BIM User Guide

SAPPHIRE PLUS
suppression systems

BIM Available

Johnson Controls

SAPPHIRE PLUS is BIM ready

Supporting digital modelling to enable the construction industry to design gaseous suppression systems with greater clarity, more foresight and build with greater accuracy using exact requirements, offering a wide selection of BIM objects that are free to download from our website.

At Johnson Controls we understand the benefits of using BIM when undertaking a new building construction project. From building design through to construction and even while the building is in use, the BIM process allows valuable information about our products to be shared with planners, consultants, integrators and contractors.

This means that everyone involved in the construction and commissioning of a new project is able to share information more easily and drill down into design specifications at any stage of a project allowing for collaboration with greater efficiency.

What is BIM?

BIM is the future of the construction industry. It encompasses all project phases, from planning, design and construction through to operation, maintenance and ultimately demolition.

BIM is about everyone understanding a building through the use of a digital model. BIM modelling provides a process for managing the information produced during a construction project to ensure a consistent format of information about every product from the earliest feasibility stage through design, construction, operation and finally demolition.

BIM allows all information about building materials and systems used within a building to be shared at each stage of the building's lifecycle.

Since January 2016 it has become a mandatory requirement in the UK for all public building construction projects to supply BIM objects for all products used.

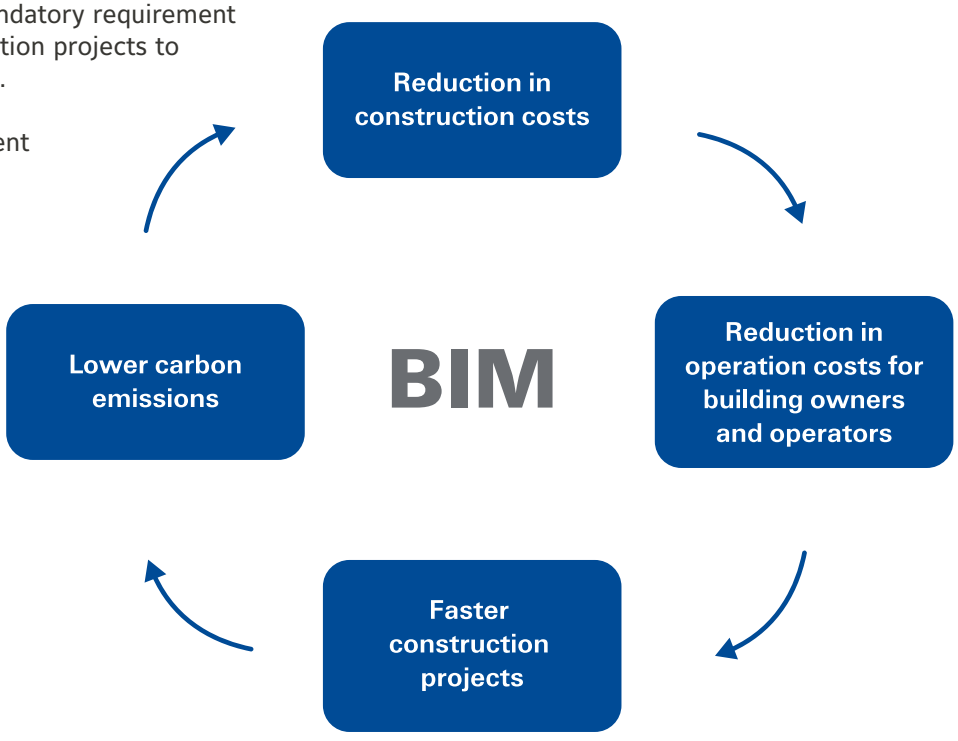
This is part of a long term UK Government Construction Strategy to achieve the following by 2025:

