4 EASY STEPS BIM IMPLEMENTATION

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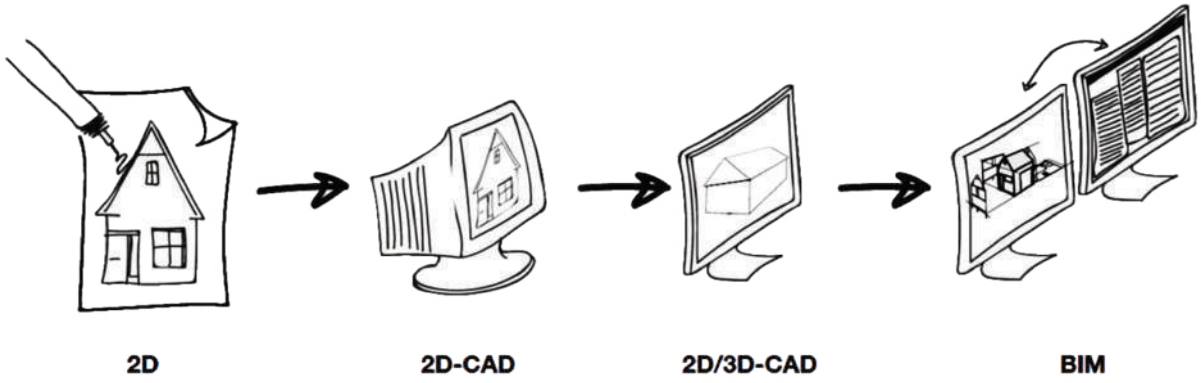
Things to do before

KEY TO SUCCESSFUL **BIM TRANSITION**

This eBook focuses on best practices for implementing building information modeling (BIM) solutions, explaining the key factors for successful implementation of BIM, the process and steps changes that can be expected as an organization, and the company-wide training required for adopting BIM environment.



"BIM still continues to be very much at the forefront of our professional consciousness. This is hardly surprising, since BIM has been universally acknowledged as a 'disruptive technology' for the AEC industry, much more than CAD or even computing ever was, and it is causing us all to rethink our processes and identities."

- Lachmi Khemlani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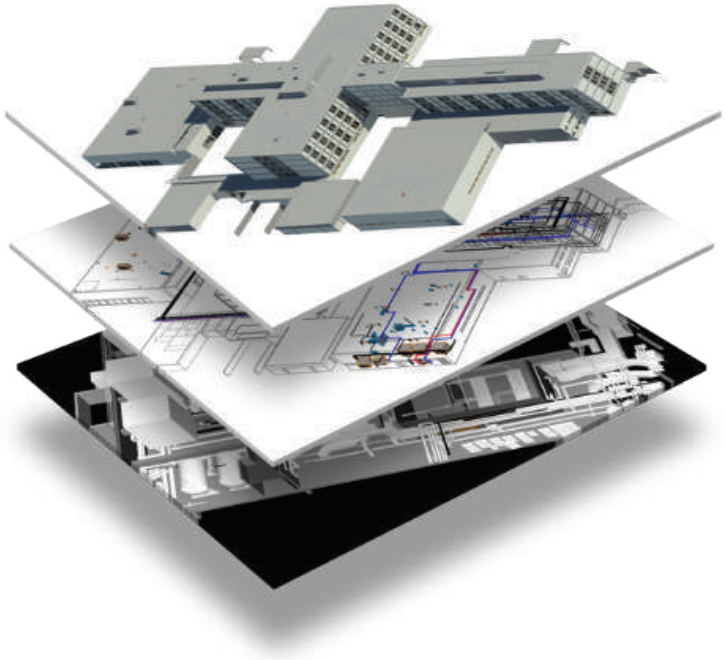
STEP 1

ADOPTING BIM ATTITUDE
IMPLEMENTATION METHODOLOGY



Purpose built solutions like BIM are designed with an intent to offer an intuitive, distinctive and powerful platform for engineers, architects, design building firms, general contractor and owners to visualize and create building designs. The parametric approach of BIM for modeling is considered as the real essence to construction designs but it also provides numerous groundbreaking ways for utilizing computers in design. Shifting the base to parametric building modeling is being considered a major change especially for the firms which prefer the use of technology in the best possible manner. To ensure a successful BIM implementation, formal implementation strategies must be implied and they should be extended beyond the rollout schedule and simple training. The strategies should be able to address organizational challenges and head on workflow which are in relation to BIM.

