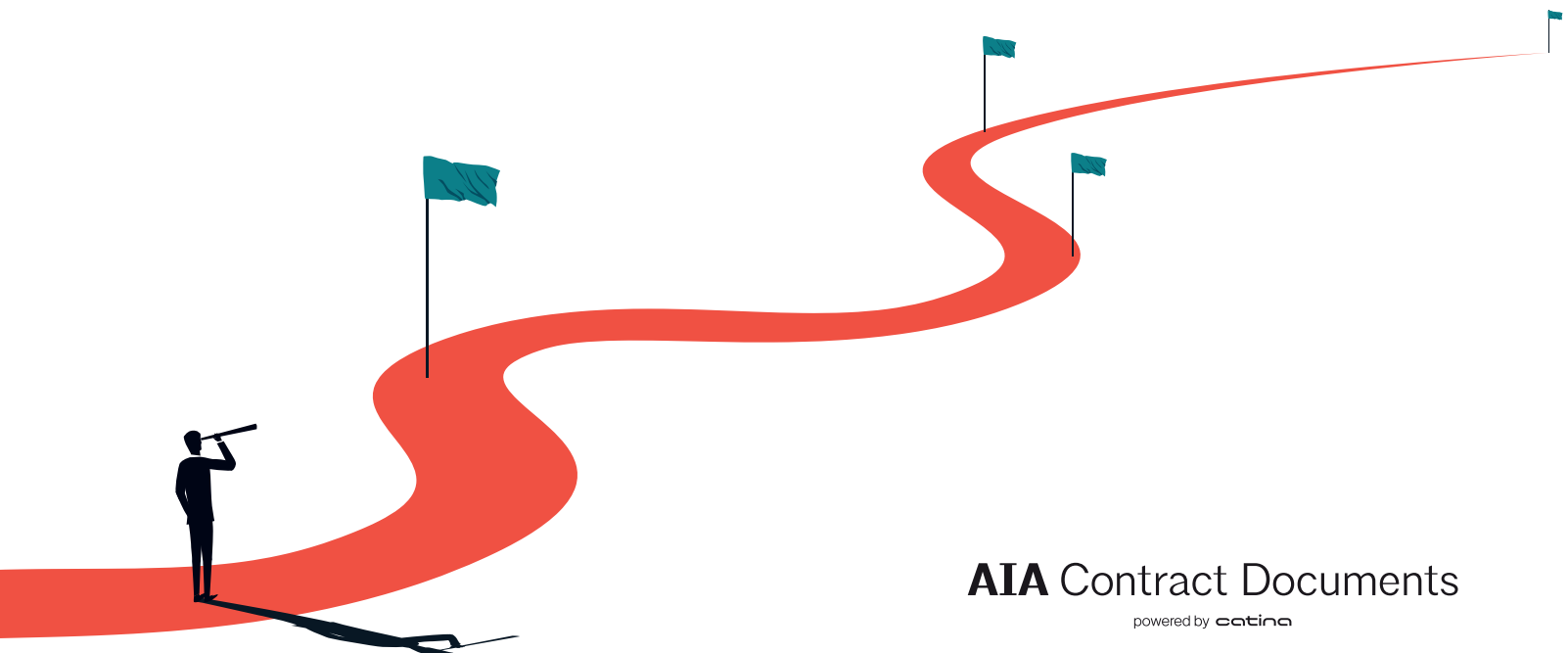


Master BIM Contracts

A Guide to AIA Contract
Documents New Documents



AIA Contract Documents

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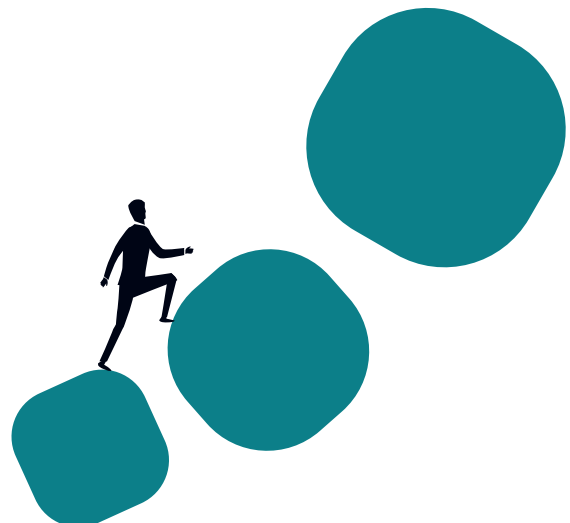
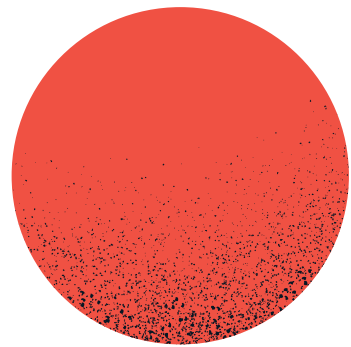
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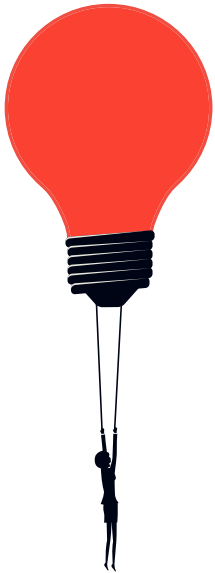


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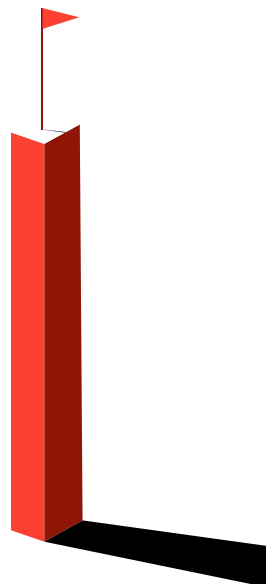
INTRODUCTION

Successfully completing a construction project, regardless of the scale, can be challenging and typically requires extreme amounts of collaboration.

