

IMPORTANCE OF BIM FOR SRI LANKAN CONSTRUCTION INDUSTRY

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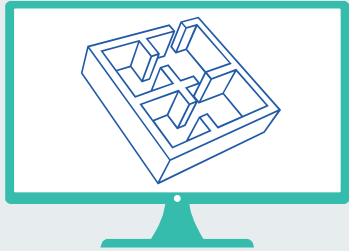
What is BIM ?

BIM which stands for *Building Information Modelling* is the process spanning the generation and management of the physical and functional information of a project. The output of the process are what we refer to as BIMs or building information models which are ultimately digital files that describe every aspect of the project and support decision-making throughout a project cycle.



Building Information Modeling (BIM)

A foundational, intelligent model-based process for business and industry transformation.



Uses 3D models to capture, explore, and maintain consistent and coordinated planning, design, construction, and operational data



Provides greater project insight for cost, schedule, and constructability



Uses and shares the same consistent data whether you're at your desk or in the field



Enables prompt response to change with processes that are smarter and faster



BIM is typically referred as *Project Information Model (PIM)* during design and construction which is then developed into an *Asset Information Model (AIM)* during operation.

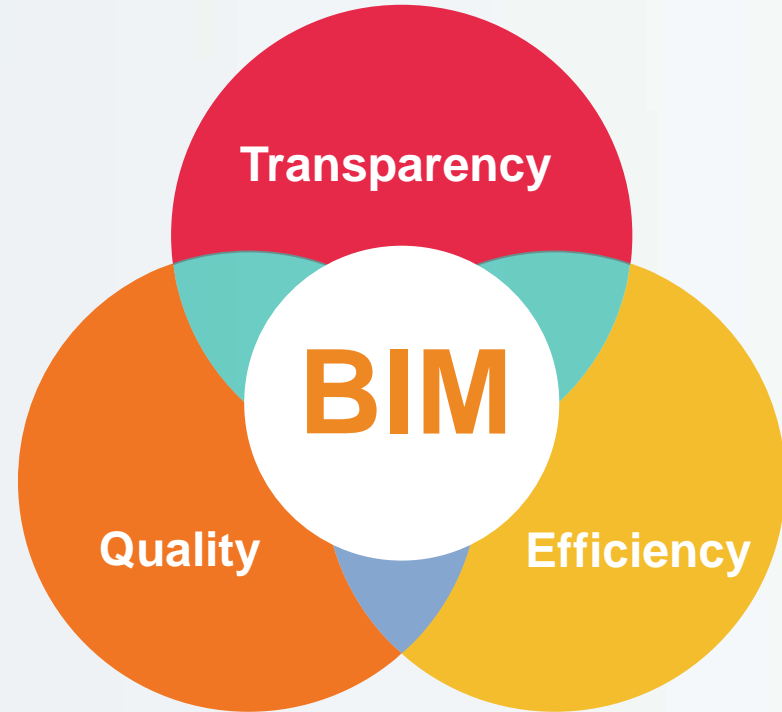
The asset information model may include information such as:

- Original design intent.
- Ownership.
- 3D models.
- Surveys
- Operational performance information.
- Costs.
- Remote monitoring information.
- Maintenance records.
- Work that has been carried out.
- Replacement dates.
- Rights and restrictions.



Using BIM, owners can:

- Improve building quality
- Significantly reduce building lifecycle costs.
- Better understand design projects from beginning to end.
- Optimize operational efficiencies
- Increase occupancy and use rates



How BIM saves owners' time and money throughout the building lifecycle



Design



Construction



Management



BIM Life-cycle

- Design
- Build
- Operate





BIM In Sri Lanka

BIM has not been adopted vastly in the Lankan Construction Industry and not many in the industry know about it (Jayasena.H.S, Weddikkara.C; 2012). With the vast development, foreign investments and large scale projects BIM has paved its way in to the Sri Lankan Construction industry.