1. Acquire Stakeholders Support

It is implied that resistance to changes is true in terms of BIM solutions. Few of the biggest challenges which are being faced during the BIM implementation include apathetic stakeholders, teaming and standards of BIM which remain unclear. It is required that BIM stakeholders go through the process of change management which needs external assistance and at a point of time which can turn to

resilience to changes. BIM is considered to be a methodology which allows the integration of digital descriptions in relation to all building objects while considering their relationship with others in order to ensure that the stakeholders can simulate, query and estimate the results of activities during lifecycle process of the building project. Therefore it can be concluded that BIM gives the value judgment which is required for the creation of sustainable buildings meant to ensure the satisfaction of stakeholders. Hence it's suggested that the benefits in relation to BIM shall be conveyed to the stakeholders to assure support during the time of BIM Implementation.

2. Jot-Down the Objectives of BIM implementation

It is the responsibility of the Implementation team to jot down the plan for BIM implementation at the time of conceptualization. These steps and documentation highlighting the reasons for BIM implementation help the team to understand the strategies and plans behind the move, while they can even make decisions in regards to future changes. BIM should be able to bring in new efficiency in the business, but if the control is not exercised properly it may develop complex processes which may be less efficient than the present modes of working. Keeping in mind all the possible risks which may appear at each stage and by mitigating such risks one can keep the project on track.

3. Finalize Your Key Project Execution Team

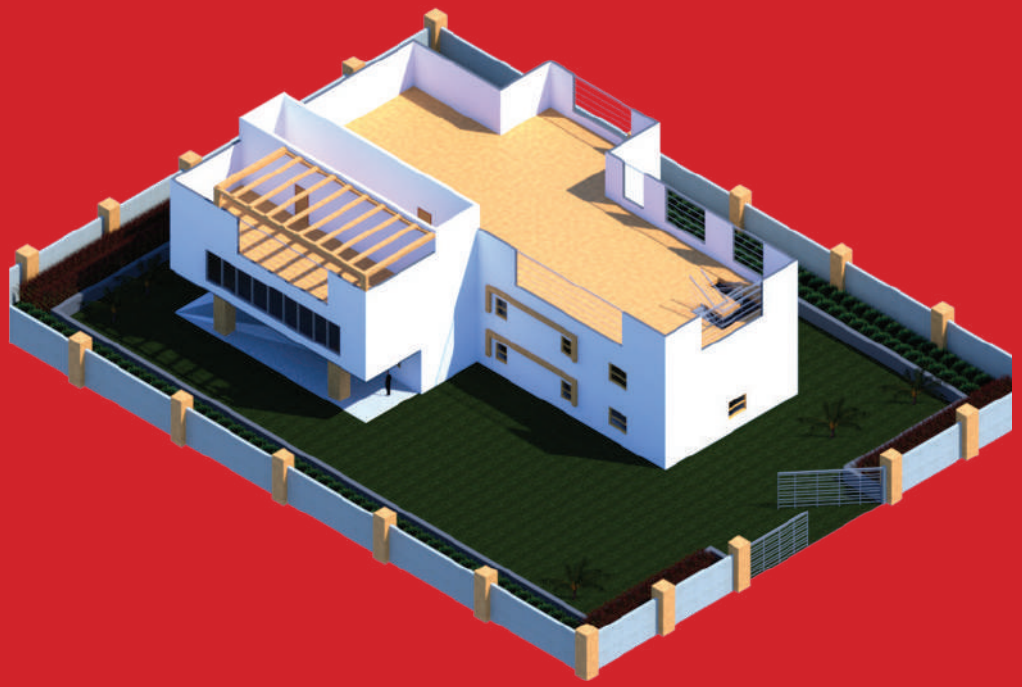
Unless you work for a small company it is not possible to do everything yourself. In most of the cases, steering groups are needed to look into the process and these groups consist of representatives

belonging to different business areas. Sharing the burden during set-up and including the representative group from the starting helps in ensuring that all the major areas of business are equipped properly with knowledge which may seem to be invaluable at the beginning but will pay in the years to follow. It is important to consider the proper construction of the team. Passionate specialist for BIM will be considered to be useful allies but it is necessary to ensure that there are enough contributors to the knowledge of the process in order to study the impact of any decision. There should the appraisal of the team members to ensure potential resistance. It is essential to encourage the "I can do it" attitude in order to avoid the defaults and delays in relation to status quo while problems arise and they may impact the scheme.

