRIC MODELLING OF STEEL STRUCTURE IN GRASSHOPPER

Programme module:02

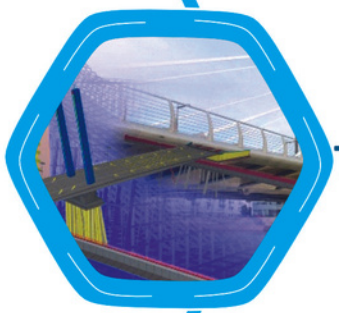
Parametric design is a process based on algorithmic thinking that enable the expresssion of parameters and rules that, together, define encode and clarify the relationship between design intent and design response. Grasshopper is a visual programminglanguage and environment that runs within the Rhinoceros 3D computer-aided design (CAD) application. the program are created by dragging components onto a canvas. the output to these components are then connected to the inputs of subsequent components, Grasshopper is primarily used to build generative algorithms, such as for generative art. many of grasshopper's components created 3D geometry. programs may also contain other type of algorithms including numeric, textual, audio-visual and haptic applications. Advanced uses of Grasshopper include parametric modeling for structural engineering, parametric modelling for architecture and fabrication, lighting performance analysis for eco-friendly architecture and building energy consumption.

COMPUTATIONAL/PARAMETRIC DESIGN

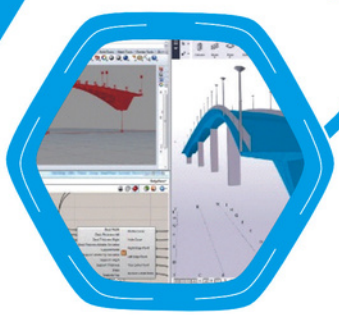




Grasshopper



Tekla Structure



3D Model in Tekla Structure

Theory conceptual and codes of Practice

Programme module:03

2 Indian and international codes

3 FEA/FEM(Finite element analysis/Method)

4 Applied physics

5 Applied Mathematics

6 Eigen value and Eigen vector

7 Shell and membrane concept

8 Diaphragm /C.O.M/C.O.G

9 Modal Analysis and structure behavior

10 Earthquake engineering for structure

11 Seismic Analysis

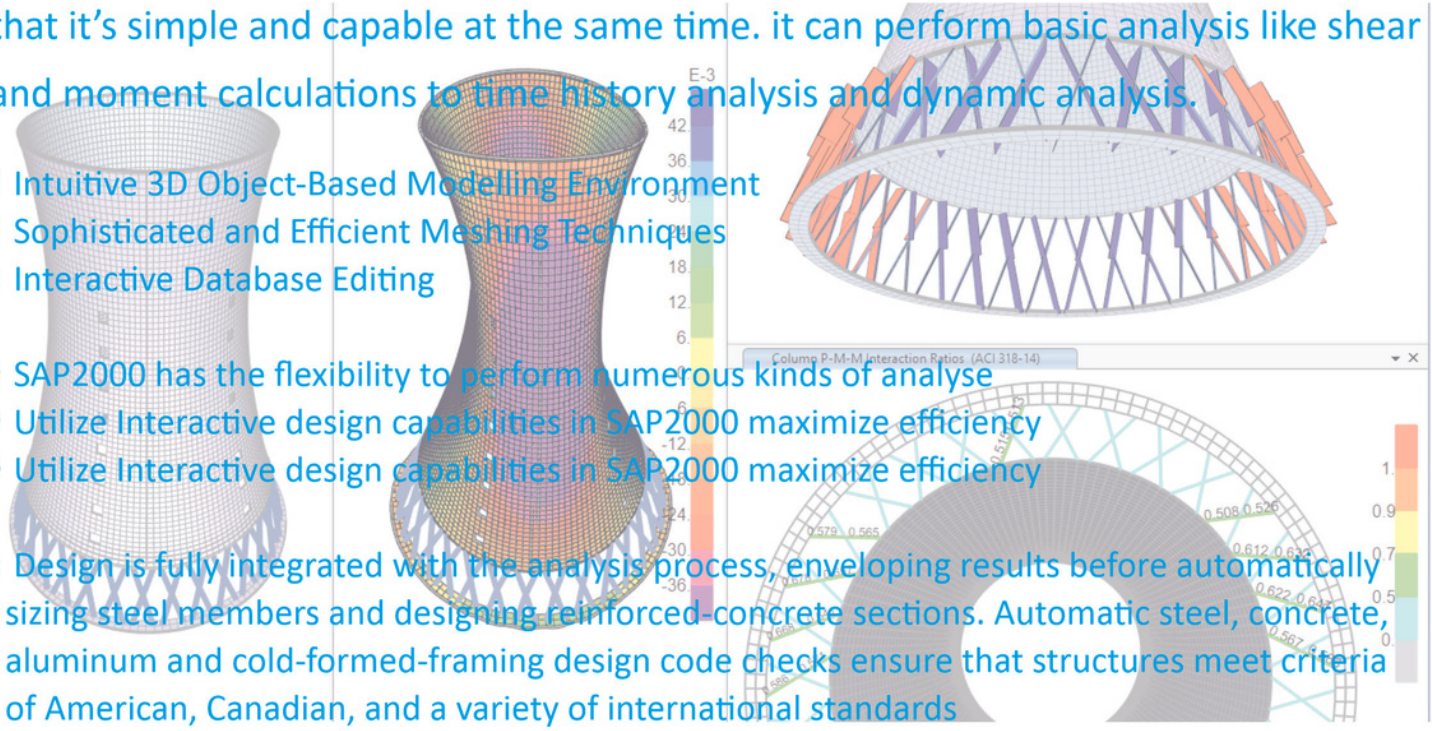
12 Wind Analysis

13 Advance structure concept

14 Foundation Design

Program module: 04

