

High-level introduction and summary of the SFT BIM Return on Investment (ROI) Tool

Introduction

The Scottish Futures Trust (SFT) lead the Scottish Building Information Modelling (BIM) programme at a national level on behalf of the Scottish Government; it has developed a suite of tools and guidance on its BIM Portal

<https://bimportal.scottishfuturestrust.org.uk/>.

The portal and associated tools were developed to help public-sector organisations deliver on the requirements of the Scottish BIM policy and can be used to support the implementation of the UK BIM Framework:

<https://www.gov.scot/publications/implementation-of-building-information-modelling-within-construction-projects-sspn-012017/>.

The BIM Return on Investment (ROI) Tool, also known as the calculator, is one of the key tools in enabling the Scottish BIM policy.

The BIM ROI Tool can be accessed at:

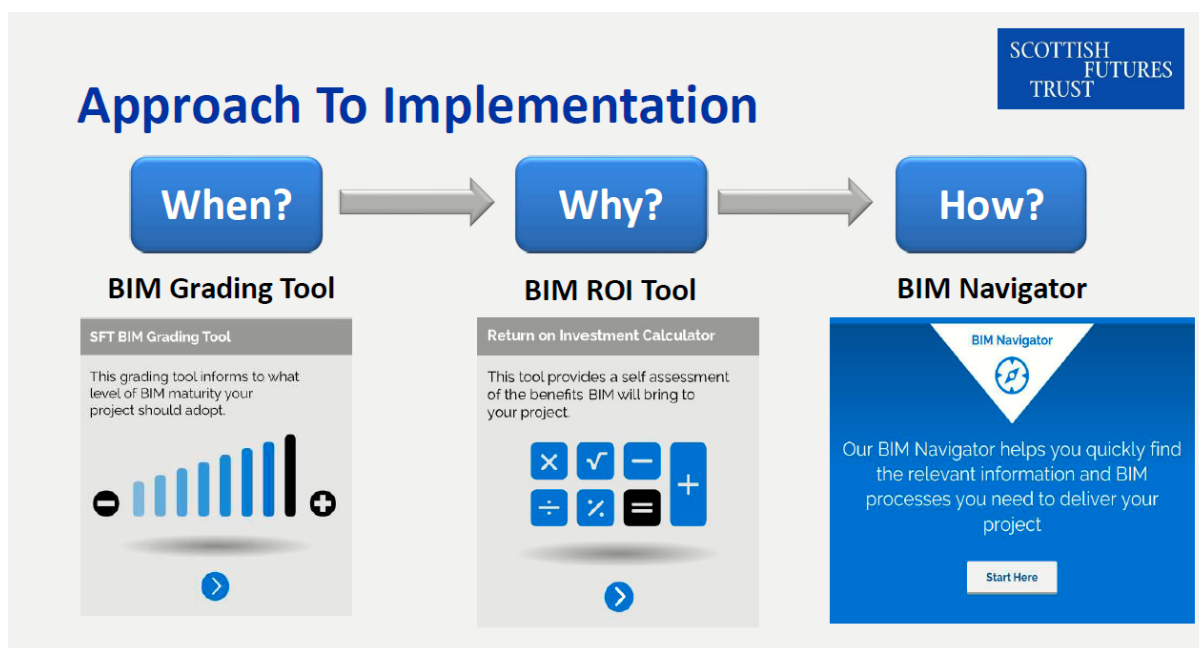
<https://bimportal.scottishfuturestrust.org.uk/page/roi-calculator>

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Background to the BIM ROI Tool

The Scottish Futures Trust (SFT) has developed a BIM Grading Tool, BIM Return on Investment (ROI) Tool and Guidance Portal to support decision making about the implementation of BIM on projects, as illustrated below.

The ROI Tool can be used to determine the qualitative and quantitative benefits of delivering a project using the UK BIM Framework. The language of the ROI Tool reflects the Scottish BIM policy, and have not been yet been updated to reflect the terminology of the UK BIM Framework and ISO 19650 suite of standards.



What is the SFT ROI Tool?

The SFT BIM ROI Tool is an open, online calculator that estimates the benefits and level of return that the adoption of BIM is likely to bring to a project.

The tool supports the procurer/client (appointing party) in assessing the benefits of adopting BIM against a predefined list of benefits. The tool provides both a quantitative and qualitative assessment, and this is reported within an easy-to-understand dashboard.

