Construction Industry Council

# BEST PRACTICE GUIDE FOR PROFESSIONAL INDEMNITY INSURANCE WHEN USING BUILDING INFORMATION MODELS

**CIC/BIM INS**
first edition 2013


*The CIC acknowledges the technical input and leadership provided by the BIM Task Group in support of the production of CIC BIM documentation.*

This Best Practice Guide has been produced by Griffiths and Armour on behalf of the CIC and the BIM Task Group



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## 1. Executive Summary

This Best Practice Guide has been produced by Griffiths & Armour on behalf of CIC in support of the work of the BIM Task Group. The guide is directly addressed to the needs of insured parties – particularly consultants engaged in the production of definition information using Building Information Models.

The aim of this best practice guide is to support the construction industry's take up of Level 2 Building Information Modelling, by summarising the key areas of risk which Professional Indemnity ('PI') insurers associate with level 2 BIM and what you can do about those risks as a prudent insured.

We are therefore looking to inform you, the insured, of what you might be required to do in order to ensure that your PI insurance arrangements are in order.

The foundation of this document is a series of consultations held by Griffiths & Armour with the majority of the PI insurance market, including several Lloyd's syndicates and the main insurers in the company market. A major and necessary part of the consultation process was the education of insurers as to what the introduction of level 2 BIM involves, what technology is required to support it and what the "outputs" of such a design process might involve.

The overarching response to the consultation from insurers has been that there are no issues with level 2 BIM which are sufficiently serious as to require coverage restrictions for consultants which use it, nor will its use, all things being equal, materially alter the risk profile presented by a consultant, and therefore the premium implications will be minimal.

You should, therefore, have little difficulty in obtaining assurance from your broker that this activity will fall within the range of activities contemplated by our PI insurers.

It should also be stressed that this report **does not consider the Level 3 BIM environment**, which raises very different liability issues which will need further consideration. By way of explanation, by level 2 BIM we broadly mean that a "federated model" is being used, albeit in a managed 3D environment and perhaps with 4D construction sequencing and /or 5D cost information. Level 2 BIM requires each participant to develop their own model(s), which are then shared with the project model, with appropriate audit trails in place. It is the robustness of these audit trails and change control systems that gives insurers comfort.

It should be noted that simply because two or more parties are working together, this does not mean that this extends into Level 3 BIM territory, provided that the resultant models are still "federated".

*The guidance cannot cater for every contingency and, as with all material facts, if you are in any doubt about whether to disclose something to your insurers, then you should disclose it.*

*The document is not intended to be prescriptive as to what must, or must not, be done when arranging PI policies, and in reality there are very few absolute requirements. Given the myriad of policy wordings in the UK PI market and the number of insurers writing business in this sector, what follows is general advice. Consultants should always speak with their broker about specific circumstances when arranging PI policies.*

## 2. Insurance Best Practice Guide

Although BIM could revolutionise the way in which design is undertaken, it should not revolutionise the PI insurance market – at least not until the widespread introduction of Level 3 BIM, when bespoke solutions may be required.

If you work with your existing provider, it is unlikely that your PII will be compromised by the use of level 2 BIM on any projects you undertake and the following guidance is intended to help support you when speaking with your broker to get that assurance.

### 2.1 The First BIM Project

The start of a project is unlikely to coincide with a renewal, so if you do not regularly contact your PI broker, it is unlikely that you will have had the opportunity to speak with them regarding the insurance implications of a BIM project.

So, the first time you enter into a contract which utilises level 2 BIM, make contact with your PI broker to ensure that they (and your insurers) are comfortable with what level 2 BIM involves and that there are no policy terms which could cause problems.

For the overwhelming majority of consultants, this will not be a particular issue and no insurance market with whom we have spoken has given any indication that level 2 BIM gives rise to significant concerns.

