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- Staad/pro, MX Road, Microstation
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- Creo
- 3D Printers

### Services at a glance

- Training for faculty members
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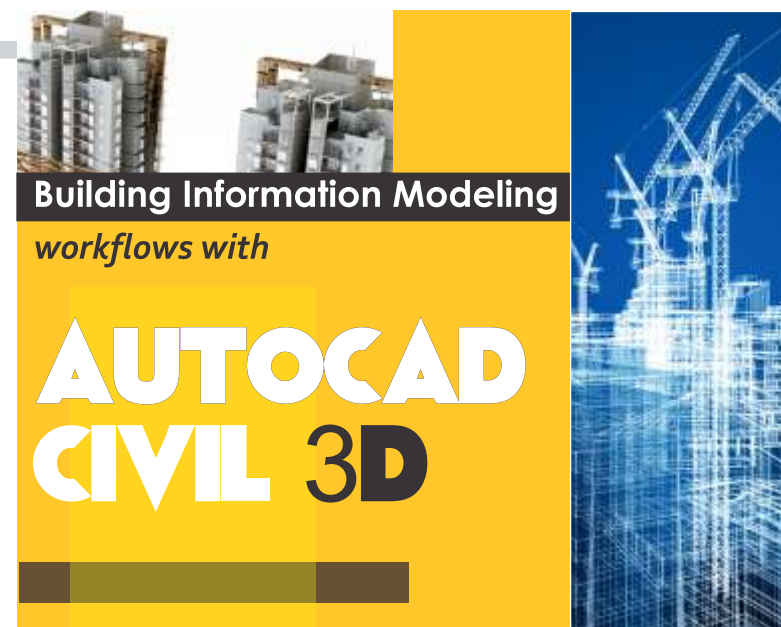
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**B**uilding information modeling is not a manufactured product, article or named software program. It is just a cohesive process built on **M**reliable information about a project from design through construction and into operations. BIM is not just for the architectural project. Even though it has its roots in architecture, the philosophies of this is applicable to everything that is assembled or built, including highways and roads, and the remunerations of BIM are being practiced by civil engineers in many ways, they are appreciated by architects.

BIM permits engineers very conveniently to forecast the performance of assignments before they are constructed, enhance designs with scrutiny, react to design variations more promptly, mock-up, and provide greater quality creation documentation. Additionally, it empowers comprehensive groups to extract valuable data from the model to enable earlier decision making and further worthwhile project delivery. Public at times associate BIM with 3D visualization, but it's more than that. BIM creates a body of information. And that can be used from the commencement to decommissioning. BIM is a process that links all phases of a project - not a software tool or technology.

The use of documentation software to support Building Information Modelling (BIM) workflows and AutoCAD Civil 3D civil engineering design is to escalate project delivery, retain more consistent data and respond more rapidly to fluctuations.

## Experience better civil projects with BIM and AutoCAD Civil 3D

Autodesk solutions take full benefit of the rich information on the intelligent 3D models. Building Information Modeling (BIM) is a quick 3D model-based process that provides insight for managing and building projects more rapidly, more economically, and with less environmental influence.

Without problems create designs with intellectual objects by means a comprehensive portfolio of industry prominent software for set-up projects.

**01**

AutoCAD Civil 3D software is the BIM solution to setup for civil engineers, technicians' drafters, designers, and working on transportation, water and land development projects.

**02**

Autodesk design sets provide widespread industry resolutions for both CAD and BIM workflows in one economic and flexible package.

**03**

Autodesk's comprehensive portfolio increases the power of BIM, together with AutoCAD for documents, 3ds Max Design and Autodesk Navisworks, for picturing and virtual reality and AutoCAD Map3D for effective substructure development.

**04**

Autodesk solutions take full benefit of the rich material in the intellectual 3D models.





## Construction Trends in 2015

**In 2001, about 286 Million were living in urban areas across India. It had the second largest urban population in the world. As per the Indian Census, 2011, the urban population had increased to 377 Million, thereby registering a growth of around 32%. As per recent estimates, nearly 590 Million people will live in Indian cities by 2030.**

Construction as an activity is undertaken by general contractors, who are experts in one type of construction which is either residential or commercial. The cost part of the construction industry is ruled by raw material cost and subcontracting cost.