33% reduction in construction costs

33% reduction in operation costs

50% faster construction projects

50% lower carbon emissions



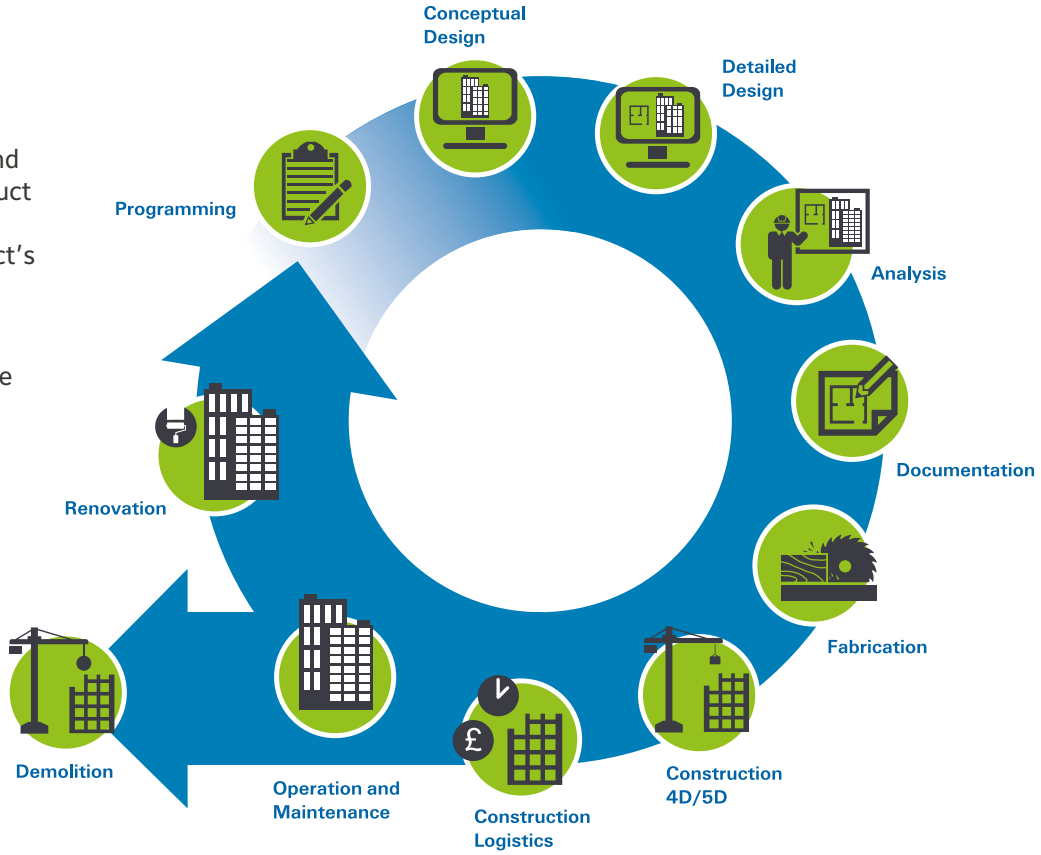
Reference: National BIM Library
www.nationalbimlibrary.com

What are BIM objects?

BIM objects are 3D models of construction materials, products and equipment which contain key product data. Each object holds detailed information that defines the product's physical characteristics, materials and properties.

The visualisation data that gives the object a recognisable appearance and behavioural data.

Each BIM object contains all the information that construction professionals need to design, construct and maintain that building.