Similarly, no insurer has indicated that any particular "endorsement" or policy modification is required to note this activity, which although novel, is not sufficiently different from the norm to warrant any significant affirmative action from insurers. Depending on the familiarity of your broker/insurer with level 2 BIM, be prepared to consider/respond to the following:-

- Project name, contract value, amount of professional fees earned
- Nature of services you are performing
- Conditions of contract, what BIM protocol is being used (e.g. CIC BIM Protocol)
- Whether you are undertaking the "Information Management" role and, if so, what this involves from a services perspective (e.g. the role described in the CIC Scope of Services for Information Management)
- Whether you are undertaking additional coordination activities such as the federation of models or clash detection
- Whether you are employing as a sub-consultant a 'BIM Coordinator'
- Whether you are "hosting" any BIM environment

If the employer has separately appointed a 'BIM Coordinator', you should also advise your insurer that this is the case.

**Above all, ensure your broker understands that level 2 BIM is being used, not a fully integrated BIM 3 environment.**

The aim behind this disclosure is to ensure that you have discharged your duty to disclose "material facts" to your insurer (albeit via your broker). The disclosure of material facts is crucial and underpins the whole relationship between insured and insurer. Failure to disclose "material facts" could lead to a claim being turned down, or the policy being avoided entirely.

Generally speaking, provided that you have made your insurers aware of the information referred to above, this should be sufficient to discharge this duty in most circumstances, but it is important to always take your broker's advice in this regard. As is always the case; if you have any doubt about whether something is material, you should disclose it.

Although practice will vary from broker to broker and insurer to insurer, it is anticipated that once the market place starts seeing BIM projects come through, that specific disclosure of subsequent BIM projects will not be required once your insurer is aware that you undertake projects using BIM software.

## 2.2 The Policy Wording

We have never seen a PI insurance policy which contains an outright exclusion in relation to the use of BIM. Nor, from our consultation with the insurance markets, do we expect to see any such provisions. Nevertheless, it would be sensible to ask your broker whether your policy contains any terms, conditions, limitation or exclusions that impact upon your use of BIM. These could be terms which although they which do not make any particular reference to BIM, as such, could nevertheless impact upon the coverage offered by the policy.

A short summary follows of the more significant terms which might be included in your PI policy, and which could cause you an issue:-

2.2.1 Is the PII policy arranged on a "legal liability" (or civil liability) basis? [i.e. is the policy capable of responding to non-negligence claims under contact?]
*This point is important for a number of reasons. Firstly, it offers enhanced protection should you sign a term in a contract which imposes liability upon you for some element of design (BIM related or otherwise) which could make you liable in the absence of it (an indemnity being a classic example). Although it is not anticipated that terms in relation to BIM, or the roles that support it, would become onerous, having a broad legal liability policy is a sensible precaution and worth the investment notwithstanding any BIM related issue.*

2.2.2 Does your PII policy contain any exclusions for "express guarantees"?
*It has been suggested that some bespoke contracts and protocols may be couched in such a way as to be tantamount to an express guarantee that, say,* PAS 1192-2:2013 *will be complied with. Given this, it is important to know that you are covered by your policy should this arise in a contract which you are looking to enter into. It has to be said, that this would be true of any contractual term, so is not particular to BIM.*

2.2.3 Are there any specific clauses dealing with document retention?
*PI insurers seldom impose specific documentation requirements on their insureds, either as to how they are required to maintain documents or for how long. Generally speaking, insurers expect their insureds to retain good records of all projects they undertake, with no stipulation as to whether this is in hard or electronic form. There is also an expectation, but not a requirement, that these documents would be retained for at least as long as the consultant might be liable under the contract (generally 12 years post practical completion). The rationale behind this expectation is obvious – claims handling. Without contemporaneous documents, defending an allegation of negligence is difficult and often impossible. Clearly it is in the interests of both insurers and insureds to ensure that the documents are stored appropriately and are easily retrievable.*
*However, notwithstanding this general position, it is incumbent upon each insured to check their policy wordings for any stricter requirements and liaise with their insurer accordingly.*
*The use of BIM is* ***highly unlikely*** *to change the status quo and so these general principles should be enough for the majority of consultants, whether working in BIM or otherwise. For those consultants unfortunate enough to have insurer imposed requirements, consideration should be given as to the exact impact of these requirements with your broker.*
*[Note: see Section 2.2.5 of this list for specific requirements for "loss of documents".]*

