

A Guidance Portal - Plan your career:

PLAN YOUR CAREER

Get Career Guides to plan your Career!

Start Yours >>>

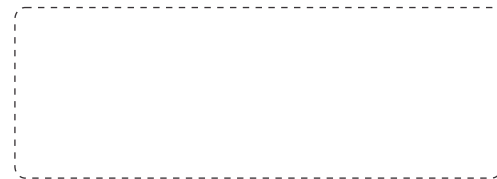
The most common question, since we were kids, has been "What do you want to be when you grow up?" Though an answer always came readily then, now when it is time to pursue your desired career – it's time for confusion. To ease your confusion, we present to you our newest feature – "PLAN YOUR CAREER" – A guidance portal just for you. CADD Centre Guidance Portal is special because it is uniquely designed just for budding engineers.

Plan your Career is a page where you can use the tool provided to chart out your own career map. The module will inform you of the qualifications and skills you need to pursue a career of your choice. The user-friendly module will also provide you the narrowed down options of courses pertaining to your degree. This is a trusted guidance portal because it is backed by CADD Centre's years of experience.



Book Post

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CADD Centre Launches Competency Certification Programs to Boost Your Employability

To register for an exam of your choice, logon to our website or walk into any of the CADD Centre authorized C3certification centres. The details of our authorized centres can be found listed at <http://www.ccube.asia>. Alternatively, you can e-mail us at contact@ccube.asia



Please send your feedback to the Editor - Ms. P. Malarvizhi, Manager - International Business & Corporate Communications, CCTS at p.malarvizhi@caddcentre.ws
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Corporate Office: #91, Dr. Radhakrishnan Salai, Gee Gee Crystal, 8th Floor, Mylapore, Chennai - 600 004. Ph: (91 44) 4596 6100.

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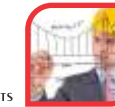
MONTHLY NEWSLETTER

your CAD / CAM highway

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Bentley's ProSteel is a 3D modeling environment for structural steel and metal work supporting your construction and planning tasks. Working on the AutoCAD and Microstation platform, you get an intuitive and integrated multi-material modeler perfectly suited to layout complex structures, produce shop drawings, assemble all your connections, and manage your bill of materials.

From initial planning and design to assembly, ProSteel is a comprehensive software built by engineers experienced with steel design. Our many years of experience in the field and the close contact with our users has contributed to ProSteel becoming an internationally recognized and important application for 3D structural steel and metal work.

Based on standard platforms, both MicroStation and AutoCAD, ProSteel easily lets structural engineers, detailers, and fabricators create 3D models for both concrete and steel.

ProSteel provides automatic creation of documentation and details. The open working environment and programming interface supports standardization of the program. The automatic creation of documentation and details increases productivity and therefore profitability. The detailing includes miscellaneous steel such as stairs, handrails, ladders, and circular stairs. The documentation provides 2D drawings from a 3D model, including bills of materials, NC data and PPS data.

ProSteel offers integration not only with Bentley products but also with third-party products. This capability eliminates duplication of effort and increases interoperability with other facets of the design chain, including structural analysis and design (such as STAAD and RAM) and plant design (AutoPLANT).

ProSteel can be easily customized and standardized due to its flexibility and the programming interface. Workflows are

optimized due to this open working environment.

ProSteel software is used by structural/civil engineers, plant engineers, fabricators, detailers, architects, and educators. Firms of all types such as structural/civil engineering firms, plant industry, architects, universities, structural consultants, and firms of all sizes, including small to large size companies, are finding the application of ProSteel inevitable.





Structural Engineering: Career Opportunities Scale New Heights

From tents to skyscrapers, we have come a long way. Till about thirty thousand years ago, we were hunters. We moved from place to place looking for food. We did not seem to bother too much about shelter – for hunters, a permanent shelter does not have relevance.

We lived under open sky, trees, and caves. However, soon we started trying our hands in making temporary tents using wood sticks, and animal skins to protect ourselves from sun, wind, and other natural forces. The art and science of structural engineering started with our understanding of constructing tents, perhaps the first man-made structures.



Now thousands of years later, we build houses, and skyscrapers. Recently, a group of engineers have unveiled their plans to build the tallest building in the world. It is called, Tall Tower, and its height will be about 20 kilometers, reaching the stratosphere. A building this high poses many structural issues, and we don't know if it will ever be built. Tall Tower will need more than 985 million tonnes of steel and would have to withstand jet-stream winds of 500 km/hour!

We have constantly advanced our understanding of structures that we can now conceive the Tall Tower. However, still the challenge is the same: to deal with the same natural forces and make sure that our buildings do not fall down. The science is named civil and structural engineering.



According to Wikipedia, structural engineering is a field of engineering dealing with the analysis and design of structures that support or resist loads. Structural engineering is usually considered a specialty within civil engineering, but it can also be studied in its own right. Structural engineers are most commonly involved in the design of buildings and large non-building structures but they can also be involved in the design of machinery, medical equipment, vehicles or any item where structural integrity affects the item's function or safety.

What is a structure?