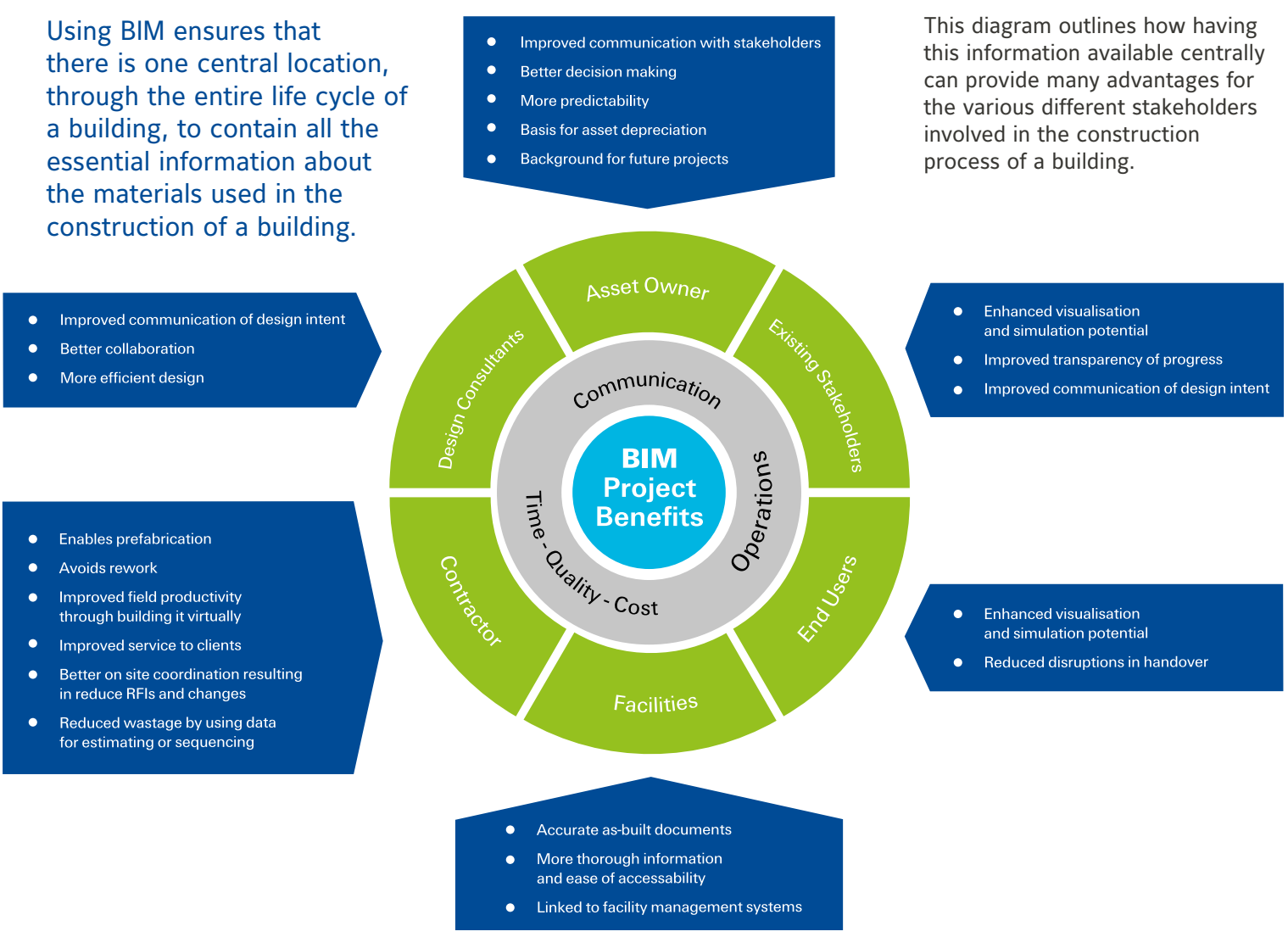
References:

RIBA Insight to BIM
www.riba-insight.com/monthlyBriefing/11-08/BIM_what-is-it-and-how-does-it-affect-you.asp

National BIM Library www.nationalbimlibrary.com

Using BIM ensures that there is one central location, through the entire life cycle of a building, to contain all the essential information about the materials used in the construction of a building.

This diagram outlines how having this information available centrally can provide many advantages for the various different stakeholders involved in the construction process of a building.



Why BIM?

The use of BIM can increase efficiency and reduce errors. Virtual designs are built in three dimensions before work proceeds on site; the attributes of all the elements of the building can be found in the model, and spatial 'clashes' can be identified and resolved in the model instead of on site.

Imagine the power of the models in the field or in the hands of the end users, where others can use the information the designer input to troubleshoot or manage their systems more efficiently.

With this improvement in efficiency in mind, we have invested in the creation of a range of BIM content based on a selection of our core products for use by designers, architects and specifiers working within the BIM framework.

BIM allows designers to create intelligent environments that enable all users to have instant access to all of the information available in the model. Therefore, the ultimate limitation of BIM is the amount of information available in the model and input by the manufacturer. If a user selects a specific component of the system, the model can provide make, model, serial number, cost, and all relevant specifications of the system component. It can even include operation and maintenance information relative to the system component.