CSI SAP2000 (Structural Analysis Program) is an engineering software that is ideal for analysis and design of structural elements like beams, columns, slabs, trusses, cables, shells, etc. what make SAP2000 use by most engineers around the world is the fact that it's simple and capable at the same time. it can perform basic analysis like shear and moment calculations to time history analysis and dynamic analysis.



- Intuitive 3D Object-Based Modelling Environment
- Sophisticated and Efficient Meshing Techniques
- Interactive Database Editing

- SAP2000 has the flexibility to perform numerous kinds of analyse
- Utilize Interactive design capabilities in SAP2000 maximize efficiency
- Utilize Interactive design capabilities in SAP2000 maximize efficiency

- Design is fully integrated with the analysis process, enveloping results before automatically sizing steel members and designing reinforced-concrete sections. Automatic steel, concrete, aluminum and cold-formed-framing design code checks ensure that structures meet criteria of American, Canadian, and a variety of international standards

Utilize Interactive design capabilities in SAP2000 maximize efficiency

- Steel Frame Design
- Concrete Frame Design
- Aluminum Frame Design
- Cold-Formed Frame Design

STAAD is a popular structural analysis application known for analysis, diverse applications of use, interoperability, and time-saving capabilities. STAAD helps structural engineers perform 3D structural analysis and design for both steel and concrete structures. A physical model created in the structural design software can be transformed into an analytical model for structural analysis. Many design code standards are incorporated into STAAD to make sure that the structural design complies with local regulations.