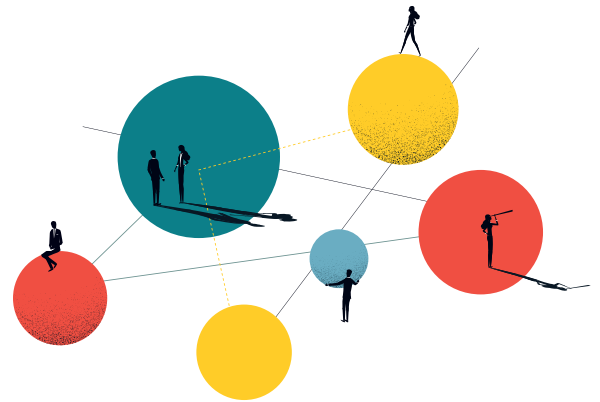
Resources such as building materials, talent, and of course capital are all important components with each factoring into the success equation. All these things and a host of others are crucial, but unless there is a coordinated, collaborative thread that unites all pieces and parties, the project is likely to yield less than optimal results.

Effective collaboration in construction is a must. Over time, tools have been introduced to improve this area to make sure that everyone is on the proverbial same page. Renderings, drawings, and powerful CAD technologies that allowed users to visualize their project and form a connection all came into play. As the industry continues to change, so too do the tools professionals use to support their needs. Building Information Modeling (or “BIM”) is the latest iteration in this evolutionary process. BIM is more powerful than any tool the industry has seen, with features that span many different roles and provide unprecedented levels of collaboration.

This e-book focuses on the powerful facets of this tool and highlights the new BIM-related products AIA Contract Documents has introduced to help professionals throughout the world integrate this technology into their workflows.



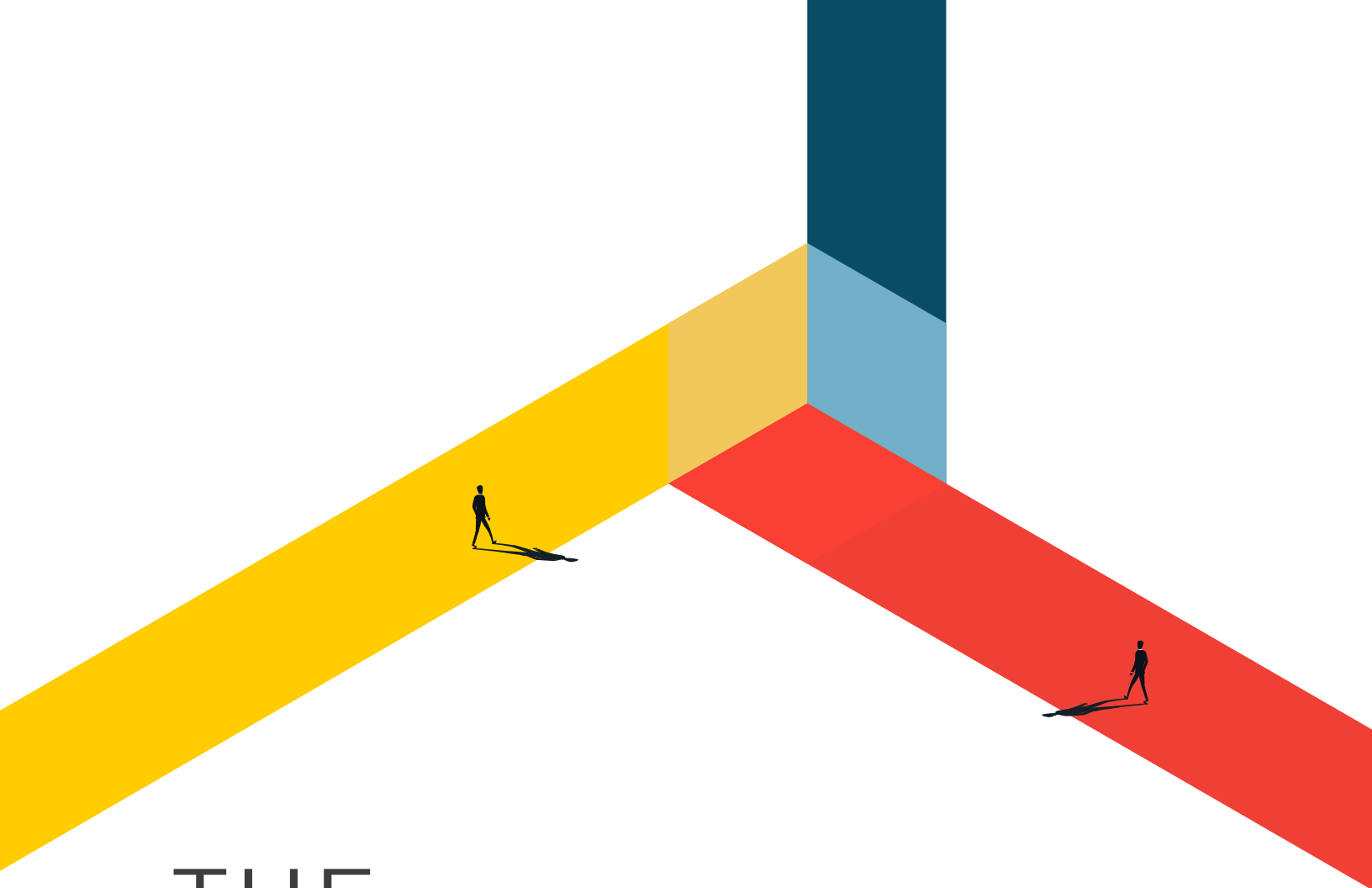
HOW BIM EXHIBITS MANAGE RISK



Construction contracts are complicated. They cover everything from payment, to insurance, to differing site conditions, to scopes of work, to indemnities, to flow-down provisions... The list goes on and on. So, why make them even more complicated by adding an exhibit dealing with BIM? The answer is simple: for the same reason that everything else is included in a construction contract. Namely, to allocate and manage risk.