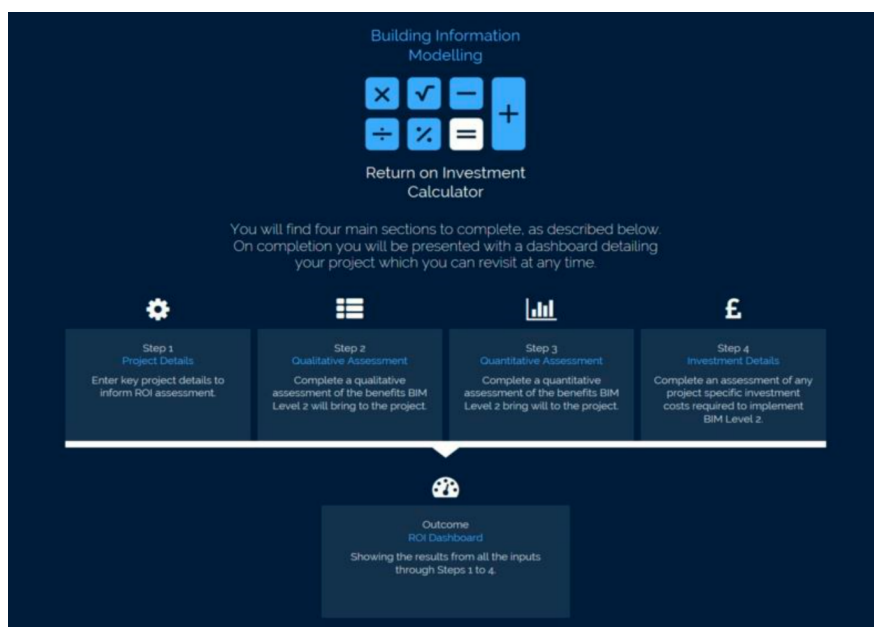
The nature of the tool is self-assessment, and is best undertaken by an appointing party, such as a client team, during the early stages of their business case, to help:

- Set their strategic goals and objectives for using BIM on the project;
- Examine the potential benefits of BIM on their project;
- Determine the investments they may have to make to unlock the benefits.

While it is open, users need to register for the ROI section of the site, and by default their investment study is locked down unless they wish to share it with others later.

It is worth noting that the ROI is aimed mainly at vertical investments such as building projects, as a few of the calculations are based upon gross internal floor areas.

The four key stages of the ROI Tool are summarised in the illustration below.

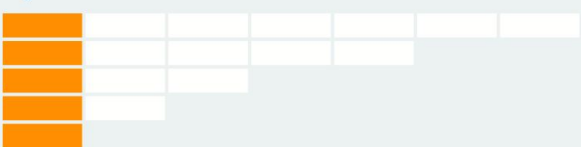


Firstly, it is worth noting that the BIM ROI Tool is based on considerable research, supported by an academic partner that examined BIM, digital working and best practice on many projects across Scotland to determine real and potentially repeatable benefits. The SFT has a host of BIM and digital case studies that underpin the ROI calculations, which can be found at:
<https://bimportal.scottishfuturetrust.org.uk/page/bim-case-studies>.

The first stage in the ROI process is establishing key project details, which help to inform the ROI assessment. These include construction value, programme, fees, preliminaries, tender price inflation and gross internal floor area.

Second, users work their way through a plan of works examining the qualitative impact of implementing BIM against their current ways of working. Each stage has a set of predetermined questions to help prompt an appropriate level of impact, as illustrated in the diagram below.

Qualitative Benefits of BIM Level 2
 Stage 1: Brief



Please score the impact of implementing BIM Level 2 against your current ways of working.

| BIM Level 2 will offer and support ... | Impact of implementing BIM Level 2 | | | | |
|--|------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 0 Strongly disagree | 1 Disagree | 2 No impact | 3 Agree | 4 Strongly agree |
| Better briefing through access to lessons learned data and post occupancy evaluation from previous BIM projects. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Better data driven business decisions early within the project. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Better outcomes through early collaboration and input from operational & facilities management teams. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Ability for rapid data capture through laser scanning of retained estate projects. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Improved efficiencies through consistent and structured digital information from the outset of the project. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Better communication through online/electronic object-based data. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Improved security in the management of an assets digital data. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Improved early definition of data requirements during the asset lifecycle. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Procuring only the right amount of information at the right time and buying it once. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

The third stage shifts towards a quantitative assessment against predetermined benefits, which are tested in terms of a BIM position versus a non-BIM base position.

The tool illustrates the calculation methodology, and the user can determine a weighting in relation to the likelihood that the benefit will be realised in the project. Each potential benefit criterion is evidenced by a suite of relevant case studies. In addition to the case studies, the SFT sought the view of practitioners, by means of a survey, to test the assumptions within the tool. These can be found at:
<https://bimroi.scottishfuturetrust.org.uk/storage/uploads/roisurveyanalysisjun17.pdf>

Additionally, users can also input their own additional quantitative benefits tailored to their project.

The final assessment then turns to the potential areas of investment that an appointing party (in this case, the client) may need to make to unlock the benefits in the earlier stages. The rationale is that by doing this assessment at the business case stage, these may be added into the capital cost planning budget.

Investment considerations range from common data environments to information management services and operational software, among others. Assumed costs are given, but these can be overridden and spread across other projects.

Finally, a dashboard is automatically generated, based on the assessment, which is presented in different ways, from an overall position to stage by stage, as illustrated below.



The completed project assessment can be saved for future editing or downloaded, and a detailed cost breakdown can be generated or shared with others.

Use by other home nations and organisations

The SFT ROI Tool is unique in nature and offers real value to clients and other appointing party organisations across the home nations. Value is achieved by embedding BIM within their business cases and understanding what investment they need to consider and the likely value that will result at each stage.

The tool is freely accessible following registration and should be considered in any appointing party project workflow where information management using BIM is to be adopted.

While the SFT ROI Tool was originally designed to support BIM Level 2 projects, it can equally be applied to UK BIM Framework projects without any adaption.