Raw material cost which is the major cost constitutes for 30 - 50% of the total cost and subcontracting cost constitutes for about 20 - 40%. The raw material used up by the Construction Industry in any country primarily includes cement and steel. The Consumption of steel by construction industry has grown to almost 16.1% over the past 5 years but cement consumption is only 9.6%. An Extraordinary rise in prices of these two raw materials has a direct effect on the cost of the project, which in turn affects the margins of construction companies. Productivity also depends upon the range of the projects a company can implement. Companies having a strong existence in segments like power and industry find it difficult to accomplish to enjoy higher margins.

India accounts for an estimated urban housing shortage of 18.8 Million dwelling units and the housing shortage in rural India is estimated at 47.4 Million units, in 2012. Construction activities contribute more than 10% of India's GDP. The requirements of the existing population are huge and the current levels of infrastructure are insufficient to meet these demands. A re-generation in the existing places and the creation of new and smart cities would cater to the ever-increasing demands.

More than half of the demand for construction services in India comes from the infrastructure sector, the remaining comes from industrial activities, residential and commercial development. The Indian construction industry is valued at over USD 126 Billion. The construction industry is the second largest employer and contributing to the economy after the agriculture sector. The construction sector adds to the second highest inflow of FDI after the services sector and provides employment to millions of people. The Government of India is initiating a new urban development mission, which will help develop many cities with a population of more than 100,000 and some cities of religious and tourist importance. The urban local bodies must enter into partnership agreements with foreign players to sustain to the need of the hour and maintain the equilibrium of the demand and the necessary supply for the same.



## Construction companies in the near future

Many companies are already taking it to higher levels by adopting to construction management software along with an added document management capabilities, saving a larger percentage and amounting to much larger profits. Construction managers are up to date and swift in accordance with the latest trends and they follow all the processes and contracts online, which is true even for much smaller companies.



### Geo-fencing for the boom in the construction industry.

Geo-fence is an app, which makes use of GPS to track where an object is. Many contractors depend on time-tracking software to make payments to the specific person. Geo-fencing is specifically useful to track any employee's presence or absence on site to organize and manage the payroll system better. Many other construction-related mobile apps are also coming up, like Red-Trac and Labor Sync, and the trend is ever-growing to become a rage in the coming year.



### 3D printing is making its way into the construction sites.

3D printing is obviously the future requirement of the construction industry. Most conscious managers are turning to this tool to give way to green construction, thereby saving the costs for their company and adding to the profits. Construction is a conventional industry in terms of technical innovations. The construction industry will effectively and universally adopt 3D printers before the end of this decade.



### Commercial construction will be green.

Green building is following the latest trends and saves a lot of costs. In the near future almost 48% of new construction projects which are non-residential will be green. The green effect is continuously on the rising spree and mostly all commercial upcoming constructions will effectively follow this trend very soon. The green construction management software will be the latest demand for all the eco-conscious customers and construction companies will be adopting to the same.



### Zero Energy Ready (ZER)

It is powered by renewable energy sources and tends to create a healthy and comfortable environment which has the foundation and the power to stand the test of time and changes. It is the latest trend in efficient home designing and energy saving trends for a better future in the construction industry.



### Location of Homes

The biggest trend in home design in the recent era is about the location that it is set in. People prefer closeness to parks and green communities, the growing awareness is not only financially cost-saving, but also social and emotionally beneficial as living in a community has multiple benefits as compared to individual aloof houses.



### Micro size matters

Tiny Homes are a glimpse into the extreme world very few of us will actually even imagine entering these are designed so smartly so as to fit in every requirement with economical spaces wherein storage is possible in every way everywhere. There are micro-baths, micro-kitchens and micro-laundry too, where the effective usage of minimum space happens which tends to save a lot of costs too.

## Facts about the construction industry

- ▲ Value of the Construction industry: \$126 billion (2013).
- ▲ Total expense of the construction industry: \$427 billion (2013)
- ▲ Spending growth of the construction industry: seven per cent (2013)
- ▲ An average of 11 per cent of India's GDP was based on construction activity in between the years 2011-2013
- ▲ More than 35 million people are employed purely in the construction industry in India.
- ▲ After services, construction constitutes for the highest inflow of FDI into India.
- ▲ The National Housing Bank's housing index presents that the prices of houses in India are at the highest level of 233 index points.
- ▲ The output of infrastructure has grown at an average of 5.34 per cent per month in the last era.
- ▲ Paints and coatings industry shows a value of: \$4.79 billion (2012).
- ▲ The industry of paints and coatings is expected to grow at a compound annual growth rate of 14 per cent, which will hit a value of \$9 billion in the year 2017.