The term BIM is generally understood to mean a digital representation of the project or a subset of the project. Because of this broad definition, the use of models on construction projects is becoming so ubiquitous that almost every project – large and small – uses BIM and, therefore, every project is subject to the risks associated with modeling.

Using a BIM exhibit puts all project participants – the architect, the owner, the contractor, and all subcontractors and consultants – on the same page with respect to how models will be shared, used, and relied upon. Any project participant must know how their model will be shared, used, and relied upon at the onset of their work if they are going to create a model suitable for the agreed-upon levels of sharing, use, and reliance. Similarly, all project participants want to avoid receiving a model half-way through a project expecting to be able to rely on it, only to be told that it cannot be relied upon. Or, that it will take significant work to bring the model to a state where it can be relied upon. These sorts of issues stem from miscommunications at project onset regarding the expected levels of sharing, use, and reliance. Negotiating a BIM exhibit at the onset of the project allows all the parties to align their expectations and price their work accordingly.



THE KNOWLEDGE DIVIDE



BIM is increasingly being woven through the fabric of every design and construction project. Therefore, it is becoming progressively more important for those who negotiate contracts to understand the nuances of BIM and – on the other side of the divide – for those who engage in modeling to understand the nuances of their contract terms. This, in essence, is the “knowledge divide.”

Those individuals in positions to negotiate contracts terms—attorneys (in-house and outside counsel), firm owners, senior executives, and contract managers—understand just enough about the design and construction industry and the project to have meaningful discussions about the services being provided. They need to understand the

services to manage the risk they are willing to accept, which will be reflected in the accompanying legal terms. For example, if a particular project will include earthwork and geotechnical analysis, then they need to know enough about the pitfalls of later discovering differing site conditions to be able to intelligently handle the terms in the clauses on these topics. But with the years of practice that it takes to master an understanding of specialty and engineering sciences (and the specific degree of craft necessary to produce proper BIM), it is understandable that the contract negotiator's knowledge of the practice can be limited. These contract negotiators stand on one side of the knowledge divide.

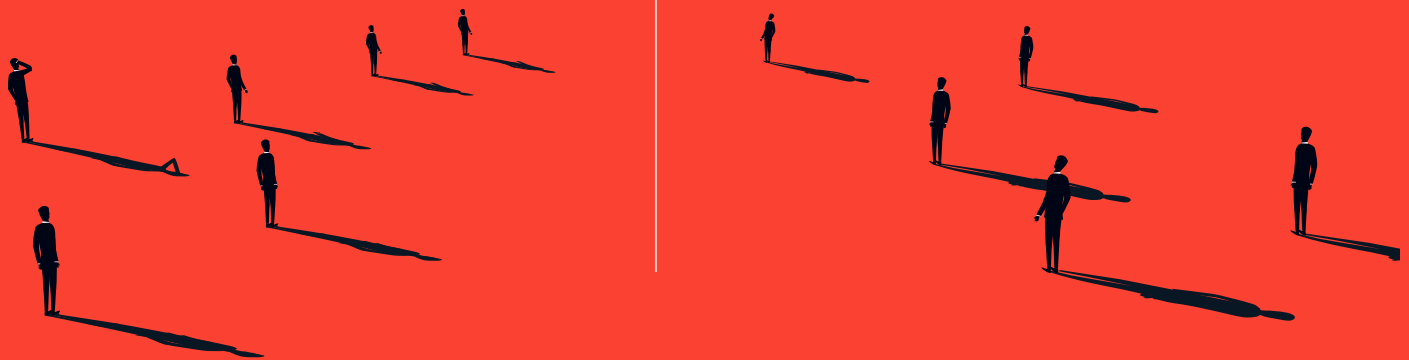
On the other side of the knowledge divide stand those who engage in day-to-day modeling. For these individuals, they are primarily concerned with perfecting their craft of modeling by producing the best model they can. But they may be unaware of the contract terms to which their firm's negotiator has agreed—even terms related to BIM.

BIM used to be one of those topics that contract negotiators could disregard. BIM didn't have a large impact on their firm's risk. Likewise, the contract terms could be disregarded by the modelers because those terms had no impact on their day-to-day work, since BIM was essentially a tool they used on the drafting floor. Given this framework, there was no real need to build a bridge over the knowledge divide.



Times are changing. The industry has evolved such that BIM is now a critical tool for projects that directly impacts all parties.

For example, a contract negotiator could unwittingly agree to allow their firm's model portion to be shared and used for quantity takeoffs, and the modelers within that firm may be unaware of this agreement. Therefore, the modelers may construct the model wherein the underlying quantities may not be correct even though the two-dimensional (2-D) output is correct. When another project participant asks for the model, the modeler might do one of two things: first, they might balk at sharing, knowing that some underlying quantities may be inaccurate because their model had been created primarily to generate 2-D drawings, and they then realize a significant amount of work will be required to reconstruct the model for that purpose; second, the modeler might share it immediately,



ignorant of the anticipated use(s) and the issues that will surely come when the quantity take-offs prove to be in error. Both scenarios place a lot of risk on the firm, and both responses are caused by the knowledge divide. This is just one example of the emerging risks inherent in BIM.