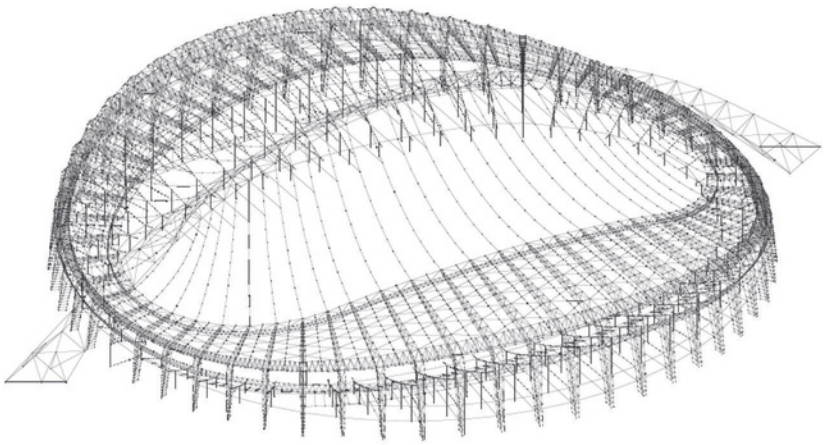
STAAD.Pro

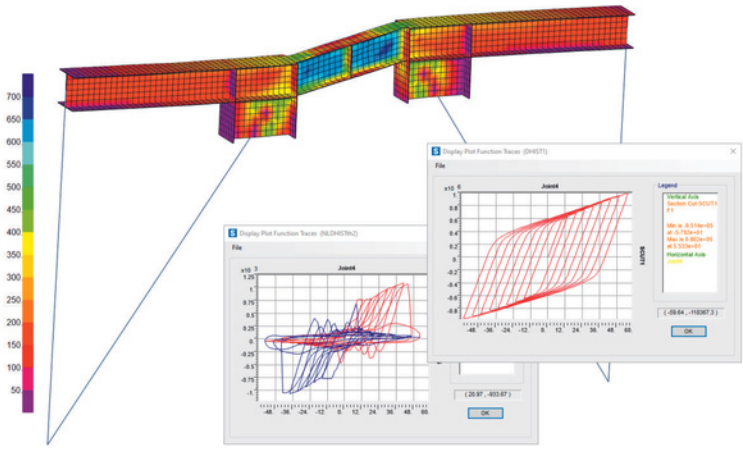
ANALYSIS AND DESIGN STEPS

Codes	Steps for project processing
IS - 456 - 2000 IS-800 IS - 875 (Part 1,2,3) IS-13920 -2016 IS-1893 2016 IS-13920 IS-16700 IRC International Standard BS 8110 ACI318 CEBFIP 2010 UBC 97 ASCE 7 -16	• Project Specifications Information • Project Specifications Information • Design Methodology • Codes used for design of Structures • Export DXF file in SAP2000/Staad-Pro • Enter grid spacing/story data in the model • Define Material, Sections properties • Model the steel columns, beams and bracings in the structure • Define load patterns • Calculation of dead, live and wind loads • Define load cases • Define load combinations • Define supporting conditions • Assign to release to the structure • Assign the Diaphragm to the structure • Define earthquake load pattern • Define the Model cases • Define the mass source • Define the Response spectrum function and define the load cases • Check the Instability in the structure • Remove the instability errors • Set the analysis options • Review the fundamental mode shapes • Check the mode shapes, mode participation • Check the static base shear • Check the SFD, BMD, displacement interpreting the analysis results • Interpreting the Design results • Interpreting the Design results • Check/verify all members passed • Optimize the structure • Check the tabular results including material take off • Export support reactions to SAFE for foundation design • For connection design used the RAM Connection

Analysis & Design Capability

- Different type of analysis
- Wind analysis
- Response spectrum
- Time history
- Push over analysis
- P-Delta analysis
- Torsional irregularity
- Building eccentricity
- Buckling analysis
- Creep & shrinkage analysis
- Control of deflection
- Auto construction analysis
- Displacement check
- Story drift
- Drift ratio
- Torsion irregularity
- Eccentricity
- Heavy story
- Soft story
- P-delta
- Mass participating ratios
- Scaling base shear
- Dynamic checks

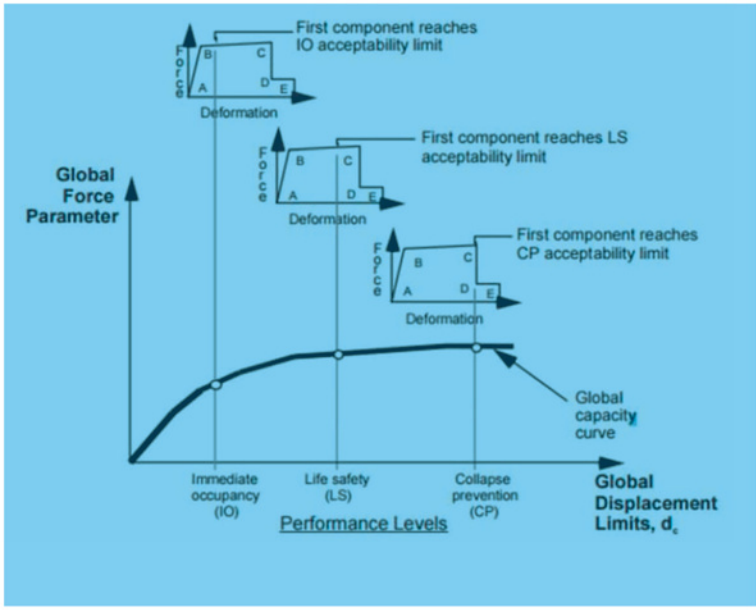




Performance Based Design (PBD)