2.2.4 Are there any "cyber" liability exclusions on the PI policy?
*It is unlikely, particularly when the CIC BIM Protocol is used, that cyber liabilities will attach to plain "users" of BIM systems. However, there are often exclusions found on PII policies which exclude liability for loss or damage to documents (i.e. designs/models etc) arising from the transmission of viruses or unauthorised access to systems. Some PII policies go further than this and seek to exclude all liability associated with loss, damage, or alternative of electronic documents howsoever this occurs.*
*It is therefore suggested that you approach your broker to ensure that the existing "cyber" exclusions on your policy are as narrow as possible.*

2.2.5 Is there any enhanced "loss of documents" cover and, if so, are there any enhanced storage requirements?
*Often, PII policies will provide (usually by extension) indemnity to their insured for the cost of restoring, reconstituting or replacing lost documents (electronic or otherwise) provided that certain conditions are met.*
*Although it is unlikely that this cover would be broadened, it is important to check that (a) the extension is on the policy; and (b) if there are any particular storage requirements which the documents must meet (see section 2.2.3). It is usual for there to be a requirement for electronic documents to be "backed up", though how strict the requirement is varies from insurer to insurer.*

2.2.6 What about circumstances where we are required to "host" the BIM environment?
*Hosting is described as an additional service in the CIC scope of services for Information Management.*
*For insureds looking to "host" a BIM environment, existing PII arrangements* ***will not be sufficient*** *and you should approach your broker to discuss the need for a specific technology policy, which are widely available and cut across various insurance classes (not just the PI exposures).*
*We therefore strongly recommend discussing the insurance implications of "hosting" BIM environments with your broker.*

## 2.3 The Proposal Form

For the first BIM project you have undertaken, you will have approached your broker for specific advice as above. However, the yearly return of the proposal form may see specific questions in this regard.

When consulting the industry, Griffiths & Armour found that a small number of insurers were thinking of introducing questions relating to BIM activities, though most did not think it necessary.

The reasons for such questions are:

- Insurers expressed interest in understanding what additional contractual duties were being taken up.
- Insurers were interested in understanding whether insureds were undertaking the role of Information Management.
- Insurers wanted to understand what protocols were being used (e.g. the CIC BIM Protocol).

Griffiths & Armour have sought to rebut the need for specific questions on the proposal form, given the fact that as a generality no insurer had significant issues with their insureds using BIM software and BIM enabled ways of working, and the information that could reasonably be expected to be provided would add little to the underwriting process.

One insurer added that should significant income be directly attributable to the role of information management, this could attract a lower rate, owing to the relatively low risk of this activity – though this was predicated on the basis the role went no further than a "procedural check".

In general, Griffiths & Armour were of the view, along with most of our construction consultees, that the potential limited benefit here was more than offset by the administrative burden of collating this additional information.

From a "recommendation" standpoint, there is little that individual insureds can do in this regard other than answer the proposal form as presented as fully as possible. Griffiths & Armour will continue to press the market to minimise additional information requests.

## 2.4 The Contractual Framework

The contractual framework here is two-fold – (i) the "BIM Protocol" (which, in the CIC version includes Appendix 1, the "Model Production and Delivery Table" and Appendix 2, the "Information Requirements"), which detail which models are produced by whom, to what standards; and (ii) the substantive references to compliance with the model in the appointment document.

2.4.1 As regards the BIM protocol, the document published by CIC has been discussed with insurers and is generally accepted as being "best practice". The CIC BIM Protocol should cause no significant issues for any insured, though disclosure to PI insurances (as advised in "The First BIM Project") is still advised.
Consequently, it is our recommendation that this protocol is used on all level 2 BIM projects and that "bespoke" protocols should be resisted. It is imperative to stress that a great deal of insurers' comfort comes from the proposed use of the CIC BIM Protocol and alternative (and perhaps more onerous) protocols could lead to unforeseen difficulty.
However, it should be stressed that we are clearly in the early days of development and whilst the CIC BIM Protocol should be seen as best practice, there are currently others in development (the CIOB Complex Projects Contract, which incorporates BIM, for example) which may provide equal protection.
Should bespoke protocols arise, then these will **need to be addressed on a case by case basis** with your brokers and insurers, in the same way as you would ask for advice on any contractual provision.