So, how do firms close the knowledge divide while successfully navigating the associated risks? In general terms, contract negotiators should consider acquiring enough high-level knowledge about BIM—both globally and as it pertains to their firm – to understand the risk implications of BIM-specific terms and clauses in design and construction contracts. Modelers should consider gaining enough knowledge of design and construction contracts—again, both globally and as it pertains to their firm – to understand the risk implications of their modeling efforts. One specific approach that firms can consider on a project-by-project basis is to conduct internal, pre-negotiation discussions where contract negotiators meet with their modelers to discuss and understand the anticipated approach to BIM on a particular project. Armed with that knowledge, the negotiators can effectively craft contract terms that reflect their firm’s capabilities, scope of services, and expected model uses.

Notably, the AIA Contract Documents program’s new Digital Practice Documents will help to span the knowledge divide for all project participants. Also, the AIA Contract Documents program recently presented a 60-minute panel discussion about the Knowledge Divide, which can be viewed [here](#).

AN INTRODUCTION TO THE AIA'S NEW BIM DOCUMENTS



The AIA Contract Documents Committee spent multiple years updating the 2013 BIM documents, which included the [G201-2013](#), [G201-2013](#), [E203-2013](#), and [C106-2013](#). The Committee interviewed and received feedback from scores of BIM experts to understand how this aspect of the industry was changing to determine what sort of language the new BIM docs should include. Throughout this years-long effort, the Committee elected to make a few significant changes to the BIM documents, discussed below.

New Structure

The new BIM documents will have a different structure than their predecessors. In 2013, the parties completed both an E203-2013 exhibit (which outlined the parties' understanding with respect to establishing the parties' expectations for the use of digital data and BIM on the Project and providing a process for developing the detailed protocols and procedures that govern the development, use, transmission and exchange of digital data and BIM on the project) and a G201-2013 exhibit (which contained provisions related to protocols and procedures that govern the transmission, use and exchange of digital data on a project). Then, throughout the project, the parties could incorporate a G202-2013 exhibit (which contained provisions related to protocols and procedures that govern the development, transmission, use and exchange of building information models on a project).



The Committee has streamlined the exhibit process by combining the essential terms of the E203-2013, G201-2013, and G202-2013 into a single exhibit, which will be provided in multiple different versions depending upon the extent of model sharing on the project. The exhibit will set forth the parties' agreement on a few critical "big ticket" items, such as the extent of model sharing across the project, permitted model use(s), and confidentiality and intellectual property issues.

After an exhibit is selected, the parties will then complete a BIM Execution Plan. Yes – you read that right! The AIA Contract Documents program has created a BIM Execution Plan. After the parties agree upon the "big ticket" decisions in their exhibit, they can begin to make, and document, the more granular decisions related to model sharing in their BIM Execution Plan, such as how models will be named and saved, when and how model files will be updated/uploaded, software requirements, data security measures, and modeling protocols. The BIM Execution Plan, in turn, can incorporate a Model Element Table if the parties will be using one to designate their Levels of Development.

New Documents

[E201-2022 BIM Exhibit for Sharing Models with Project Participants, Where Model Versions May be Enumerated as a Contract Document](#)

The E201-2022 is intended to be used when Models will be shared among all Project Participants,

and some Model Versions will be enumerated as a Contract Document. With the evolving nature of the construction industry, it is reasonable to assume that Models, or – to be more precise, Model Versions – will be increasingly used in the same way that traditional 2D drawings are now: as Contract Documents. However, the decision of whether to permit a Model Version to be enumerated as a Contract Document is significant and has many consequences. Therefore, the new E201-2022 gives Project Participants the ability to explicitly permit or prohibit certain Model Versions to be enumerated as Contract Documents. As a result, since the same E201-2022 is attached to all of the contracts throughout the Project, all Project Participants are aligned in their understanding as to the extent of reliance on particular Model Versions. This unified understanding allows Model Authors to structure their modeling services and fees accordingly.

[E202-2022 BIM Exhibit for Sharing Models with Project Participants, Where Model Versions May Not be Enumerated as a Contract Document](#)

The E202-2022 is intended to be used when Models will be shared among all Project Participants, but E202-2022 does not permit Model Versions to be enumerated as a Contract Document. Many of the other terms of E202-2022 are similar to E201-2022.

[E401-2022 BIM Exhibit for Sharing Models Solely Within the Design Team](#)

Unlike E201-2022 and E202-2022, E401-2022 is intended to be used when Models will be shared solely within the Design Team, which is defined as “the Architect, its Consultants, Subconsultants, and Sub-subconsultants, at any tier.” In this regard, E401-2022 anticipates a more “siloe” approach to Modeling, where the Design Team creates and distributes Models within the Design Team only, and those Models are not intended to be shared with the Owner or any member of the Construction Team.

[E402-2022 BIM Exhibit for Sharing Models Solely Within the Construction Team](#)

Similar to the E401-2022, the E402-2022 anticipates a more “siloe” approach to Modeling. Specifically, the E402-2022 is intended to be used when Models will be shared solely within the Construction Team, which is defined as “the Contractor, its Subcontractors, and Sub-subcontractors,

including fabricators, at any tier.” When using the E402-2022, the Construction Team can share Models within the Construction Team only, and those Models are not intended to be shared with the Owner or any member of the Design Team.

[G203-2022 BIM Execution Plan](#)

BIM execution plans are, by their very nature, project specific. G203-2022 is intended to serve as a framework from which the Project Participants can create a Project-specific BIM Execution Plan. In this regard, G203-2022 contains multiple fill points and is intended to stimulate conversations and document decisions surrounding how the Project Participants will utilize BIM on their Project. All of the BIM exhibits contain language requiring the Parties to adhere to their BIM Execution Plan. Acting in a similar manner to a Project schedule, although the BIM Execution Plan is not intended to be a contract exhibit, Parties are contractually obligated to adhere to its terms.

