

CitA

BIM GATHERING 2019



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for Irish Construction



What is a BIM design model?

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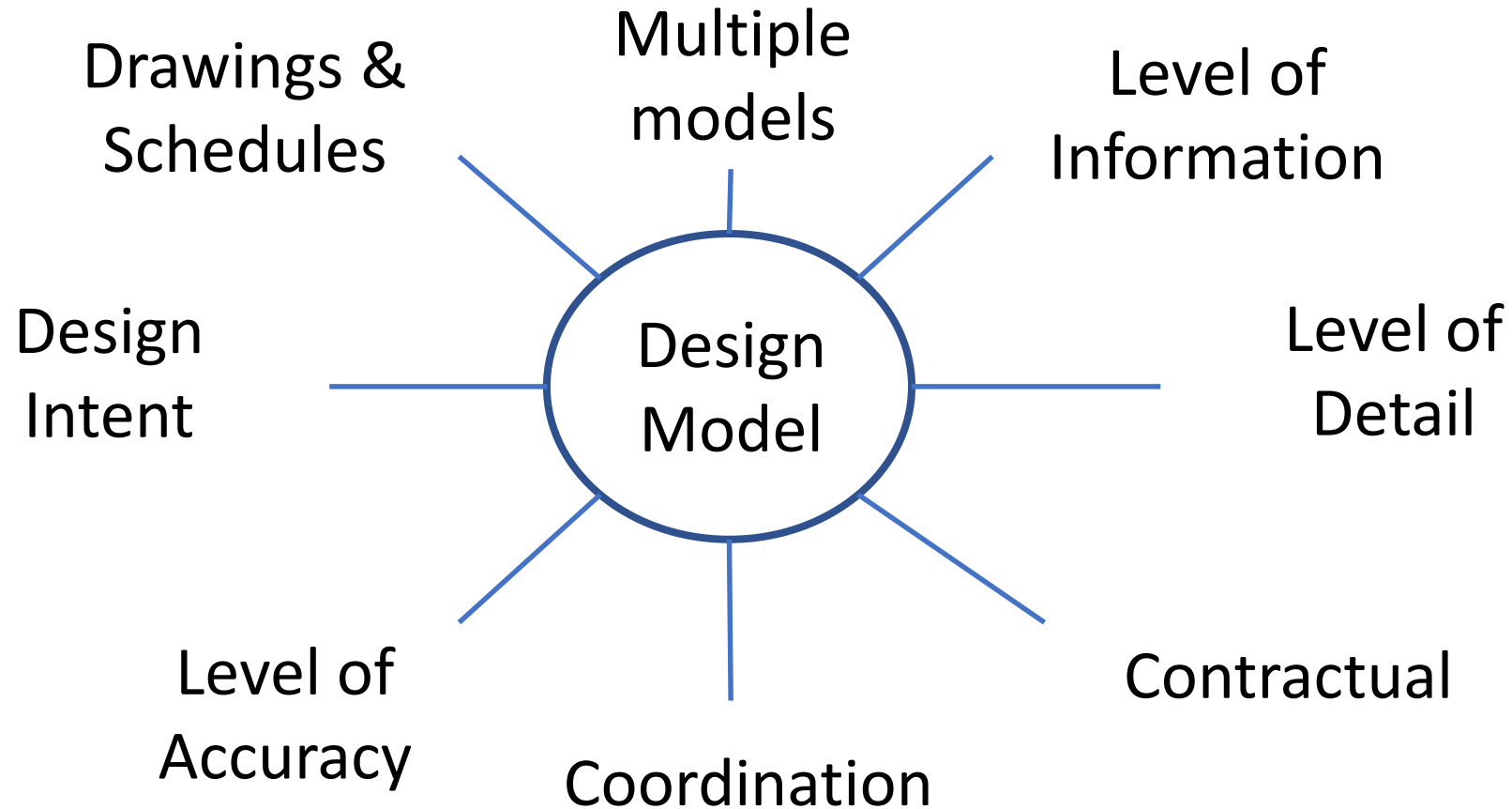


What is a BIM design model?

An investigation into how a BIM design model
is perceived from different AEC stakeholders



“A dimensionally correct and
spatially co-ordinated model ...”