4. Frame and Deploy BIM Execution Plan

The success of any BIM project is completely dependent on the implementation of an effective BIM plan. The plans which are meant to facilitate the management about the implementation of BIM project as created as the plans designed by the suppliers in order to explain the ways in which information modeling aspects in regards to a project shall be carried. BEP is responsible for detailing the deliverables of the project which are stipulated by the contract and will also define the information requirements as stated in the protocol for BIM. The plans abbreviated as BXP or BIM are developed both before and after contract and are created as the direct response towards the EIR or Employer's Information Requirements.

> ***"Evolution of BIM implementation came in parallel with willingness to collaborate and share project information, the move toward integrated practice that is much talked about in the industry."***
>
> ***- Phillip G. Bernstein***



5. Select the Right BIM Implementation Partner

With the increasing use of BIM in all the phases of construction firms always look forward to identifying right BIM implementation partners who shall become the bench strength every time while managing the BIM implementation. BIM competency can be considered as a strategic advantage and it is not possible for all the BIM implementation providers to have an expertise in developing BIM workflow, standards, content and process.

It is required for BIM partners to acquire high-quality BIM knowledge in regards to each BIM discipline. Whether it is architecture, civil, structural, medical, and manufacturing or plumbing the BIM partners are required to have good knowledge on all the BIM disciplines with an expertise to the real world in regards to the core areas.


Mach
mit!

STEP 2

DEVELOP BIM PROJECT IMPLEMENTATION PROCESS

It may seem to be a daunting task to switch to BIM. The series of BIM Implementation is focused on providing a simple framework which may be helpful for you while getting started and implementing BIM in the organization.

It is necessary to have a structured and careful approach to ensure successful implementation of BIM practice. This structured approach considers the integrated components related to the business of the firm which starts with leadership and vision and extends to the individuals who shall be using BIM to accomplish their daily task in regards to the project.

1. Study Best Practices to Establish Organizational BIM Standards:

In the cases where the teams are working without guidelines and standards, everyone in the system prepares models in their own way which becomes a challenge while passing these models with the teams or mentioning them to the stakeholders. Most companies have their standards which had been pre-established

in terms of technology like AutoCAD, Autodesk, etc but these standards are required to be translated as per BIM guidelines.

By investing in new and updated protocols the organizations may witness positive results in terms of higher productivity, coordination with external partners and team members and also ensure high quality and consistent work performance.

2. Lay-down Your Methodology for the First Project:

It is important to reach BIM implementation is an individual project accessing its own rights. For all the projects to be successful ownership acts as a key and research phase is considered to be very crucial. With help of a few pieces of BIM research, one can finalize the scope of the BIM environment and also understand the manner in which it will affect the current working environment.

Most of the teams beginning with looking for the right technology but their decisions are affected by marketing leading features. By having a word with the ones who have trodden the road before you entered the market, will be more productive. These researches will help you figure out the impact of technology on workflow and the place from where the company can draw maximum benefits.

3. Finalize Your BIM Technology Platform:

It is very important to select and adopt the right BIM strategy. It is important to consider all BIM software's which are available online and then they should be evaluated in terms of BIM implementation goals. By means of comparison of these options in terms of their capability and compatibility, one can build BIM strategy prudentially.

It is required to select the BIM platform at the initial stage of

the project to address and find remedies to all related issues. The software platform must have the capability to support all file formats which are required to transfer the information. This process of upgrading or changing the version or platform must be discussed and implemented at the initial stage I order to avoid the interoperability issues at later stages.

4. Create BIM Content Libraries for Model Templates:

The designed objects shall no longer remain graphical; rather they will contain huge ranges of information. Having clear knowledge about the standards one can use it to format or collate the information from the very beginning and thus will avoid problems during the stage of a combination of data. It allows you to design according to business standards, using the model templates, parameter files or the shared library with content and these templates can be used throughout the organization.

The reference information about the project that includes workspaces, modeling families and database should be brought under consideration to assure that all the project parties are using consistent standards.

5. Migrate Your 2D Data into Your New BIM Application/Tool:

It is necessary to have a strategy in order to migrate the important 2D data to the new BIM platform. The strategic value related to a conversion of 2D files into BIM is done by using the legacy data sources which are necessary for creating BIM models.

Though the BIM platform has a quite different form of working as compared to the 2D application but still there remains some ways to configure BIM in order to replicate the interface standards in regards to 2D data. Controlling line weights for line works which are linked to the new BIM application and migration of 2D details in the BIM software should be considered seriously while 2D data is migrated.