The industry needs to understand its potentials in order to develop strategies for BIM integration.

BIM has a great potential for integration into construction projects life cycle which will lead to pave the way towards becoming the industry standards for construction projects.



BIM IN PRACTICE

A few number of projects have been implemented in BIM at Level 2.

- 3D Models

- Clash detection

Real success and benefits are not yet known

5D BIM with automated quantities not reported to date.



BIM EDUCATION IN SRILANKA

- Almost all degree programmes now introduce BIM as a module
- Majority of degree programmes include training on 5D BIM enabled software
- Short courses on BIM modelling has become popular among young Qs



Perception of BIM

Some negative perceptions on Design aspects

- BIM adoption is a huge task requiring restructuring of workflow and design process
- BIM will prescribe and overturn the way of designing
- Allowing others to access and edit the designers model increases design liability risk



Perception of BIM

Some negative perceptions in general

1. Various levels of project stakeholders may not have direct access to the BIM
2. Practical standards and guidelines for BIM are not well developed
3. BIM is not yet possible since the Sri Lankan government is yet to support its adoption



BIM AWARENESS

Significant interest is evident

Many research being carried out at undergraduate and postgraduate level on following topics

1. Technological perspectives
2. Social perspectives
3. Legal perspectives

No dedicated body to support BIM in Sri Lanka



BIM AND IQSSL (INSTITUTE OF QUANTITY SURVEYORS SRI-LANKA

Actively promote BIM among members and allied professionals.

- BIM Symposium
- Technical Sessions
- CPD Sessions





Institute of Quantity Surveyors Sri Lanka

BIM SYMPOSIUM

2017







Advantages of Adopting BIM for Sri Lanka

- Ultimate Collaboration and coordination
- Reduces Rework.
- Better visualization
- Improves Productivity.
- Cost-effective
- Reduced Error
- Supports energy efficiency
- Reduces Conflicts and Changes During Construction



Benefits of BIM Per Profession

Architects/Quantity Surveyors

The evolution of BIM started with architects, and many still see its value emerging from its use in the design phases. Most in the design community, along with many quantity surveyors and contractors (43%) and owners (41%), say that for both professions that i s architects and QSS experience a high level of value.

Structural Engineers

Nearly half of all users recognized, that structural engineers can garner a high level of value from BIM. Such elements as steel columns, beams and trusses are frequently modelled by users.

Benefits of BIM Per Profession

Construction managers & General Contractors

Money is largely spent and saved during construction. Reducing rework can help keep budgets in line. Owners are the most likely (57%) to see a CM or GC gaining high value on a project, most likely because that savings could be passed on.

MEP Engineers

There is a range of opportunities for MEP Engineers to use BIM. Modelling larger elements such as duct systems and air handlers are approachable options, while smaller elements such as electrical switches and outlets might prove more challenging. Notably, very few engineers (22%) collectively see MEP engineers reaping high value.



Conclusions

- BIM is still in its infancy stage
- There is increase interest among construction industry personnel such as quantity surveyors and Architects
- Cost of software is very prohibitive to the construction companies
- Few Chinese companies use BIM in their projects

BIM Recommendations

- BIM should be formally introduced in all academic programs consciously
- Training should be given to professionals and academics
- There should be Masters and PHD programs introduced in the universities - in collaboration with foreign institutes, may be with a approved scholarship program
- Exchange programs for undergraduates as well as post graduates and academics must be introduced in partnership with foreign universities
- Professional institutions such as IQSSL , SLIA RICS should consciously promote BIM in their industry practices
- The institutions should negotiate with soft ware service providers a better terms for industry practices since there is a monopoly on these soft ware programs



RECCOMENDATIONS Contd.,

The Professional institutions with the help of foreign institutions lobby the government , the university grant commission (UGC) for better support for BIM programs

The professional institutions should implement public symposiums to make the government , the politicians as well as the private sector the importance of BIM and its applications





Thank you