PAS 1192-2:2013

Lean

**No definitive
definition**

ISO 19650-2: 2018

**Effective
&
efficient**



Literature Review

On Line Survey

Follow up interviews



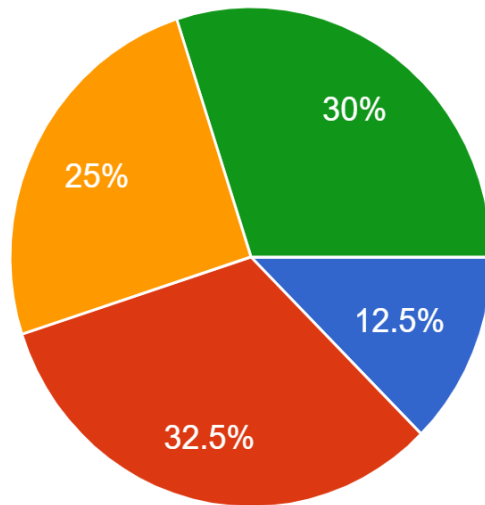
Online survey

33 different definitions of the BIM design model



Discipline

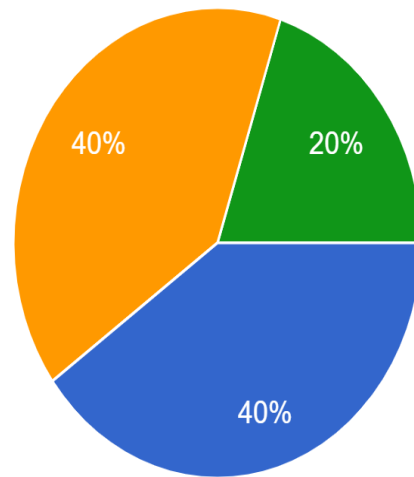
40 responses



- Client / Client Representative / Legal
- Design Team (Arch, Eng, Q.S., etc.)
- BIM Consultant / Advisor
- Contractor / Sub-contractor
- Manufacturer / Supplier



Do you fully understand BIM terminology?

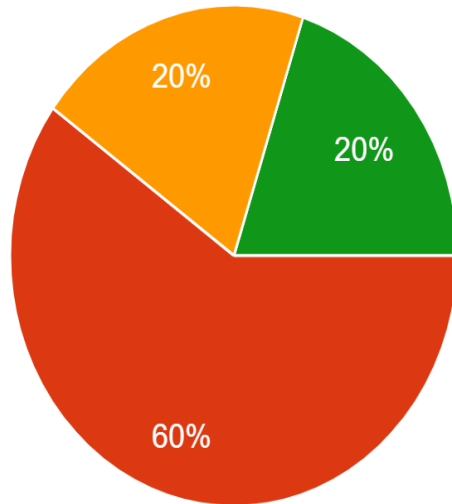


- Yes
- No
- Some Terminology
- Yes, the published work. However, people tend to make up their own terminology, which gets confusing. Say "BIM Coordinator" - this is not in any of the published documents.

Client's response



Would you say PAS 1192-2 adequately defines the Design Intent Model?

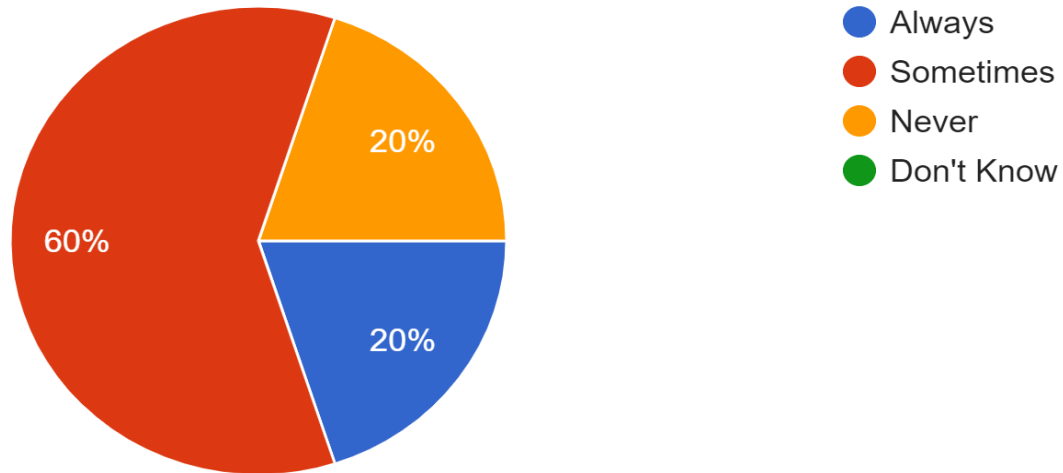


- Yes
- No
- Don't Know
- Please see ISO 19650. The PAS is now being phased out.