6. Select a Pilot Project, Establish Scope and Schedule Requirements:

Pilot projects have been defined as one of the components which are the part of a well planned BIM implementation plan. The BIM implantation should get complete support from the business. BIM pilot project helps to measure the results of implementation and study the benefits which can be shared with the whole company at the later stage.

It doesn't matter how much the project weighs, be it multi disciple or single discipline it is necessary to define BIM implementation workflow which can give benefits in long run.

Use of published references and the guides for better implementation of BIM standards and practices is always considered to be a great start point.

To ensure successful implementation the organizations should have strategies to address the needs of business and business values. Having a relationship or bond with some trusted advisor, one who can give guidance about defining and executing the vision can is a stepping stone to the success of the BIM implementation.

In order to get maximum advantage of BIM, it is important to ensure that the executive leadership has the capability of positioning BIM into strategic objectives of the company in long run.

> ***Most firms begin their exploration of BIM doing comfortable 3D visualization and move systematically through more complex uses; the most advanced users integrate their project approach using BIM throughout the supply chain. Almost by definition, more advanced usage – such as analysis and production – requires collaboration throughout more of the project team.***
>
> ***- Phillip G. Bernstein***

STEP 3

IMPLEMENT **BIM PILOT PROJECT** IN 3 SIMPLE STEPS

For the successful implementation of the BIM project you require a structured and careful approach which considers the important components of the business of the firm which starts with leadership and vision which extends towards the individuals who may use BIM for the execution of various day to day projects. The pilot projects have been considered to be one of the components of well developed implementation plan for BIM.

Step I: Implementation of the learning

After performing the groundwork it is important to select a pilot project. The BIM probationers are taking various approaches

which shall include which may include completion of fictitious competition and projects or re-performing a running project for the purpose of comparison or it may also consider starting a new project for any client. They all are considered to be valid and are dependent on the acceptability level of manpower and risk which is required to perform the task.

- It includes measuring all the main stages which are necessary for understanding the ways in which BIM has been able to improve the construction and design process.
- The benefits to the stakeholders on each step should be documented as well for the calculation of ROI.
- It is suggested that on the first project the team should not work on any traditional 2D CAD based projects and also BIM projects at the same time as it may prove to be counterproductive in the path of learning about the new system.
- It is suggested to pick a client who may appreciate latest technology and also understands how BIM will support them.

Step II: If required improve the understanding of the product using advanced training

Implementation of the pilot project helps in gaining better understanding on the method of training which may be required by new people and also helps in understanding the requirement of advanced training for people already using BIM on daily basis. The shift to BIM requires highly positive support of the key staff and management especially in case of large organisation. It is also necessary to set the expectations at the beginning of the process which helps in creating the road map and also calculating the level of training for employees. By starting from initial and creating confidence and also by building the core capabilities the movement to BIM will help in accelerating during other projects.

Step III: Post Evaluation of the Project, Correction and Documentation of the BIM plan

For all the organizations which are considering the implementation of BIM, there is a crucial requirement to consistently and continuously evaluate and assess the transformational procedures. The organization undergoing the process should be in a condition to justify the amount of investment which shall be required. Secondly the organization should acquire the capabilities to assess the difference after transformation, evaluation of the quantitative productivity data and validation for the purpose of evaluation

