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Review Article

The role of building information modeling (BIM) in delivering the sustainable building value

Moshood Olawale Fadeyi^{*}

Sustainable Infrastructure Engineering (Building Services) Programme, Singapore Institute of Technology, 10, Dover Drive, Singapore 138683, Singapore
 Received 18 November 2016; received in revised form 18 July 2017; accepted 30 August 2017

Abstract

The value of a sustainable building is the quality of building performance delivered to solve problems of consumers – developers, owners, and building users – within the constraints of time and cost of resources used to deliver the quality. The delivery of functional, environmentally responsible and liveable, maintainable and easy to operate, safe and secure building will solve consumers' problems. The difficulty of delivering the required sustainable building value to consumers is due to several building delivery professionals working in silos – fragmentation. This paper discusses the role of building information modeling (BIM) in reducing the fragmentation among professionals at each and across building delivery stages using evidences from the literature. It is evident from the literature that BIM provides a virtual repository that allows easy access to and sharing of information and knowledge in real time. Thus, BIM provides a platform for professionals to work in an integrated environment at any stage of the building delivery process. However, the maximization of the benefits BIM provides through the virtual repository depends on the contracting method adopted for the building delivery. The identification of knowledge gained and gap from the literature led to suggestion of future research direction needed to improve the delivery of sustainable building value to the consumers.

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Keywords: Building information management; Process management; Sustainable building; Construction productivity; Construction management

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^{*} Corresponding author. Fax: +65 6592 1190.

E-mail address: fadeyi.moshood@singaporetech.edu.sg

Peer review under responsibility of The Gulf Organisation for Research and Development.

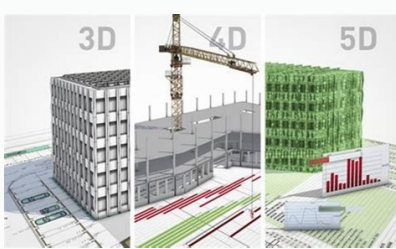
<https://doi.org/10.1016/j.ijbe.2017.08.001>

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Building Cost Calculator
March 2016

Item	Unit	Cost / Unit
Preparation		
Light/Nil Vegetation	400m ²	\$5,000.00
Dense Vegetation & Tree Removal	400m ²	\$10,000.00
Demolition		
Weatherboard/Brick Veneer House	house	\$20,000.00
Asbestos Cement House	house	\$30,000.00
Dwelling		
Basic Project Home - Brick Veneer - 1 Storey	m ²	\$850.00
Standard Project Home - Brick Veneer/Weatherboard - 1 & 2 Storey	m ²	\$900.00
Premium Project Home - Brick & Brick Veneer - 1 & 2 Storey	m ²	\$1,150.00
Basic Owner-Builder Home - 1 Storey - Clad Walls	m ²	\$1,150.00
Standard Owner-Builder Home - Brick Veneer/Weatherboard - 1 & 2 Storey	m ²	\$1,150.00
Speculative Project Home by Speculative Builder	m ²	\$1,200.00
Architectural Design Home - 1 Storey and < 400m ²	m ²	\$2,000.00
Architectural Design Home - 2 Storey or > 400 m ²	m ²	\$2,000.00
Dual Occupancy and secondary Dwellings - 1 & 2 Storey	m ²	\$1,250.00
Ground Floor Extension - concrete floor weatherboard/similar clad flat roof	m ²	\$1,000.00
Ground Floor Extension - concrete floor weatherboard clad pitched roof	m ²	\$1,100.00
Ground Floor Extension - concrete floor brick veneer flat roof	m ²	\$1,150.00
Ground Floor Extension - concrete floor brick veneer pitched roof	m ²	\$1,200.00
Ground Floor Extension - timber floor weatherboard/similar clad flat roof	m ²	\$1,100.00
Ground Floor Extension - timber floor weatherboard clad pitched roof	m ²	\$1,200.00
Ground Floor Extension - timber floor brick veneer flat roof	m ²	\$1,250.00
Ground Floor Extension - timber floor brick veneer pitched roof	m ²	\$1,300.00
1st Floor Additions	m ²	\$1,450.00
New/Refurbish Kitchen	each	\$20,000.00
New/Refurbish Bathroom	each	\$15,000.00
New/Refurbish En-suite	each	\$11,000.00
New/Refurbish Laundry	each	\$7,000.00
Deck/Balcony/Verandah/Pergola		
Unroofed - concrete	m ²	\$475.00
Unroofed - timber	m ²	\$450.00
Roofed - concrete	m ²	\$750.00
Roofed - timber	m ²	\$700.00
Pergola - unroofed	m ²	\$300.00
Asealing		
Pre-fabricated flat roof metal frame	m ²	\$170.00
Pre-fabricated pitched roof metal frame	m ²	\$500.00
Timber frame	m ²	\$270.00





BUILDING COST INFORMATION CENTRE (BCIC)
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North America's most trusted construction costs for more than 80 years. © 2022. All Rights Reserved. Stock Photo: Cover May Be Different Report a problem on this page Is something not working? Is there information outdated? Can't find what you're looking for? Please contact us and let us know how we can help you. Privacy notice Date modified: 2022-08-09 © 1996-2014, Amazon.com, Inc. or its affiliates Labor, equipment and material data updated to reflect price changes Gordian, the leading provider of data, software and expertise from planning and design through construction to operations, announced today availability of 2017 RSMMeans Cost Data series for facility construction, maintenance and renovation. New for the 2017 RSMMeans Cost Data series and the more than 77,000 updated line items are factors to help determine the cost implications of passing through security checkpoints, like Transportation Security Administration checkpoints and others. The Project Costs section — costs per square foot for conceptual estimating — familiar to long time customers, has been reintroduced and enhanced in the newest editions. Gordian has released a video that details the top five changes to the 2017 data, and will host a webinar for an in-depth explanation of changes to the 2017 data and the factors driving those changes. A comparison of the RSMMeans 2017 data with last year's reveals why it is critical for construction and maintenance projects to be based on the most recent data available. Costs for 80% of the Unit Cost Line Items which include materials, labor and equipment have changed at least 5% since 2016. Also since 2016, 21% of the unit line item material costs have changed by 5% or more. "Estimates for facility maintenance, renovation or construction are only as good as the data used to create them," said William Pollak, CEO. "Facility owners, architects, contractors and engineers will use the 2017 RSMMeans Cost Data series because they know they contain the most recent and accurate data." "The 2017 Cost Data shows that 90% of the materials in the categories of PVC Pipe, Ready Mix Concrete, Steel Decking, and Pipe Insulation, have changed by 5% or more," said Bob Mewis, Gordian's Director of Engineering. "Gordian's customers expect accurate and robust data and we deliver." RSMMeans 2017 Cost Data Series are available now at RSMMeans.com or by calling 800-334-3509. Click here to watch the video and register for the webinar on Dec. 7, 2016.

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