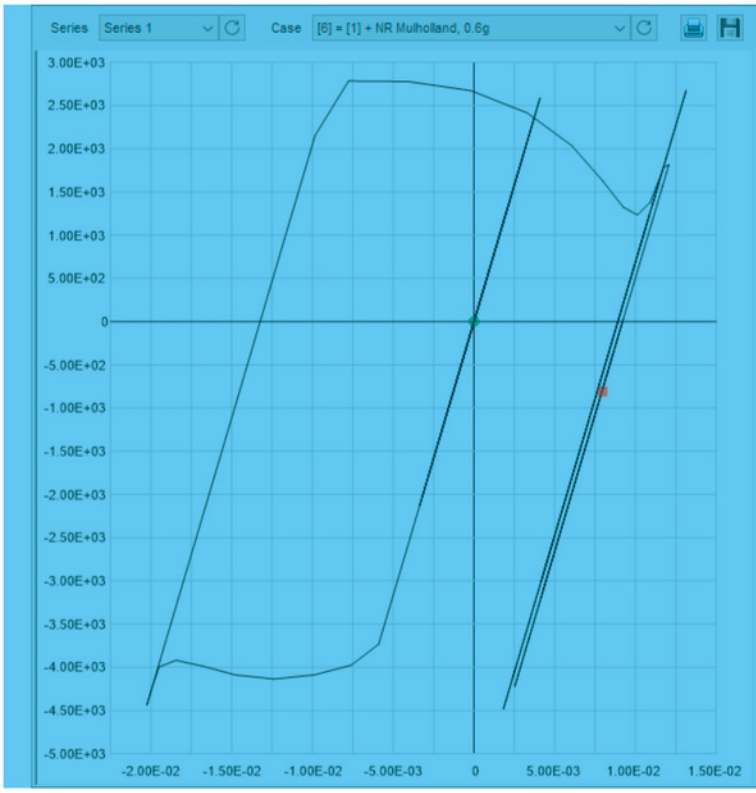
Non Linear Modelling

- Basic Approach for Nonlinear Modelling of
- Structure.
- An introduction to fiber Modelling Approach
- Nonlinear Modelling of material (fibers).
- Fiber modelling of Steel Beam.
- Fiber modelling of Steel Column.
- Fiber modelling of RC Shear Wall.
- Stress-Strain Relationship
- Stress-Strain Relationship- Cyclic Load.
- The Moment Curvature Curve.
- Hinge Properties.
- Plastic Hinges.



Performance Based Design for Steel Structure

- Performance Based Design Process
- Ritz Vector
- Fast Nonlinear Analysis
- Energy Diagram
- Hysteresis Behaviour
- Moment Rotation Relationship
- Capacity Based Design
- Displacement Based Design
- Energy Based Design
- Performance Levels
- Performance Objective
- Performance Parameters
- F-D Relationship
- Backbone Curve
- Hysteresis Loop Model
- ADS Spectrum
- Push Over Analysis
- Time History Analysis

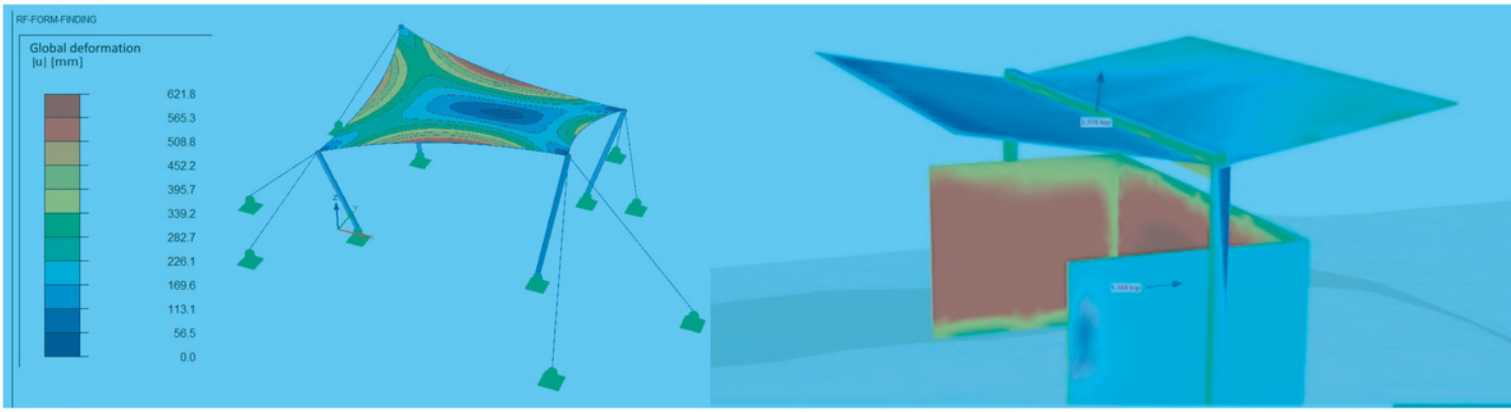


WIND SIMULATION (Wind tunnel Test)

Program module: 06

RWIND Simulation Case Setup RWIND Simulation software, developed by companies PC-PROGRESS and DLUBAL, was designed as specialized tool for rapid CFD simulations of wind load on large variety of structures. RWIND Simulation works as standalone software, or it can be directly connected with structural design software RFEM or RSTAB. RWIND Simulation user interface is super ease of use with minimal necessary settings and user skills. The work flow is very simple. The input for RWIND Simulation is the surface model of the structure(CAD,.STL). The virtual wind tunnel is created around the structure. Wind speed is set. There set of the parameters are not mandatory, but available.