2.4.2 The references in the standard appointment terms ought to do little more than require that the relevant protocol is used and it is not envisaged that onerous terms would arise.
However, the language used to incorporate either the CIC BIM Protocol, or any other, should be checked to ensure it does not create an onerous obligation, for example a "guarantee" [see 2.2.2].

## 2.5 Working under BIM

As a generality, it was not felt that the use of a level 2 BIM environment significantly increased the risk profile of a design consultant firm.

Indeed, there were very good reasons why the use of such an environment could reduce the risk of claims arising, particularly those claims which only become apparent when the project is on site. The fact that an opportunity exists to model the "as built" project in some detail, and in 3D, was considered a potentially powerful risk management tool.

Insurers' comfort largely stems from the fact that, under level 2 BIM, there is sufficient detail to ensure that the lines of responsibility are clear and that models passed on to the Information Manager using the disciplines of standards such as PAS 1192-2 can be shown to be a particular consultant's work.

Should consultants find themselves working under a system whereby third parties can modify submitted models and the supporting information without robust checks in place, this could be a cause for concern and consultants ought to be informing their brokers and insurers. It was, however, the opinion of the BIM software experts that such a scenario was very remote indeed and that all the mainstream systems had appropriate safeguards to ensure that changes could not accidentally (or otherwise) come about without an appropriate audit trail being generated. The disciplines associated with working in the "Common Data Environment" outlined in PAS 1192-2 and managed by the Information Manager also contribute to providing these safeguards.

2.5.1 The Role of Information Management

Under the CIC BIM Protocol, the employer is obligated to appoint a party to the role of "Information Management". The Information Management role is expected to be undertaken as part of a wider appointment – typically the Project Lead or Design Team Lead. This commentary refers to the Scope of Services for Information Management published by the CIC.

The role defined by the CIC Scope of Service is not expected to cause insurers concern, on the basis that all design responsibility is to remain with the design team. Providing that the role is nothing more than a procedural check on data and spatial co-ordination and does not step into a "full" design check-type activity this should not give insurers too much cause for concern.

Clearly, the context of who undertakes this role is also important – if the role is assumed by a "design team leader" then the extent of the discrete role of Information Management is less important (as, ultimately, the design team leader would probably pick up the "checking"/co-ordination liability anyway). On the other hand, if the role was to be performed by a party not responsible for design (and the role goes beyond a simple procedural role) then this will cause alarm bells to ring.

2.5.2 The importance of "Level of Detail" and the Model Production and Delivery Table

One of the key characteristics of the CIC BIM Protocol that has given insurers a great deal of comfort is the existence of the notion of "Level of Detail" and the use of Appendix 1, the Model Production and Delivery Table, which defines the Building Information Models that fall within the scope of an agreement. The Protocol also defines the 'permitted purposes' – the uses to which a model and its data can be used.

The level of detail is defined in PAS 1192-2. Further development work in connection with a BIM Task Group project producing the "Digital Plan of Work" will provide further definition of the level of detail.

In summary, this concept allows all Project Team Members to know the extent and detail of the design being prepared; the specificity required for a particular element at a particular stage of the project; the parties who can use the design; and the purpose for which the design can be used.

Clearly, these aspects are key parts of the puzzle in establishing a clear liability picture and the fact that they are stated clearly in the CIC BIM Protocol means that the potential for overlap and mis-placed reliance is reduced.

2.5.3 "Too much design too soon"

Allied to the issue of the level of detail, there is a potential pitfall in taking the design too far along and designing beyond the level of detail required for a specific stage in the project.

The issue is that any information given to you upon which you are basing your own designs will have only been designed to a particular level, say, LOD 2. Should you progress your own design beyond what is called for by LOD 2, then there is a high likelihood that any design you have undertaken beyond the LOD 2 requirements will need to be redesigned as others progress and amend their own designs beyond the original LOD 2 requirements.