[G204-2022 Model Element Table](#)

One of the foundational elements of BIM is the concept of Levels of Development, or LODs. Using LOD designations, Model Authors can convey the specificity and exactness of their Model Elements and, in turn, other Project Participants with access to the Model can determine an appropriate amount of reliance on those elements. In this regard, G204-2022 provides Project Participants with a table in which they can designate LODs for various Model Elements at different Project milestones.

[G205-2022 Abbreviated Model Element Table](#)

G205-2022 is one of the more unique and consequential documents in the current suite of Digital Practice Documents. The AIA Contract Documents Program received valuable feedback related to its 2013 documents that, while the Model Element Table contained therein was critical, it was occasionally burdensome to complete and sometimes created a hurdle to proper completion of the entire document set. As a result, the AIA Contract Documents Program created G205-2022, a Model Element Table that is abbreviated. The G205-2022 can facilitate the use of a Model Element Table by Project Participants who might otherwise not be familiar with Model Element Tables.

[C106-2022 Digital Data Licensing Agreement](#)

C106-2022 is similar to C106-2013, with some minor modifications.



BIM AS A CONTRACT DOCUMENT— CAN IT BE DONE?



In this section, we will take a deep dive into one important aspect of the new BIM documents: BIM as a Contract Document. Currently, the common practice is for design teams to use models internally to meet their contractual obligation to generate 2-D drawings. Models might be shared with other project participants, but the models are usually accompanied by a disclaimer stating that the model cannot be relied upon. As a result, parties may have to generate their own model if they want to use BIM during the construction or post-construction phases. This process is arguably inefficient. Proponents of allowing a model to be enumerated as a Contract Document have argued that it will help unlock the full potential of modeling and streamline the design and construction process. Opponents argue that relying on a model could have far reaching and unknown risk implications, especially if the model is used for a purpose unknown to the model author.

The owner and contractor typically enumerate the documents that will be considered “Contract Documents” in their agreement. In the AIA Contract Document family, this enumeration occurs, for example, in Articles 1 and 9 of A101-2017 and is reinforced in Section 1.1.1 of A201-2017. The decision to enumerate a particular document as a Contract Document is significant and carries with it many implications. Even though it may seem more efficient and unlock more of the benefits of modeling, the decision to enumerate a model as a Contract Document should be made only after thorough consideration of all the consequences.

For example, consider the following. A201-2017 states that the “Contract Documents form the Contract for Construction.” (Section 1.1.2). Therefore, if a model is enumerated as a Contract Document, it becomes part of the Contract for Construction. In that same section of the A201, the parties agree that the “Contract may be amended or modified only by a Modification.” Modifications are, by definition:

- 1.** a written amendment to the Contract signed by both parties
- 2.** a Change Order
- 3.** a Construction Change Directive
- 4.** a written order for a minor change in the Work issued by the Architect.” (Section 1.1.1).

The implication is that every time the model changes, a formal Contract Modification needs to occur. With the myriad changes made to a model each day, it would be impractical to issue a Contract Modification (i.e., a Change Order) each time. As discussed below, the E201-2022 corrects for this issue.

As another example, consider the contractor’s obligation to “perform the Work in accordance with the Contract Documents.” (A201-2017 Section 3.1.2). The implication of this requirement is, of course, that a contractor is in breach of its contract if it fails to perform the “Work” in accordance with the Contract Documents. The construction industry has developed to allow the contractor to reference a static set of drawings when performing their “Work” and, thereby, perform their Work in accordance therewith. However, arguably, a contractor cannot reasonably be expected to perform their Work if their reference document (the model) is constantly changing. Again, as discussed below, the E201-2022 corrects for this issue.

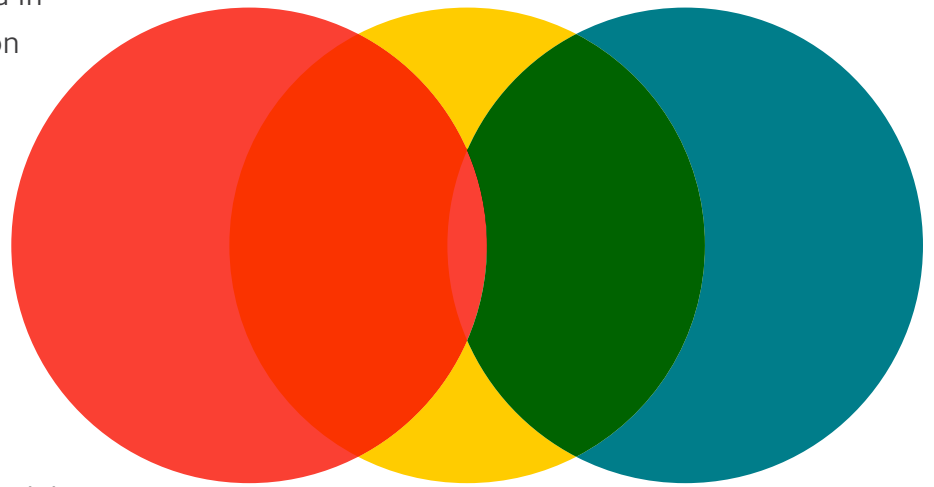
The examples above are just two out of potentially dozens of implications that enumerating a model as a Contract Document has. However, the E201-2022 is structured with many features to account for these implications and provide predictability and clarity.