WIND Simulation of different type steel structure.



CONNECTION DESIGN

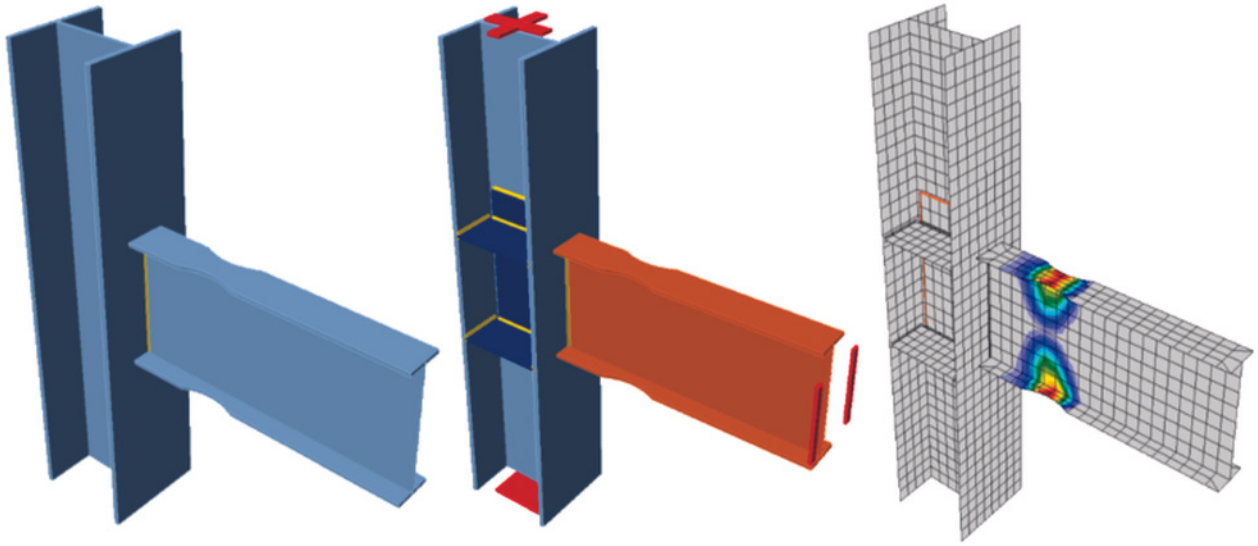
Program module: 07

Steel connection analysis and design

IDEA StatiCa Connection is a Component-Based Finite Element Method (CBFEM) design software intended for use by qualified structural engineers familiar with steel connection design. It relies on the users' understanding of the engineering principles to simulate each joint correctly and interpret the resulting behaviour following the FE analysis. As such, it is not intended to replace the user's engineering knowledge, but to enhance their design capabilities by leveraging the underlying CBFEM engine. This guide summarises some key elements of the software and is advised to be read by all users of IDEA StatiCa. By doing so, the user will avoid common mistakes that can potentially lead to erroneous results. Moreover, the online sources in the Support Center are constantly updated with new information about the use and principles of using the software. Last, but not least, we strongly advise that you read the theoretical background and its national appendixes as well.

IDEA StatiCa®

Calculate yesterday's estimates



IDEA STATICA & RAM CONNECTION FOR STEEL CONNCETION DESIGN

Fast Connection Design

Receive clear pass/fail checks, according to your code, in minutes. IDEA StatiCa enables you to shorten your connection design time by up to 80% by providing
you with:

• A database of 10,000+ pre-designed 2D/3D connections, footings, CHS and HSS connections, steel-to-timber, and other connections

Geometry and Loading

Design steel connections of any type or complexity.