In large and/or fully integrated buildings, building engineers often review events on the building management system (BMS) for mechanical, electrical, and plumbing issues as a first order troubleshooting measure. Smaller buildings and buildings without integrated systems do not afford building engineers this luxury. When it comes to fire protection systems, the BMS may not integrate with them, however, a well-coordinated BIM can be the single source for building engineers to troubleshoot and evaluate all systems within their buildings.

References:

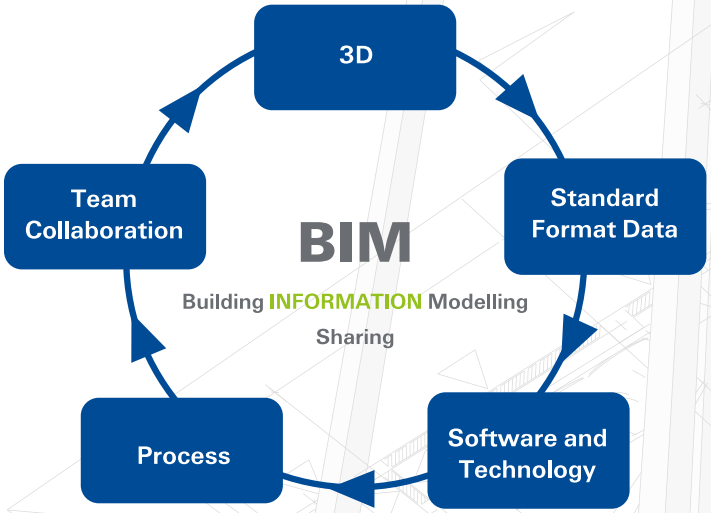
National BIM Library www.nationalbimlibrary.com

Fire Protection Engineering
http://magazine.sfpe.org/fire-protection-design/building-information-modeling-fire-protection

Trust a good BIM

A BIM model that is set up well and monitored continually will have coordinated, integrated, and searchable databases of information. A BIM model becomes not just a 3D model of the building to search for fire protection equipment or features, it becomes a database of information that can be used to identify trends, estimate repair costs, or monitor functionality. BIM can also help with integrating life safety systems across multiple trades.

Within the fire industry, designers, engineers, and authorities having jurisdiction will find BIM invaluable as manufacturers include all listings and restrictions for their specific fire protection products.



Working within the BIM framework provides three main functions:

1 A consistent naming convention

Manufacturers must present product information within the BIM file in a structured manner. BIM objects enable designers to use files more effectively within their own software such as AutoDesk's Revit.

2 A digital central location to store and manipulate all information about a project

New construction projects involve the use of three dimensional images to represent the different components within a building. Essentially BIM provides a digital representation of this information along with detailed technical information about the products within.

3 An improved, accurate method of sharing and exchanging information about the building

Traditionally, stakeholders on a construction project would refer to drawings, schedules, manuals and technical data sheets for information during the project. Using BIM will eliminate the need for multiple documents, everyone involved can access what they need form the BIM files themselves.

Reference:

Consulting Specifying Engineering
www.csemag.com/single-article/bim-and-fire-protection-engineering/22fcd71622fbf3046ca5d9908d46fddc.html

References and Useful Links

National BIM Library
www.nationalbimlibrary.com

European Commission
www.construction21.org/articles/fr/european-bim-or-europe-of-bim.html

RIBA Insight to BIM
www.riba-insight.com/monthlyBriefing/11-08/BIM_what-is-it-and-how-does-it-affect-you.asp

Fire Protection Engineering
http://magazine.sfpe.org/fire-protection-design/building-information-modeling-fire-protection

Consulting Specifying Engineering
www.csemag.com/single-article/bim-and-fire-protection-engineering/22fcd71622fbf3046ca5d9908d46fddc.html

UK Gov website
www.bimtaskgroup.org

UK Task Group FAQ section
www.bimtaskgroup.org/bim-faqs

To access BIM files please visit **www.SapphirePlus.com**

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