The first feature, which is found in all the 2022 BIM exhibits, is the addition of the terms “Model Version” and “Model Portion.” Model Version is defined as “a specific edition of a Model or Model Portion that is sufficiently identifiable as unique and unchanged as of the time it is saved by its Author” and Model Portion is defined as “a subset of a Model [which may be designated] by discipline, trade, area, location, phase, or other mutually agreeable distinction.” Model Versions are, in essence, a model in a single point in time, whereas Model Portions are a subset of a model. In E201-2022, parties may agree that “only a single Version of [the] Model Portion may be enumerated as a Contract Document.”

In this way, E201-2022 eliminates some of the problems described above because the “model portion” that is enumerated as a “Contract Document” is static – only a single version of that portion is a Contract Document. The parties then agree that “A Model Version enumerated as a Contract Document shall only be changed or replaced through the modification process set forth in the agreement between the owner and contractor for the construction of the Project,” but the need to engage in that modification process is not triggered each time a change is made within the model – rather, formal modifications are only needed when a new version is being issued as a Contract Document from which the contractor will perform its “Work.”

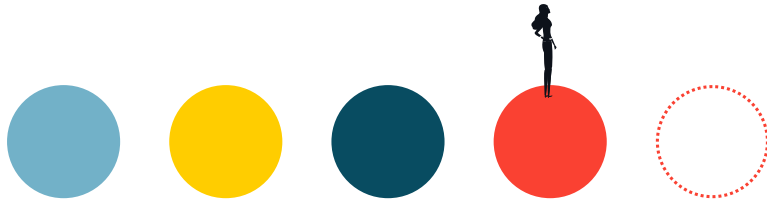


The second feature is a limitation on the types of reliance placed upon models. As stated above, one of the primary concerns surrounding model sharing and, in particular, enumerating models as a Contract Document is that the model will be relied upon in an unintended manner. E201-2022 is designed to protect against this risk. Specifically, the parties identify particular uses for which models will be developed and agree that “the extent of their reliance on any Model Version shall be limited to the uses identified [] and in accordance with the BIM Execution Plan...” In this way, all project participants understand the specific uses that can, and cannot, be applied to all of the project’s model portions. This shared understanding helps to increase clarity and, thereby, decrease risk.




As stated above, enumerating a model – or, more accurately, a model version – as a Contract Document has many implications. For those who wish to enumerate their model portions as a Contract Document, they now have the option of choosing the E201-2022 as their BIM exhibit and, therein, clarifying which model portions are eligible for enumeration, the extent of reliance that can be placed upon those model portion, and how and when those Contract Document model portions will be modified.





NEW TERMS IN THE AIA'S 2022 BIM DOCUMENTS

 The AIA BIM documents contain several new terms. All are important, but three stand out. These include Model Portion, Model Author, and Model Version. Each will be discussed in detail in the following section.

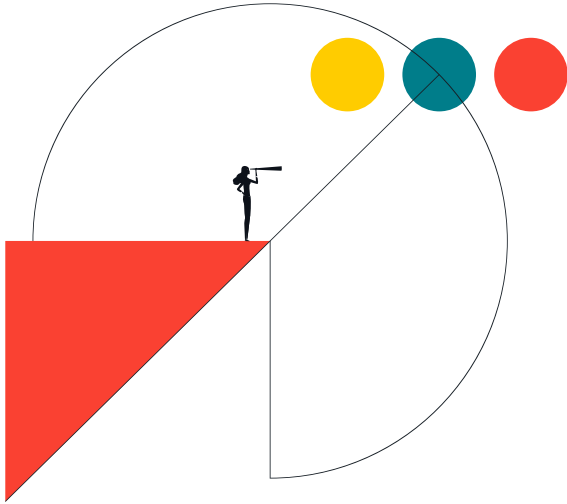
Model Portion or Portion

In the new AIA BIM documents, a Model Portion, or Portion, is typically defined as “a subset of a Model as designated in Table 2.4 of [the] Exhibit. The Parties may designate a Model Portion by discipline, trade, area, location, phase, or other mutually agreeable distinction.” (Note: The E401-2022 and E402-2022 define the term slightly differently, but the difference in the definition in those two documents is outside of the scope of this section.). The documents allow for the terms “Model Portion” and “Portion” to be used interchangeably, depending upon the structure of the sentence in which the term appears.



A Model Portion is intended to be understood as a subset of a model but is purposefully left open as to how the subset categories will be determined because different projects and models may require different categorizations. For example, on one project it may make sense to break models down into Portions according to the trades – so there could be a mechanical Portion, a plumbing Portion, an electrical Portion, a structural Portion, and so on. However, in a different project it may make sense for the model to be broken down into Portions according to the location – so there could be a foundation Portion, a first floor Portion, a second floor Portion, and so on.

After the Portion categories have been decided, the parties can determine the appropriate level of sharing (i.e. the “Sharing Tier”) for each portion. For example, the parties may decide that the structural Portion will be shared with all project participants and can even be enumerated as a Contract Document, but the plumbing Portion might only be shared with a few project participants and may only be used as a reference.



Model Author or Author

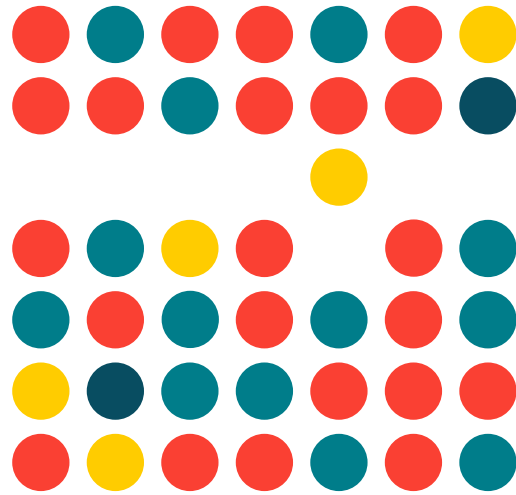
In the new AIA BIM documents, a Model Author, or Author, is defined as “the Project Participant responsible for developing a Model Portion.” Just like with “Model Portion,” the documents allow for the terms “Model Author” and “Author” to be used interchangeably, depending upon the structure of the sentence in which the term appears. A Model Author is, simply, the project participant who creates a Model Portion.