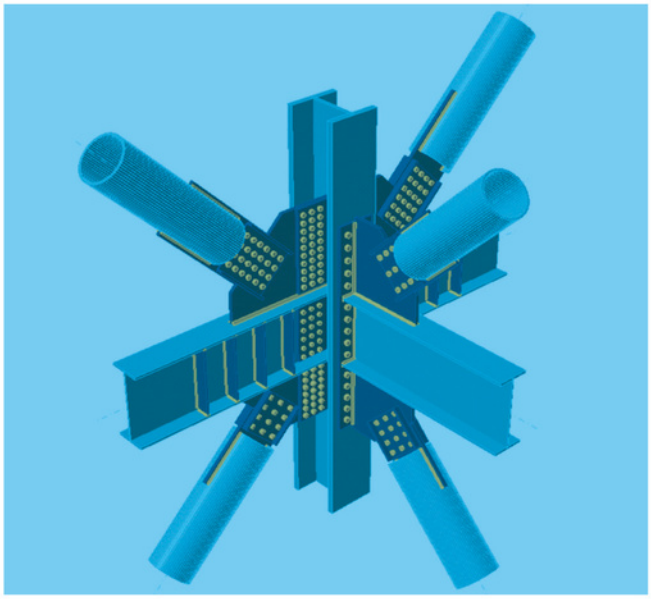
Start from scratch or import connections directly from your CAD or FEA software.

Steel moment connections in steel structures,

shear and axial connections,

including seismic Beam to beam, beam to column, column to column, or column to base plate connections

- ❑ Connection Families (Joint Types)
- ❑ Single Plate (SP) Connections – Shear
- ❑ Designing Moment Connection
- ❑ Designing Gusset Connection
- ❑ Designing Base plate Connection
- ❑ Designing Splice Connection
- ❑ Detailed skill



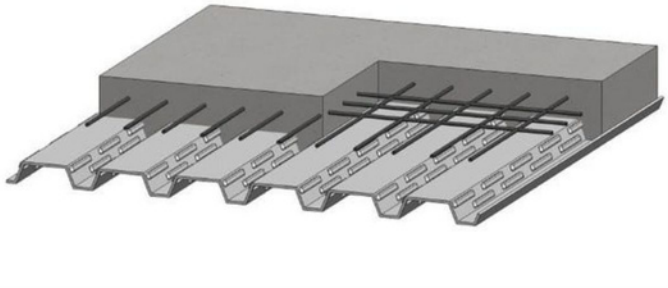
RAM Connection can be used stand alone or fully integrated with RAM Structural System, RAM Elements, and STAAD.Pro® for steel connection design. To check a specific connection, design a single connection for multiple joints, or optimize each connection in your structure, RAM Connection gets you there quicker than ever before.

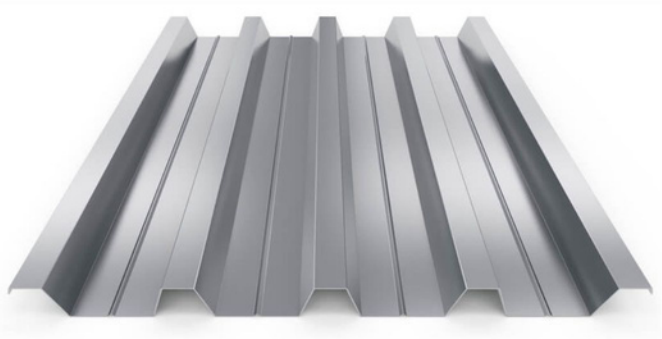
Automated Connection Design Designing, checking, and optimizing shear, moment, gusset, splice, bracket, base plate, and truss connections, according to
AISC (ASD or LRFD), EN 1993, BS 5950, IS 800, GB 50017, AS4100, and NZS 3404 has never been this automated

Programme module:08

Design and Analysis of slab and foundation system.

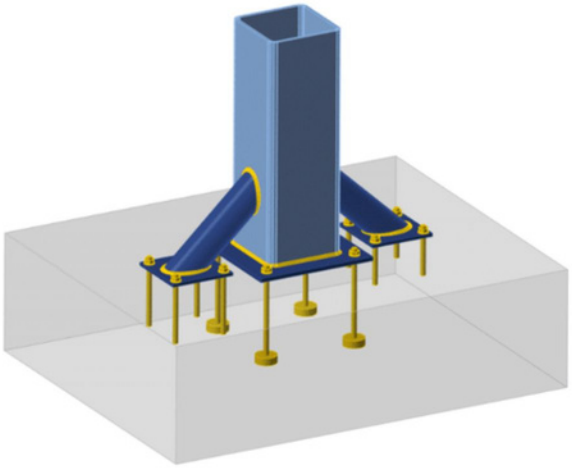
1. Composite Deck Slab
2. Non-Composite Deck Slab
3. Steel Deck