Client's response



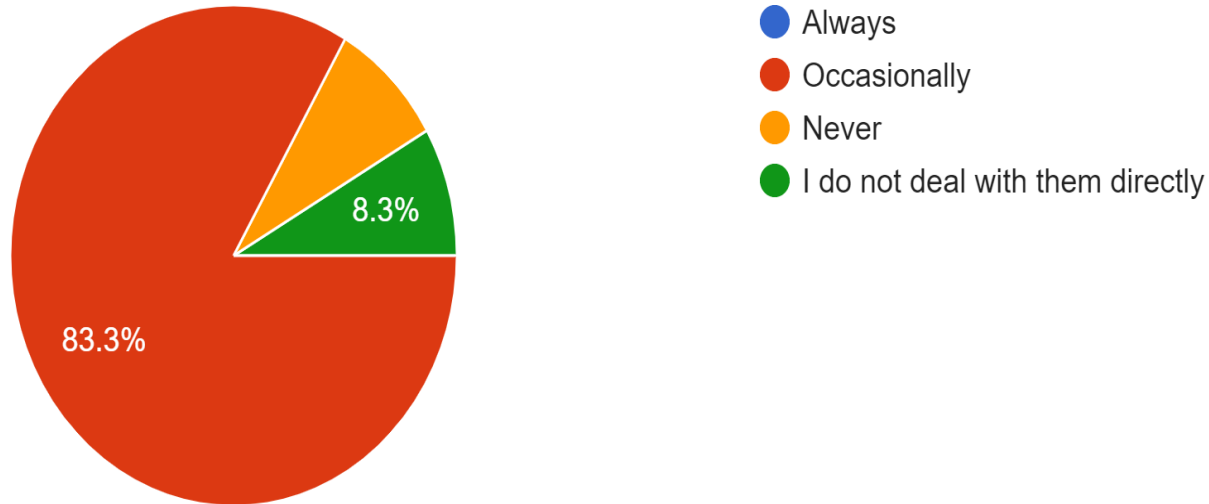
How often do the Design Team and General Contractor disagree on BIM terminology?



Client's response



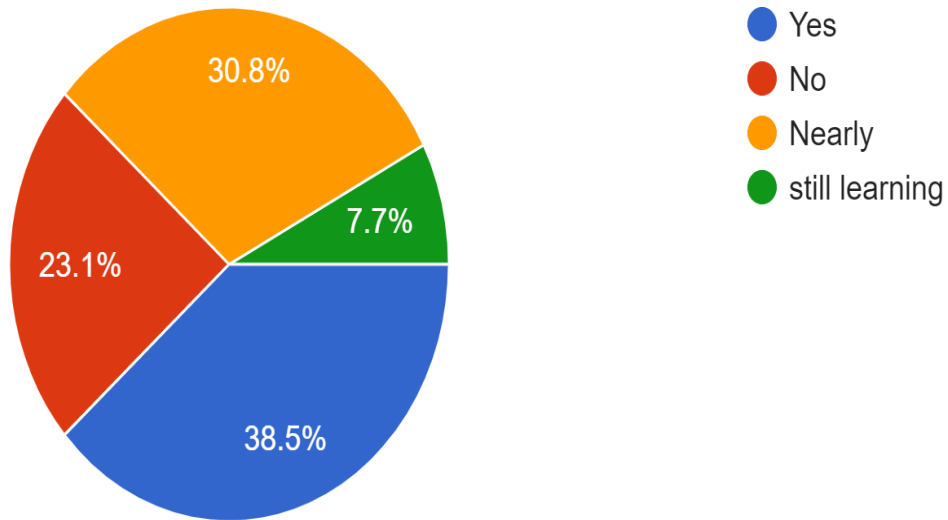
Do you ever disagree with the contractor on BIM terminology?



Design Teams' response



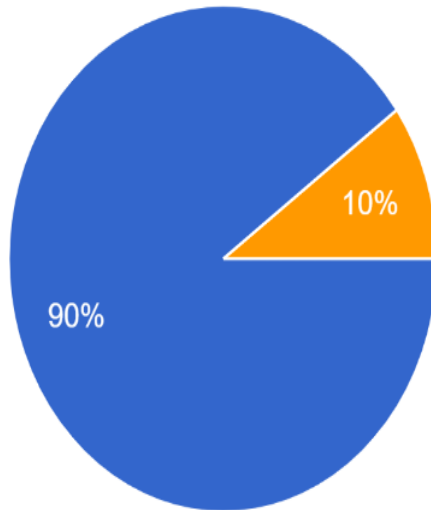
Would you describe yourself as a BIM Expert?