Model Version or Version. In the new AIA BIM documents, a Model Version, or Version, is defined as “a specific edition of a Model or Model Portion that is sufficiently identifiable as unique and unchanged as of the time it is saved by its Author.” Similar to “Portion” and “Author,” the documents allow for the terms “Model Version” and “Version” to be used interchangeably, depending upon the structure of the sentence in which the term appears. As explained in the previous section, Model Version is a critical definition and concept in the 2022 BIM documents. A Version is a “specific edition” of a Model or Model Portion.

Through this concept, project participants can identify and reference (and even potentially rely upon) a specific version of their model, while that same model continues to develop. Then, when the Author determines that the model is sufficiently developed to meet the requirements of the next milestone, they can identify the next Version, to be used for reference (and, again, potentially even reliance).

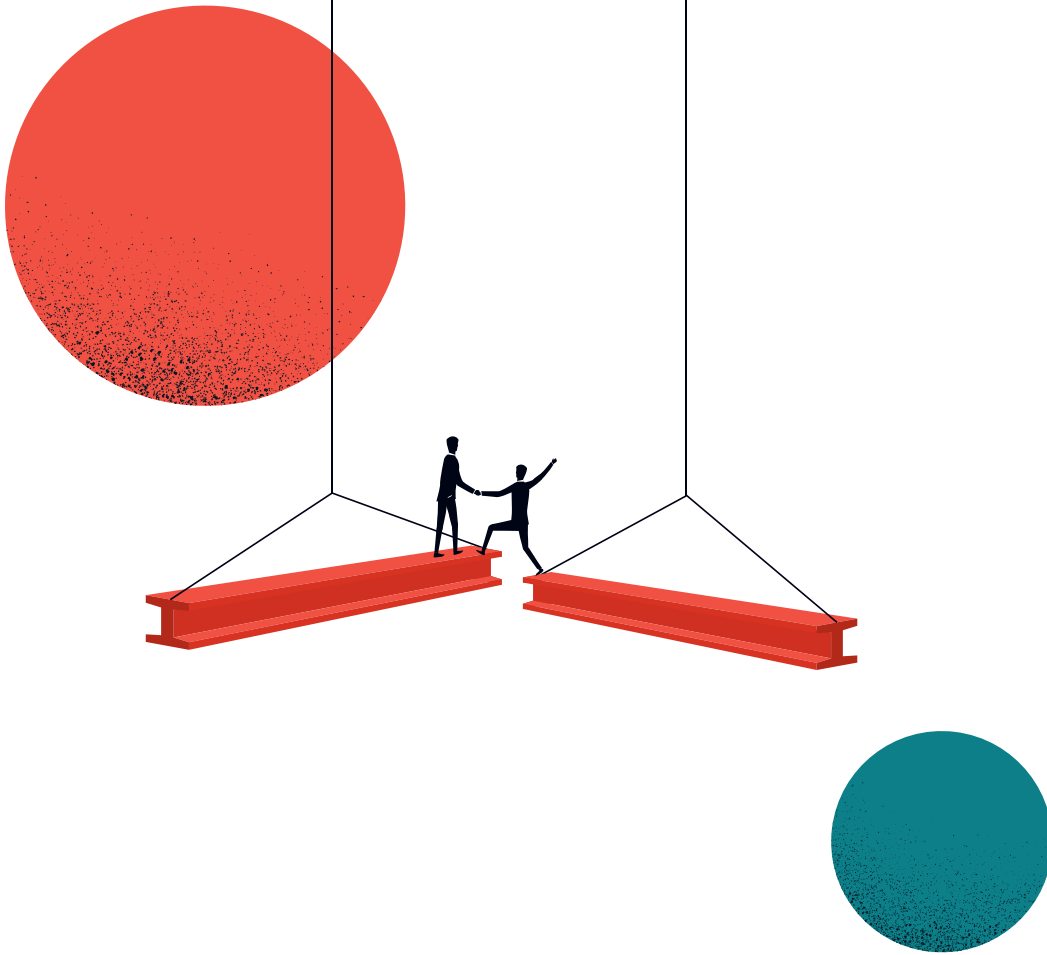
An analogy to this process may aid in understanding the context: traditionally, project drawings can be developed through software and then exported and shared with the other project team members as a PDF. The underlying file may continue to change and be developed even after the PDF is distributed. Then, if the author wishes to distribute an updated version of those drawings, they can do so by saving it as a PDF and distributing that PDF. The concept of a Model Version is intended to work the same way and, as a result, can simultaneously facilitate model collaboration while also enabling model sharing with appropriate levels of use and reliance.

THE AIA'S NEW MODEL ELEMENT TABLES



[G204-2022 Model Element Table](#)

One of the foundational elements of BIM is the concept of Levels of Development, or LODs. Using LOD designations, Model Authors can convey the specificity and exactness of their Model Elements and, in turn, other Project Participants with access to the Model can determine an appropriate amount of reliance on those elements. In this regard, G204-2022 provides Project Participants with a table in which they can designate LODs for various Model Elements at different Project milestones.