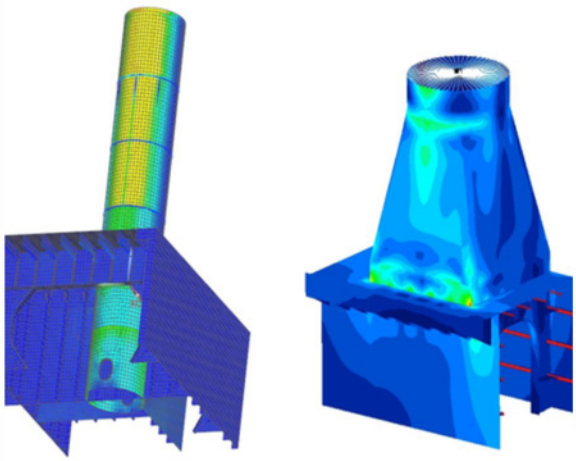




Foundation System

1. Isolated Footing
2. Pile Foundation

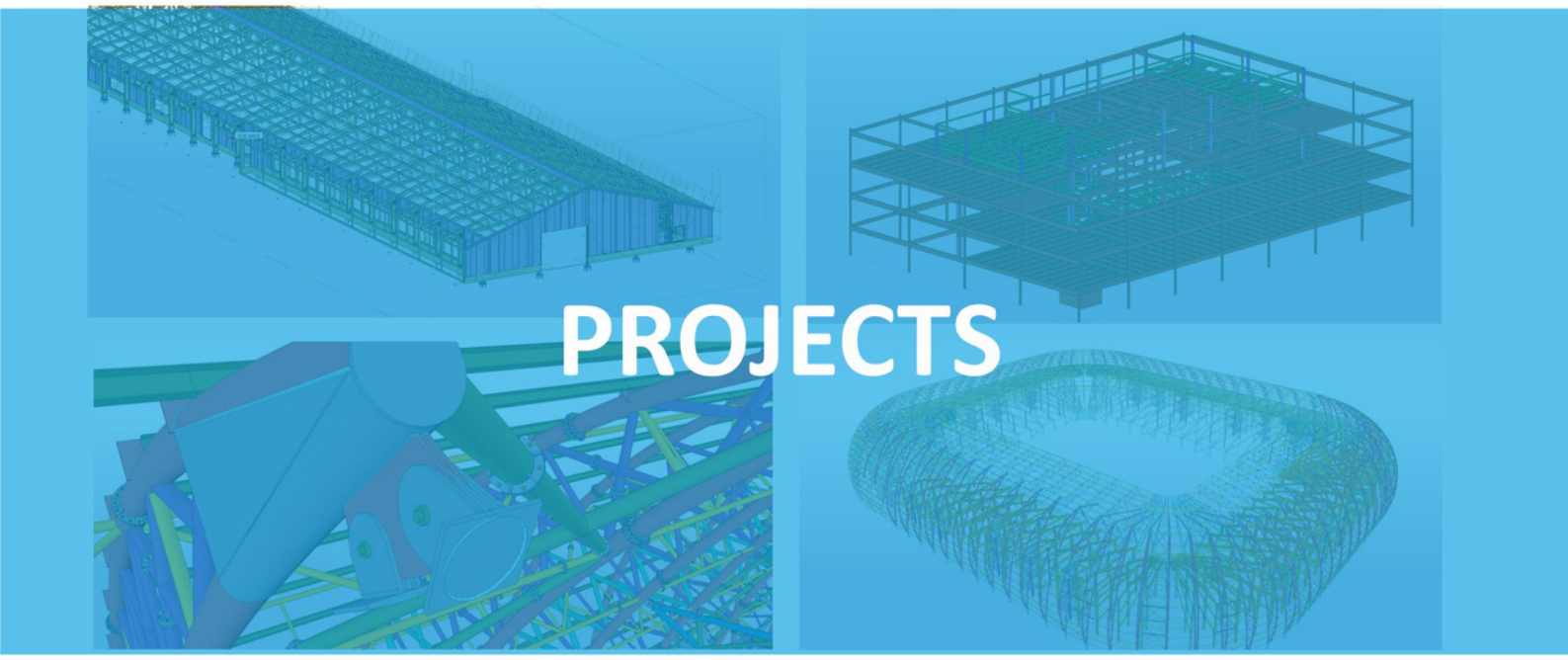




PROJECTS

Project List under consideration(Live and Existing)

- Multistory steel structure
- Pre-engineered building steel structure
- Design of industrial steel structure
- Design of structural design of pipe racks
- Design of transmission tower line
- Steel truss factory design
- Steel warehouse design
- Steel storage building
- Steel agriculture building
- Light steel gauge
- Industrial projects
- Water tank
- Outrigger Truss Frame
- Dia-Grid structure frame
- Dome Structure
- Stadium Project
- Tensile structure
- Facade structure



Programme module:09

After compilation of modelling, Design and detailing of steel structure and their component, engineers need to submit lots of file, reports.