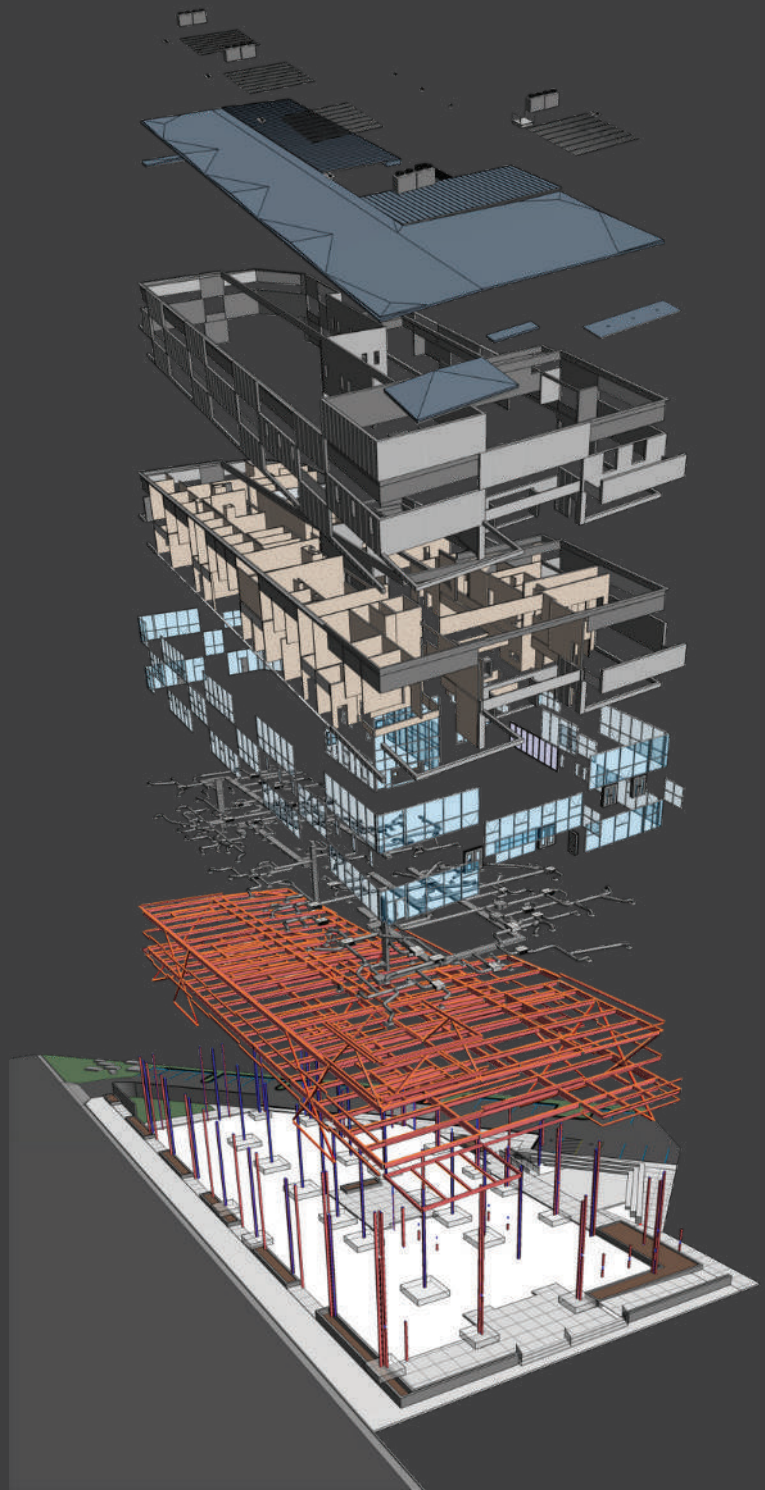
of the projects in future for understanding the difference in productivity. Once the team had been able to define the goals both from the perspective of the company and project then it can be possible to identify the BIM capabilities to be used on the project and till what level. It is also important to document all major obstacles addressed while executing the pilot project as they may come up in future as well.

During the pilot project there may occur certain situation where the parties feel overloaded with amount of work and also may feel that situation is moving out of hand. It is important for the BIM manager to strategically tackle the situation and keep his team motivated. The success of the pilot project is always the right example to motivate the colleagues and help them in moving towards the next step.

> ***"It's about understanding what your customer wants and providing your staff with an efficient way of creating it".***
>
> ***- Dave Wahl, Bergmann PC***

STEP 4

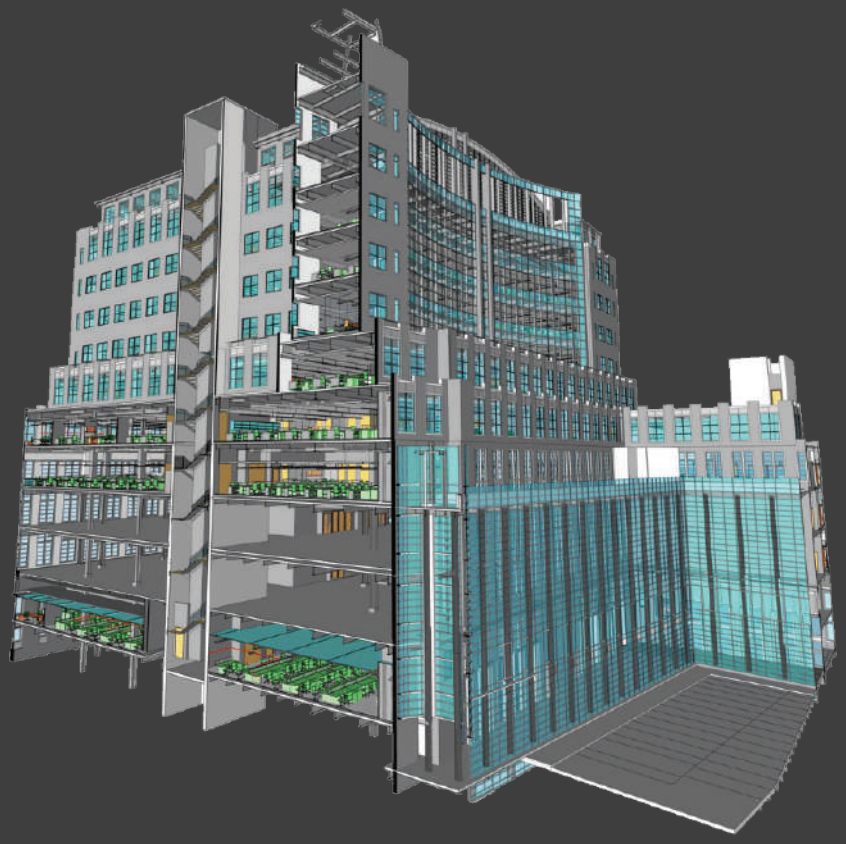
BIM PUT TO ACTION – EMBRACING BIM ENVIRONMENT