Design Teams' response



Would you describe yourself as a BIM Expert?

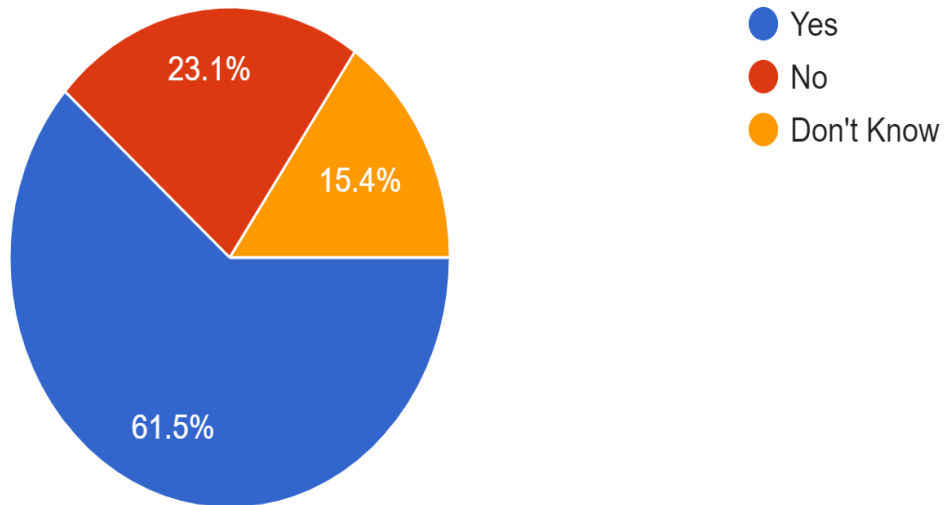


- Yes
- No
- While I would consider myself a BIM expert, I am also aware that in order to be an expert constant learning is required.

BIM Consultants' responses



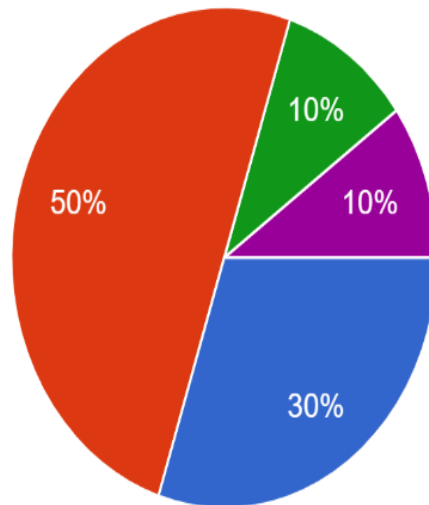
Would you say PAS 1192-2 adequately defines the Design Intent Model?



Design Teams' response



Would you say PAS 1192-2 adequately defines the Design Intent Model?

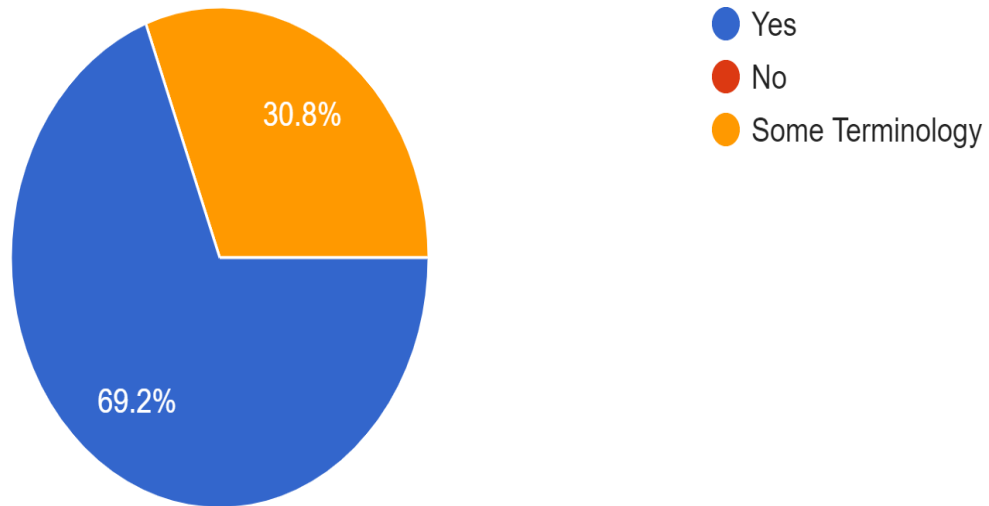


- Yes
- No
- Not Sure
- PAS has been withdrawn
- I believe PAS 1192 provides the basis for structuring information delivery