1 Structural designs scope, GSN (General Structural Notes) & Specifications understanding,
2 Architectural design & other trades understanding,
3 AISC Construction Manual understanding,
4 RCSC-2014-Bolted joint specifications,
5 AWS D1.1, D1.8, A2.4 Understanding,
6 Other Building Codes (OSHA, ADA, IBC),
7 RFI & Erection note understanding,
8 Software's 3D modeling capability,
9 2D Erection Drawing presentation skill,
10 Digital output understanding (PDF, DXF, IFC,),
11 Effective Client communication via E-mail & phone,
12 Proof Checking.

STRUCTURAL ENGINEER SKILL SETS

EXCLUSIVE CAREER SUPPORT

STRUCTUREX provide a life time career assistance to ensure candidates success and getting Placed.

Live Career-Oriented Webinars

Live webinar sessions that include curriculum and career services walkthrough to help learners understand their learning objective and expectations of hiring managers.

Leadership Skill Development Sessions

Recurring training sessions with experts to help learners develop Interpersonal and Leadership Skills.

1-on-1 Career Mentoring Sessions

One-on-one Career Mentoring sessions on how to develop the right skills and attitude to secure a dream job.

Exhaustive Interview Preparation

Expert tips, sample interview questions, mock interviews with constructive feedback from industry experts to gain hands-on experience of technical rounds , HR round, and more.

Job Search Assistance & Job Feeds

Access to multiple job portals to help learners navigate through thousands of jobs including global remote jobs.

Profile Building Assistance

A dedicated Career Coach will provide expert tips on how to create an attractive , relevant resume and LinkedIn Profile.

CAREER PROSPECTIVE

GLOBAL HIRING COMPANY

ARUP	ATKINS Member of the SNC-Lavalin Group	TATA TATA CONSULTING ENGINEERS LIMITED	Stantec
wsp	Kimley»Horn Expect More. Experience Better.	kpff	Balfour Beatty Construction
Honeywell	RAMBOLL	FLUOR	BECHTEL
INTEGRAL	COWI	MOTT MACDONALD	Shapoorji Pallonji
SKANSKA	ARCADIS Design & Consultancy for natural and built assets	Jacobs	VINCI

14

CAREER OUTCOME

STRUCTURAL ENGINEER

BIM ENGINEER

CIVIL DESIGN ENGINEER

BIM MODELLER

STRUCTURAL COUNSULTANT

SAMPLE CERTIFICATE

List of certificate

1. PGD Certificate
2. 8 Month Internship Certificate
3. Experience Certificate(only after submission of projects)

1st May, 2023

Certificate ID: SX-569AHS
www.structurex.live/verify/

STRUCTUREX

Corporate Training

STRUCTUREX PRIVATE LIMITED
Certifies that

Mr. Dev mani

has Successfully Completed

Post Graduate Diploma Program in

INDUSTRIAL DESIGN & TECHNOLOGY

A Program that include Modeling, analysis design & detailing of Steel, Industrial structure, high Rise structure with research in seismic/wind/PBD.

September 2022 - April 2023

STRUCTUREX PVT. LTD. SEAL CORPORATE TRAINING

Program Coordinator

Program Director

ADMISSION PROCESS

Enrolment Form

A one-on-one chat with our SME to understand your basic knowledge, prior work experience, and your expectations from the course. After your interview assessment,

Interview and offer letter

A one-on-one chat with our SME to understand your basic knowledge, prior work experience, and your expectations from the course. After your interview assessment, you will receive an offer letter from us.

Payment

Based on your interview performance, you would receive an offer letter and an fee payment as per option choosed

Batch Allotment

After the payment formalities, you will be given course credentials and your learning journey will begin!

FEATURES , ELIGIBILITY & FEE STRUCTURE

Key Features:

1. Mode of Program: Online Live
2. Platform : Zoom Meeting
3. Duration: 08 Month
4. Recording of live class
5. Access of E-Liberary
6. 1 Year access of www.structurex.online for learning

Eligibility

Bachelor/Master/PHD in civil engineering or relevant work experience in AEC Industry

Program Fee:

Program Module	Learning Module	Nature	Fee Structure	Payment Option	Duration
1	Steel Structure analysis & Design	Compulsory	INR 60,000/-(Inciuding 18%GST)	One Time Payment	8 Month
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3	Computation Design /Parametric Modelling				

Contact Us:
For further details, please reach out to:
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training@structurex.in
www.structurex.live

THANKS

STRUCTUREX PVT. LTD.

CONTACT US

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