The CIC BIM Protocol has an express term that models are to be produced to the stated level of detail. Some bespoke agreements contain provisions that consultants that rely on information that has been provided above the required level of detail do so at their own risk.

2.5.4 Dealing with sub-consultants

The CIC BIM Protocol includes a provision that Project Team Members should require Sub-Consultants to enter into the Protocol so as to enable the lead consultant to comply with the Protocol.

Sub-consultants who are not part of the core Project Team may not have had to sign up to the BIM protocol, with all the procedures that entails. Additionally, many sub-consultants may not be utilising BIM enabled software and may continue to work in a traditional CAD environment.

Clearly, you will need to ensure that as they are not designing to, say, LOD 2 per se that the equivalent specification is passed down the contractual chain and the sub-consultant knows what is expected of him as regards the level of detailed design required.
Failure to do this could result in them "designing too far" (as 2.5.3) or, on the other hand, possibly not designing to the detailing requirements of a particular LOD stage. It is therefore important to check that non-BIM sub-consultants know what you are asking of them and that, if using traditional "work stages", that these meet the requirements of the relevant LOD on any particular project. The traditional work stage approach may not equate to the factors required by any particular LOD.

2.5.5 Status watermarks/revision numbers
Clearly, insurers' comfort comes from the traceability of the design process and ability of their insureds to demonstrate any third party changes to their settled design. This is true however the design process is managed, be it BIM, integrated project servers or traditional paper.
So, notwithstanding the points made above, in relation to the insurance position over the retention of documents, there is a clear need to retain a good trail of the documents posted to the Common Data Environment, or exchanged within the Project Team
Clearly in the BIM world, where there is going to be a greater incidence of data/information sharing, there is a greater need to demonstrate the provenance of documents and show that if a design, or aspect of the BIM model, is different from that sent from the consultant's office, that this change happened after being sent by a third party. The use of watermarks, revision numbers and "traditional" methods of managing the iterative process of design are therefore just as important as in the non-digital world. Although technology can assist greatly with this, electronic time/date stamping data can become corrupt.
It is clearly desirable to be able to easily find out what time/date that document was posted to the server, what revision number and the purpose for which the document was issued.
Processes set out in PAS 1192-2, the "Specification for information management for the capital/delivery phase of construction projects using Building Information Modelling" provide further comfort to insurers with regards to the trail of custody of information

2.5.6 Model software and model object/data licenses
If a model software or data licence is used on a project (i.e. a document determining who owns the IPR and who can use the model etc) then care will need to be taken that the licence allows the model to be passed on.
The CIC BIM Protocol includes a provision that the Project Team Member represents to the Employer that it has the right to pass on licences or sub-licences for the material or proprietary work contained within.
Say for example, the model had been prepared for the purposes of the employer's requirements prior to the appointment of the contractor. If the contractor were then to be appointed and, in turn, were to appoint his own design team do the new designers have a licence to use the model?
Ultimately, this will turn upon the provisions of any licensing provisions, which might form a standalone document, or which might be included in the substantive appointment documents. If there are restrictions on the ability to allow third parties a licence to use the model and the associated information, then this could lead to problems.
Similarly if, in the scenario above, you are one of the "new" designers, working for the contractor, then you could be in breach of contract and possibly open to a charge of copyright infringement – care needs to be taken by both sides.

2.5.7 Automated model checking software

There are a number of automated model checking software packages which allow designers to run pre-programmed checks, such as the compliance of a design with aspects of the Building Regulations.

It is important to note that the software supplier will usually exclude liability for claims that the building regulations have not been met and there is a risk that if you have relied upon the software without running a parallel manual check, that you will pick up liability in full, for what in effect could be a failure of the software.

It is therefore important that such software is used proportionately and that undue reliance is not placed on it. It is highly unlikely that you will be able to pass the costs of any claim to the provider of the software and, therefore, the claim will sit on your own PII insurance (and/or your balance sheet).