- **Pen-down lessons learned from the first implementation:**

It is very important for us to consider the learning's acquired through the implementation of BIM in the pilot project as they are a lot of them. While you are at the initial stage you aren't expected to do things in a perfect manner as the industry is still at the phase of understanding and applying new standards and technologies. By your learning, you will be able to understand that various aspects of BIM are quite important as compared to the others and it also necessary that their importance is realized because BIM is collaborative. BIM would not be able to perform without collaboration. BIM is in existence as

there are technology and an urge to bring improvement in the construction processes. It cannot be considered to be a decent handoff as in the case of CAD in which the consultant just look into the 2D view and convert it to halftones. REVIT models are allowed to have all kinds of weird display characters in the model



by the consultant who may finally generate hiccups.

- ## Establish corporate BIM standards:

It is very important to have standards around the company if there is no defined standards people will work in their own ways and this will make difficult for the management to pass the models within offices and teams. Especially the companies who have started using BIM recently it is suggested, by adopting any off shelf protocol in existence like AEC BIM protocol (aecuk.wordpress.com) or any other protocol which is about to set to action by UK based BIM task group (www.bimtaskgroup.org) will benefit the companies.

- ## Educate & re-educate your remaining staff to adopt and up skill for BIM environment:

It is important to conduct in-house BIM training within the company which is inclusive of workshops that lead to being open

"Training isn't something we have to do, it should be an integral part of what we do".

- Rande Robinson, North Carolina DOT

to all the employees and offers a different level of insight and the training ranges from BIM training for beginners to advanced training that is job specific.

Skilling the employees from different areas of business and not only targeting BIM professionals and designers will help the company in becoming the champions in terms of technology and also can help in developing the team of ambassadors for BIM to get engaged in the discussions that are based on the importance of BIM with the consultants, clients, and subcontractors.

Such an approach will help in streamlining processes at the initial stage while providing learning to the support staff on how to administrate the data environment and also how to manage site while ensuring they gain a better understanding of BIM in their field.

Less knowledge and a basic level of understanding have been considered as the general barrier of using BIM so while acting as the experts it is your responsibility to share the experience and also the lesson through the application of BIM. By taking such an approach one can expect the complete growth of the industry.

Author:

Dinesh Desai – a BIM Evangelist who earned a Diploma in electrical engineering from Polytechnic Engineering College - Ahmedabad, Gujarat. Dinesh holds an overall experience of 12 years within the construction industry and from last 8 years he is explicitly involved on BIM projects with renowned names in industry.

About Revit Modeling India:

Revit Modeling India (RMI) is a BIM technology specialist for AEC and Design/build industry. With years of practice and experience in Building information modeling, RMI offers BIM related solutions covering 3D BIM modeling, Clash detection, 4D scheduling and simulation up to 5D cost estimation services and Facilities Management. We are extensively using Revit as a BIM process supporting application and are profound with all methodologies and functionalities of Revit as a BIM tool.

Our consultative approach and customer first attitude has earned the company accolades from its customers and an impressive rate of customer retention. We have a strong team of 30+ BIM technology experts, who accompany great exposure in serving different industries on various projects such as Residential, Commercial, Educational, Healthcare, Hospitality, Workplaces and Retail. To learn more on our BIM solutions or for any question related to this white paper, write to our BIM Experts on **info@revitmodelingindia.com.**