

NC Board of Architecture Position Statement on Professional Seals on Building Imaging Modeling/Integrated Project Delivery (BIM/IPD) Projects

The North Carolina Board of Architecture recognizes that changing technology could potentially impact on the current rules of the Board. The NC Board of Architecture (NCBA) and the NC Board of Examiners for Engineers and Land Surveyors (NCBELS) approved a Pilot Program that examined the use of seals in a BIM/IPM environment. The pilot program included projects to be constructed in Mecklenburg County, where the Code Enforcement Department reviewed plans throughout the process in the BIM model. While each project had slightly different approaches, the conclusion by the Board of Architecture was that the process worked. The Board of Architecture recognizes in the case of this program, that all parties (owner, architect, engineers, GC and subs, and Inspection Department) all had significant depth of expertise in their areas of specialty as well as in the use of BIM technology. While this process may not work for everyone, NCBA finds that use of BIM/IPD technology is consistent with the Rules and Laws that govern the practice of architecture in North Carolina. NCBA reminds all architects that it remains incumbent upon them to protect the health safety and welfare of the public.

This document is intended to offer guidance to architects practicing in North Carolina who wish to use a Building Information Modeling execution plan coupled with an Integrated Project Delivery contract. (BIM/IPD). This guidance may also apply to any project delivery method employing three dimensional modeling software to virtually construct all building components by a collaborative team based process from design start to construction completion.

This does not apply to projects using BIM or IPD individually, using BIM without IPD or an equivalent collaborative delivery process that does not utilize both BIM and IPD.

Definitions:

- **BIM**: model based technology linked with a data base of project information, using three dimensional, real time dynamic modeling software, to plan all building construction. The

model encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.

- IPD: a project delivery method that integrates key participants (owner, architect, engineer, contractor, code official, et al), systems, business structures and practices into a process that collaboratively plans and constructs facilities. The collaborative process begins in early design and continues through all phases of design, fabrication and construction.

(1) Use of Professional Seal on BIM-IPD Documents Confirming Project Development At a point in project development agreed to by the Authority Having Jurisdiction (AHJ) and owner's team, per the owner's agreement with the project team members, the architect shall affix a digital seal and signature to only that part of the model for which they are responsible.

- a. A digital archive "snapshot" of the architect's final product at the completion of that project phase must be retained in the model as an unalterable record.
 - *Commentary -Model programming assures that issuing the Digital Archive as an export keeps the format in a "read-only" state, meaning that changes cannot be made. It also allows the AHJ to accept models from different authoring systems in the future and be trained in a neutral platform that is a free viewer.*
- b. The digital archive shall be formatted per the requirements below:
 - 2D DWF, 3D DWF,& NWD exports from the native authoring software (Autodesk Revit) and will contain a digital signature issued by a public certification authority (VeriSign or Thawte). The naming of proprietary software refers to current commercially available programs that satisfy the intentions of this guidance, it is not intended to represent that those are the only programs capable of meeting the requirements. Similar or equivalent software is acceptable provided it is capable of DWF exports that can be digitally signed and authenticated by a verifiable source.
- c. The digital signature shall contain a statement listing the scope of the architect.
- d. The digital archive must be submitted to the AHJ for initial code review and secure storage on an AHJ managed and secure "read only" website.

- (2) Use of Digital Signature on Other Benchmark Documents For other benchmark documents not included in a project phase completion information set, the architect shall affix a digital signature to the document. (refer to 21 NCAC 02 .0206 Requirement for and Use of Professional Seal)
- A digital archive “snapshot” of the architect benchmark documents must be retained in the model as an unalterable record.
- (3) Collaboration The methods of collaboration should be at the discretion of the architect and the other team members.
- (4) Professional review of others’ documents When the architect is required by the owner’s agreement to review the contractor’s drawings (see rule 21 NCAC 02 .0206 (a) (1)(A) & (B)) for conformance with design criteria, the review by the architect shall not constitute taking of responsibility for the documents nor would the architect seal or sign the contractor’s construction detailing documents unless they were prepared under the responsible control of the architect as set forth in 21 NCAC 02 .0206 (d).
- (5) Changes during construction It is recognized that the owner’s full design team will work with a mix of professionally sealed information sets, as well as other model information, inputted by other project team members. When changes occur in the construction strategy that are deemed significant enough to require supplemental documents from the design professionals regardless of type, the professional may rely on the information from others in the model (including the contractor’s team), so long as the professional clearly indicates the modifications made, his responsibility for it and seals only his work.

Question regarding this document should be directed to Cathe Evans, Executive Director – NC Board of Architecture at cathe@ncbarch.org

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