BIM Consultants' responses



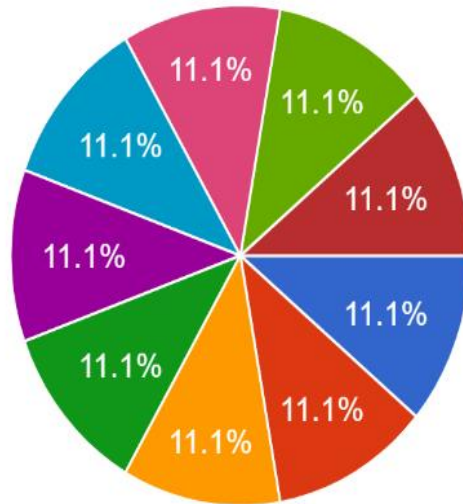
Do you fully understand BIM terminology?



Design Teams' response



How would you define the Design Intent Model



- Don't Know
- A design model is a fit for purpose model and dimensional correct arch...
- Model that adequately describes th...
- Assuming the design intent model i...
- Definition should be provided as we...
- LOD350 with accurate representati...
- I would define design intent model a...
- There is a new standard released fo...
- LOD of the geometry and informatio...



Table 1 Discipline indicating expert status

Discipline	Expert Status
Client	20%
Design	33%
BIM Consultant	100%
Contractor	20%



Table 2 Definition of design model in PAS 1192-2

Discipline	Yes	No
Client	0 %	80 %
Design	61 %	39 %
BIM Consultant	27 %	63 %
Contractor	18 %	82 %

On Line Survey findings



Interviews

“the quality of EIR documents from clients is poor, if they exist at all”

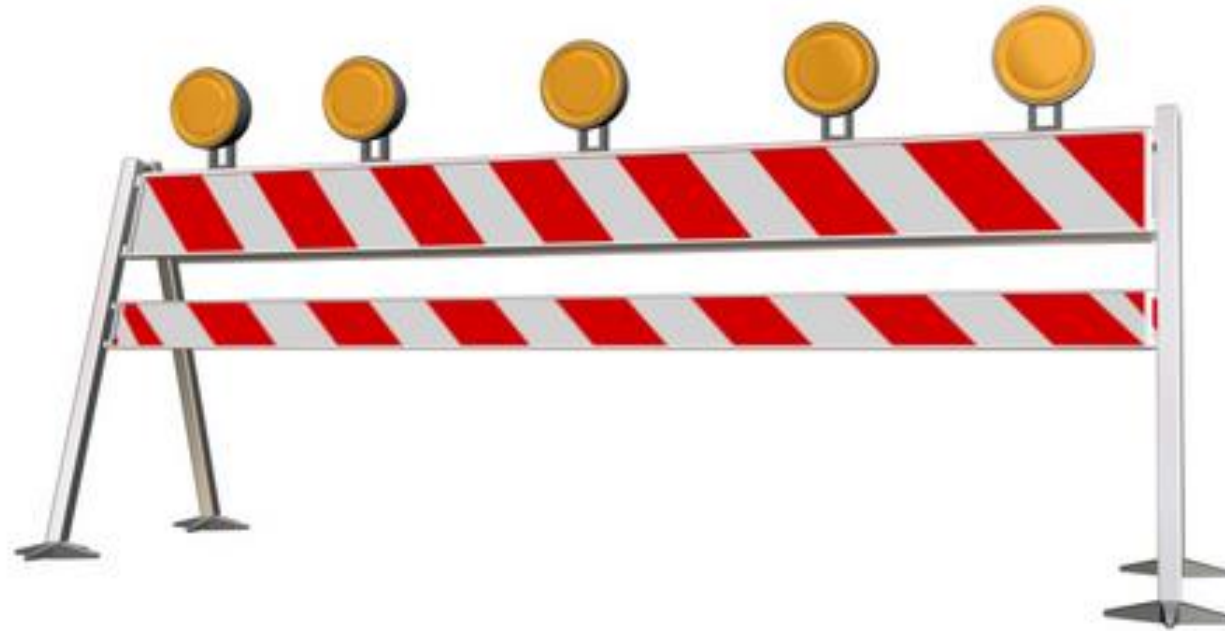


“The MPDT is the most important document stating what has to be delivered by whom, by when and to what detail”

