



## **DEPARTMENT OF CIVIL ENGINEERING**

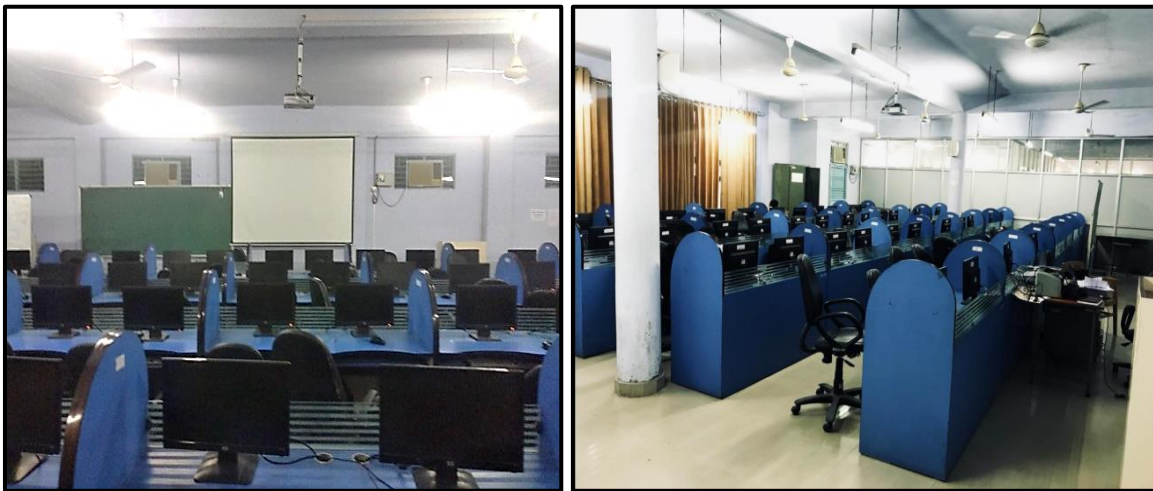
### **COMPUTER AIDED DESIGN LABORATORY**

Computer Aided Design laboratory is very well established with a covered area of 180m<sup>2</sup>. Laboratory consists of 60 desktops with latest configuration. Good internet facility, projector and audio system for training & seminar purposes are available. Computer Aided Design laboratory has 20 licenses of STAAD PRO., WATER GEM, RCDC, RAM, RAIL WORKS, ROAD WORKS, STEEL PRO etc. This laboratory is continuously used by students, researchers and faculties for learning, development, research and design consultancy. Various latest tools such as Building Information Modeling, Artificial Intelligence (Machine Learning, Deep Learning, Fuzzy Logic etc.) are being used in this laboratory for the advancement of engineers. Students learn professional 2D and 3D drafting, handling latest civil engineering software's and lay-outing in civil engineering works developing necessary skills for the civil engineering profession. Here is the list of some of the software's available in the computer aided design laboratory:

- a. **Bentley's Software Bundle:** Computer Aided design laboratory is equipped with 51 software's included in Bentley's software bundle. They are widely used in industries for the planning and designing purposes. Some of the important software's are:
  - i. **STAAD PRO Connect:** Latest version of STAAD PRO mainly used for analysis of reinforced concrete and steel structures.
  - ii. **Water Gems:** Water Gems are generally used the planning of distribution of pipelines across the area.
  - iii. **Storm CAD:** Storm CAD are generally used for analyzing the efficiency and lay outing of storm drain lines across the city.
  - iv. **Open Bridge Designer:** Create physical and analytical models throughout the lifecycle of steel and concrete bridges, combining capabilities for modeling, analysis, and design.
  - v. **MicroStation:** Model, document, access, and view architectural, engineering, mapping, construction, and operations design information with the power and flexibility you need for any size project.
  - vi. **Pro Structure:** Create accurate 3D models for structural steel, metal work, and reinforced concrete structures.
  - vii. **Pro Steel:** Efficiently create accurate 3D models for structural steel and metal work.
  - viii. **SACS Offshore Structure:** Optimize design to ensure compliance, understand behavior, and accurately predict performance of all types of offshore structures.
  - ix. **RAM Concept:** RAM Concept is structural software for the design of post-tensioned and reinforced concrete floors including slabs, mats, and rafts. It provides exceptional

visibility into compliance, efficiency, and practicality. Design floors and foundations reliably and efficiently, saving time and money, and overcoming the most common concerns you face as a designer. RAM Concept allows you to easily design complex floor geometries and incorporate changes with ease using powerful task automation and clearly organized output.

- x. **RAM Connection:** RAM Connection is steel connection analysis and design software for virtually any connection type. You can easily verify your connections in seconds, with comprehensive calculations, including seismic compliance. RAM Connection is proven to increase productivity with optimized workflows and full integration of 3D design models.
- xi. **STAAD Foundation Advanced:** STAAD Foundation Advanced is a comprehensive structural foundation design and analysis software that includes specialized features for foundations of many types. You can perform isolated, combined, pile cap and mat foundations or more complex foundations including horizontal vessel foundations, tank annular ringwall, lateral analysis of pile/drilled piers, and vibrational analysis for machine foundations.
- b. **AUTO CAD:** AutoCAD is a computer-aided design software developed by the company Autodesk (hence the name AutoCAD). It allows you to draw and edit digital 2D and 3D designs more quickly and easily than you could by hand. The files can also be easily saved and stored in the cloud, so they be accessed anywhere at any time.
- c. **REVIT:** Revit is commercial building information modeling (BIM) software by the company Autodesk. It's generally used by architects, structural engineers, mechanical, electrical, and plumbing (MEP) engineers, designers, and contractors. Autodesk Revit allows users to create, edit, and review 3D models in exceptional detail.
- d. Many other software languages are available in the laboratory for the better research assistance and carrier development.



**Computer Aided Design Laboratory**