INTRODUCTION
Innovation is often described as coming up with new ideas for existing problems, but for an architect it has a different meaning and value. Innovation for an architect is like the steel structure of the entire building, it is a very important element as just as the building would collapse without its basic steel structure so will an architect’s career if he/she is not innovative. The architects of the present world and also the future architects need the skill to come up with innovative ideas and designs that are not only an architectural statement but also sustainable and green. With the evolution of technology, coming up with new and innovative ideas have become easier and achievable. There are many software’s that are being developed to make the job of an architect easier. Now it is easier to reimage and remodel a building than it was 10 years ago. With the help of technology, we can now build our dream cities. As mentioned earlier, many software’s are being developed to assist an architect. Some of the software’s presently used by architects are:

1. Sketchup: Much easier and compatible than the traditional CAD software, Google Sketchup is used to produce 3D models. One of the biggest pros with this software in particular is its user-friendly interface.

2. Archfacile: Designing of 2D plans of floors, houses etc. can be now done with the help of Archfacile.

3. Autodesk Revit: It is an all in one software, enabling the user to work with both 3D and 2D components. Designing a building with its 3D components can be done easily using Autodesk Revit. With Autodesk Revit, even retrieval of the buildings info from the building’s model database has become easier.

4. Adobe InDesign: InDesign helps architects create anything from booklets to presentation sheets, showcasing their designs and works to their clients. It is mostly used by architects to create their resumes and portfolios.

5. 3D Studio Max: 3D Studio Max has modelling capabilities can be even used on a Microsoft Windows Platform. Architectural visualizing studios are the frequent users of this software.

6. AutoCAD: With AutoCAD, users can experiment with different lines and line weights, and produce a decent draft. It helps architects create designs and draft more efficiently.

7. V-Ray: With the help of V-Ray, architects are capable of putting their clients in the design such that the clients are able to experience the feel of the design.

8. Photoshop: High quality images of elevation or plan can be obtained by using Photoshop. Last minute touchups are now made easier due to its image layering system.

9. Rhino3D: It is one of the major tools used by architects when it comes to 3D modeling. Rhino3D helps users get really accurate models.

10. CATIA: This software is used in various fields. Complex and accurate models are created using CATIA.
LITERARY SURVEY

[1] With the growth of the economy, the architecture, engineering and construction fields are undergoing major transformations such as adopting building information modelling, concept of sustainability etc. Through surveys conducted, it was found that it was essential to introduce the concept of BIM into the course of architecture educational courses as now all professional architects have taken a major step and changed from the traditional CAD software to BIM and are facing several challenges. BIM is introduced at sophomore/junior/senior year for engineering whereas for architecture it is only introduced at master’s level as it is most commonly seen as a threat to an architect’s creativity. Another major topic covered in paper was that of sustainability. Almost 94% of the architects that took part the survey voted that sustainability is the most important and vital concept for the future, followed by engineers and then the construction field. Through another survey conducted on the technological softwares used for teaching the concept of sustainability, it was found that architecture focuses more on energy modelling softwares such as Autodesk Ecotech, which is mostly taught at the UG/PG level. [2] From the survey conducted in 1998, it was found that technology has now and is still becoming an integral part of the AEC industry. Almost everything, from planning the basic structure of building to the documentation of the entire building and the process, is being completely computerized. The AEC industry slowly accepts technology that has been proved a success before being implemented in their field. In other words they adopt technology rather slowly than compared to other industries. The dependence of technology has been proven beneficial yet detrimental at the same time. The conclusion of the survey was that the implementation of technology is a very important factor for the development of the AEC industry. [3] The use of BIM has been proven the most vital piece of technology by far for the AEC industry. It helps the user provide a better and to-scale representation of the project which makes the whole process of constructing and implementation easier and time efficient. It also provides an interface for people of different fields to collaborate and also helps detect the problems one might face when constructing the building well in advance. [4] BIM is one of the fastest immersing innovative technology used in the AEC industry. BIM increases the efficiency of collaboration within the stakeholders but one of the greatest potential risks is that there is a chance of eliminating the crucial check and balance mechanism. It is hoped that with implementation on BIM, collaboration increases and fragmentation is reduced. [5] With the help of BIM profits have been improved, costs have been reduced and the customer-client relationship has immensely strengthened. In the near future all CAD systems will be replaced by BIM. As there are pros to implementing BIM, there are cons to. For BIM to be effective, the 3D design data has to be computable and a well-defined process model is required to eliminate data compatibility issues. [6] The AEC sector is indeed unique as compared to other sectors but this sector in particular adopts technology rather slowly. Since the sector is such that it consists of multiple players who come from different backgrounds and perspective, technology would help improve the collaborations within the players from within and beyond their field. [7] BIM has become one of the mainstream technology used by the AEC sector. Lack of awareness, cost and education are only some of the barriers for the widespread use and implementation of BIM. Another major setback is the data compatibility. Architects now use something called Green BIM, the sustainable version of BIM. [8] BIM has emerged as one the most commonly used innovative technological tool in the AEC sector. Along with its many benefits there are also barriers to the implementation of BIM such as data ownership risk sharing. [9] There are many benefits and barriers to using BIM. The benefits include a better design phase, makes the process more time efficient and cost efficient, improves the process of construction, documentation and improves the relationship between the client and architects. The main barrier to BIM is the people’s mindset as they are not
willing to learn BIM as they feel the software they currently use is more than enough for them to design. Even though this barriers exist in the near future most of the existing design software’s will be replaced by BIM. BIM can be implemented in both new as well as existing buildings. One of the benefits is the maximum optimization to enhance project management. The barrier in this case is the collecting of data in the BIM form and automation of data capture. Even though there is a good chance to setup BIM for the existing buildings, it will be challenging in future research opportunities.

FINDINGS
The building information modeling (BIM) is most commonly used software in the present day in the AEC industry. There are many positives and negatives towards the implementation, but through various examples around the world the implementation has been quite successful. BIM has made the whole process of designing and building more time and cost efficient and also has made collaboration, both within and outside the field, much easier. Data compatibility, data ownership are just a few of the many setbacks faced by the implantation of BIM. The biggest setback by far is the fact that schools and colleges don’t have courses for BIM and so people find it hard to accept BIM and are rather comfortable using the now existing softwares for designing.

CONCLUSION
Through this paper, it can be concluded that technology does have a great impact in the field of architecture as seen with the implementation of BIM. Even though technology advances at a fast rate, the architectural field, along to engineering and construction fields, tend to adopt to the change in technology rather slowly as compared to other fields. They only accept the technology if it has been proved successful in their field, that is they are not risk takers. In addition to that, the new technology, like BIM, are not been taught to students at lower grades as well as in colleges. As they are taught the conventional software used, they tend to use the conventional software which is harder to use than BIM. BIM has a user friendly interface, makes the whole process of building and designing much easier and effective, but at the same time data compatibility, data ownership etc pose a threat to the complete implementation of BIM. In the near future, almost all of the traditional softwares used presently will be replaced by BIM.

REFERENCE