A structure can be any assemblage of materials which is intended to sustain loads. Writes, J E Gordon, Author, **Structures or Why Things Don't Fall Down**, "Structures are involved in our lives in so many ways that we

cannot really afford to ignore them: after all, every plant and animal and nearly all of the works of man have to sustain greater or less mechanical forces without breaking, and so practically everything is a structure of one kind or another.



When we talk about structures we shall have to ask, not only why buildings and bridges fall down and why machinery and aeroplanes sometimes break, but also how worms came to be the shape they are and why a bat can fly into a rose-bush without tearing its wings. Why do birds have feathers? How do our arteries work? What can we do for cripple children? Why are sailing ships rigged in the way they are?"

For the sake of analysis, structures are usually classified in the following ways: line elements (bars, rods, columns or cables), surface elements (panels, deep beams, tension and compression membranes, and any other two-dimensional equivalents of line elements), line elements that carry load by bending (beams or arches), surface flexural elements (plates or shells), and hybrid elements (beam columns that are subject to axial load and bending).

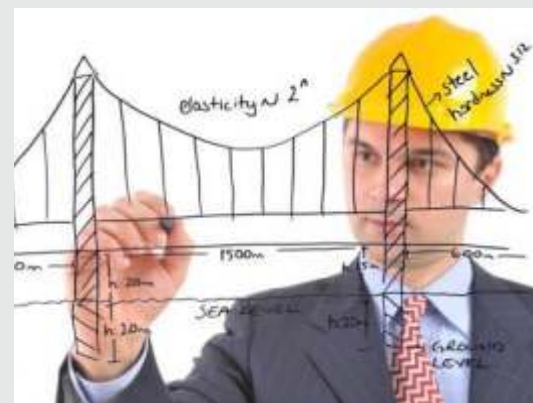


Career Opportunities In Structural Engineering

Today, there is an emergence of a new variety of structures. We are building sports stadia and high rise buildings of unimaginable sizes. The design of buildings, bridges and other structures will be required to make many technical decisions about structural systems. Further, evaluating the safety - the strength and stiffness, and planning for the erection of structures are gaining importance.

Hence, the career opportunities in structural engineering are on the rise. The key role of a structural engineer is to design efficient, economical, and attractive structural forms for our buildings and other constructions. A structural engineer will also have to carry out a structural analysis that establishes the internal forces and deflections at all points produced by the design loads.

A career in structural engineering offers an exciting opportunity to contribute to the design of the built environment. If you enjoy subjects such as mathematics, science, computing, art, geography, design and technology, and have an interest in unusual buildings or structures, then structural engineering could be the career for you. Other subjects which you may wish to study include: computing, design and technology, art, and geography.



Truss Me! App

As gaming has entered the realms of education, a new "app" was designed to teach structural engineering, called Truss Me! is creating waves online. In engineering, a truss is a structure comprising five or more triangular units constructed with straight members whose ends are connected at joints referred to as nodes.

Truss is derived from Old French *trousse*, around c.1200, which means "collection of things bound together. A truss structure is composed of bars connected through joints. Joints are very important for truss structures, as they carry all weights (loads) and provide the connection points to the ground (constraints).

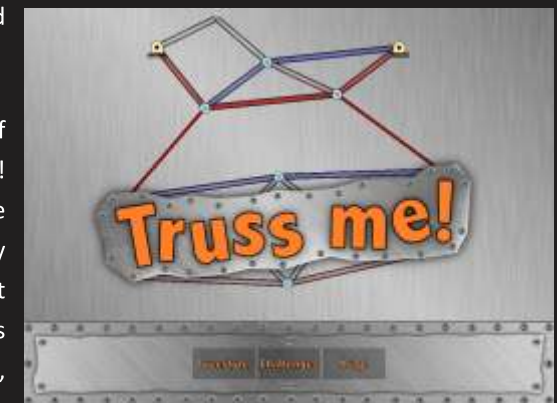
The success of the Truss Me! app may be explained by the fact that it feels and looks like a game, even though the simulation engine running behind the scenes is truly state-of-the-art. The app, including its algorithms, was designed by a US professor.

The app is developed to help students acquire some intuition as to how truss structures behave through state of the art simulations. The game has two playing modes. In the freestyle mode, students are encouraged to design and test their own structures. In the

challenges mode, students have to solve structural puzzles in order of increasing level of complexity.

The developer of the game used trusses as the fundamental component of the game for several reasons. Firstly, trusses are everywhere. Students can see them everywhere in their daily life. They are in bridges, roofs, cranes, stadiums, power lines and more. Trusses are also simple. "All you need to understand the behaviour of a truss is the notion of tension and compression.

Consequently, there is no need to explain complicated concepts such as



shear and bending. Yet, despite their simplicity, trusses allow you to explain all the main concepts of structural

mechanics: loads are related to deformations, deformations are related to stresses, and stresses are related to failure," the professor says.

Truss Me! utilizes state of the art simulation techniques used by aerospace, mechanical, and civil engineers to provide the most realistic behavior for your structures. It is available for purchase on the App Store.