“the GC should submit comments on the MPDT at tender stage, that’s what agreements are about, but it very seldom happens ... this comes down to poor understanding of how stuff works”



“Barriers”





“All design team appointments are separate, often working to different understanding of what is required”

“One of the design team is only issuing schematics, so the design is cannot be fully coordinated”



“That would be giving the contractor a stick to beat us with, it’s the adversarial nature of the business, and GC will use the model to identify problems”

“lowest bidder then comes looking for discrepancies in the design. Even if we have something in four different places, they will say the model did not show that, so we didn’t allow for it”



“Completing the design in such short time frames is a Herculean task, almost impossible to fully coordinate it, prefer not to issue it unless it is right”

“Exposing ourselves to risk, when we do not need to, when it was not asked for by the client. This is all about not ending up in court one day”



“If the model is issued without sheets and views, you can’t check it and if you can’t check the model, then you simply can’t trust it”

“The model is useless, unless all the drawings are developed from it”



Special language, with BIM terminology and BIM jargon disadvantages the client

The design team frequently develops the Employers Information Requirements document

The client has to rely on their design teams, who could have a conflict of interest



Design team can only issue a “coordinated design models” when design is 100% complete

Time constraints often prevent 100% design completion

A particular risk is if one of the design team does not perform, or has a different brief, full coordination impossible

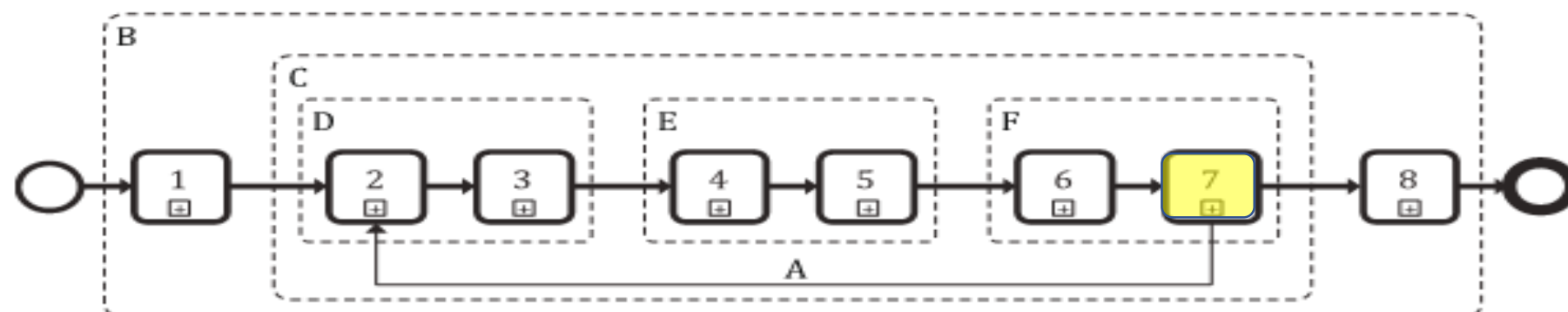


The general contractor cannot be sure what they can rely on the BIM model for

The practice of stripping down the BIM design model, renders the design model useless, meaning that the general contractor effectively has to start from scratch or accept the risks

4 Information management during the delivery phase of assets

The information management process ([Figure 3](#)) shall be applied throughout the delivery phase for each appointment, regardless of project stage.



Activities

- 1 assessment and need
- 2 invitation to tender
- 3 tender response
- 4 appointment
- 5 mobilization
- 6 collaborative production of information
- 7 information model delivery
- 8 project close-out (end of delivery phase)

- A information model progressed by subsequent delivery team(s) for each appointment
- B activities undertaken per project
- C activities undertaken per appointment
- D activities undertaken during the procurement stage (of each appointment)
- E activities undertaken during the information planning stage (of each appointment)
- F activities undertaken during the information production stage (of each appointment)

Figure 3 — Information management process during the delivery phase of assets



Conclusions