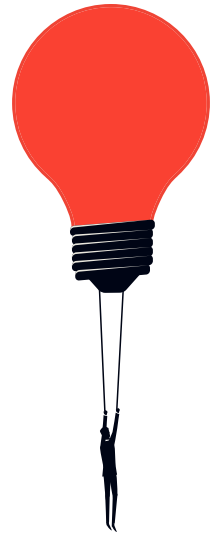
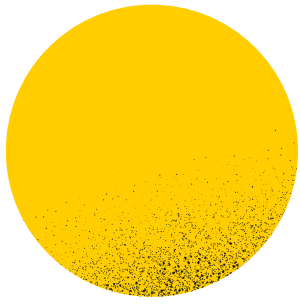


[G205-2022 Abbreviated Model Element Table](#)

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Excel-Based Tables

Both G204-2022 and G205-2022 are now offered as free downloadable excel files, and can both be used in conjunction with G203-2022 BIM Execution Plan. Basing these tables in excel gives users greater functionality and adaptability to account for the unique demands of every construction project.



RESOURCES



New 2022 BIM Documents:

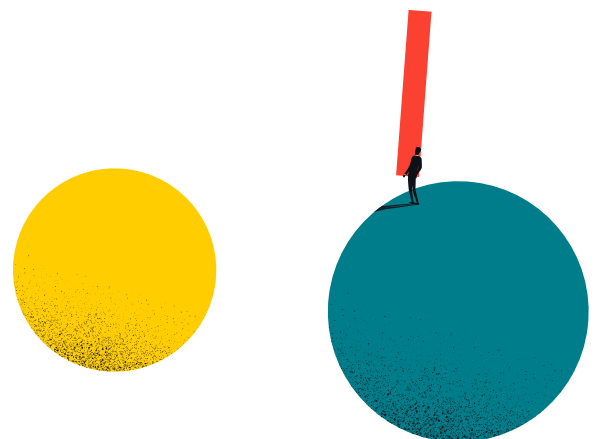
- [E201-2022 BIM Exhibit for Sharing Models with Project Participants, Where Model Versions May be Enumerated as a Contract Document](#)
- [E202-2022 BIM Exhibit for Sharing Models with Project Participants, Where Model Versions May Not be Enumerated as a Contract Document](#)
- [E401-2022 BIM Exhibit for Sharing Models Solely Within the Design Team](#)
- [E402-2022 BIM Exhibit for Sharing Models Solely Within the Construction Team](#)
- [G203-2022 BIM Execution Plan](#)
- [G204-2022 Model Element Table](#)
- [G205-2022 Abbreviated Model Element Table](#)
- [C106-2022 Digital Data Licensing Agreement](#)

Guides:

- [Guide, Instructions, and Commentary to the 2013 AIA Digital Practice Documents](#)
- [2022 BIM Documents Guide](#)

Webinars

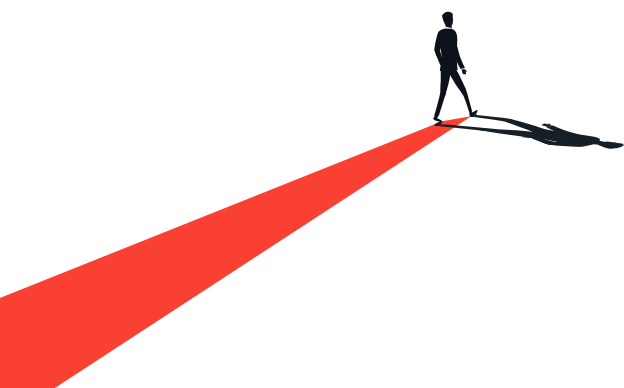
- [The Knowledge Divide](#)
- [Sharing BIM on Your Project](#)





CONCLUSION

▶ The benefits of BIM are nothing short of exceptional. If used properly, the tool can add immense value across a broad spectrum. With BIM, teams can better manage resources and costs while gaining knowledge that can be leveraged on future projects. The comprehensive view users get from BIM shortens lifecycles and increases efficiencies. This, in turn, leads to better ROI (Return on Investment) as projects are finished in less time than they would typically take if other methods were employed.



Quality is also impacted as BIM allows users to develop detailed, more accurate designs throughout the construction process that yield a more polished structure. Last but certainly not least, collaboration and communication both drastically improve when applying BIM technology to a build. When all parties are on the same page relying on a single source, everybody wins.

In some instances, contracts have language and legalese that can be confusing. The beauty of BIM is that it simplifies the complexity of construction contracts while at the same time, enhancing all facets of a project. Due to their differences in size, projects have varying degrees of risk. Products designed by AIA Contract Documents were built with this understanding in mind and help users effectively minimize and manage those risks, leading to better results.

As discussed, BIM users must focus heavily on closing the Knowledge Divide and making sure all project participants have a firm understanding of the tool. Closing this gap while gaining a healthy respect for the needs of each project participant strengthens the approach and positions the project, no matter the scale, for success. Lastly, we introduced the concept of using BIM as a Contract Document, a feature AIA Contract Documents recently included after careful consideration along with several other significant enhancements to the family of BIM-centric products. The changes were done with the users in mind, with the singular goal of positively effecting every aspect of the construction process.

In closing, it's important to understand that BIM is an amazing tool that can add value to a construction environment, regardless of the size or scope of the project. New products offered through AIA Contract Documents were built with the user in mind. Increased risk management and predictability are all part of this new phase of technology and growth. As the industry cycles into the next phase, our mission is to continue responsibly supporting the needs of the professionals throughout the globe while positioning them for ongoing success.

AIA Contract Documents has provided this Ebook for general informational purposes only. The information provided is not legal opinion or legal advice and does not create an attorney-client relationship of any kind. This Ebook is also not intended to provide guidance as to how project parties should interpret their specific contracts or resolve contract disputes, as those decisions will need to be made in consultation with legal counsel, insurance counsel, and other professionals, and based upon a multitude of factors. Any language quoting from AIA Contract Documents that have not yet been released is subject to change before final publication.

Thank you!

AIA Contract Documents

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