BUILDING INFORMATION MODELLING: ITS IMPACT ON INSURANCE, INTELLECTUAL PROPERTY RIGHTS AND DESIGN LIABILITY

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Introduction

In March 2011, a Government Strategy Paper was released which called for the use of Building Information Modelling (BIM) at Level 2 on all publicly procured projects by 2016.\(^1\) The Strategy Paper anticipated that BIM competence will be a requirement at pre-qualification stage, meaning that only contractors/consultants with BIM capability will make it through to later rounds of the procurement process.\(^2\)

The Government’s interest in BIM lies in the potential benefits that BIM promises: it should lead to zero defects and clash free construction, with the building being constructed twice, once in the Model and then on the ground, meaning that any design clashes should be apparent in the Model and resolved before the contractor is on site (though workmanship remains unaffected by BIM and so there is still room for error); design changes will be cheaper and easier to explore (as this can be done in the Model as opposed to on site); there should be greater certainty, in terms of cost and in terms of the project generally; and it should be clear at the start of the project what on-going management the building is going to require (including repair, maintenance and general whole lifecycle costs; it may even give an indication of energy performance). It has also been suggested that the use of BIM could lead to a net saving of 5% on new-build projects and 1.5% on refurbishments.\(^3\)

So what is BIM? BIM is a collaborative process by which all designers engaged on a construction project work together to create a single computer-generated 3D model. The Model will hold information relating to the whole lifecycle of the building allowing the facility to be planned, constructed and managed in a co-ordinated and efficient manner from inception, through use, to eventual decommissioning.

At Level 2 BIM, there will be a managed 3D environment held separately with attached commercial and other data. There will be a large degree of cooperation between the various designers and there will be a degree of integration. Integration is likely to be by use of ‘middleware’ (ie each

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2 Strategy Paper, note 1, Appendix 5.
3 Strategy Paper, note 1, Appendix 19.
designer completes their design separately and then all designs are merged). Programme and cost data may also be input into the Model. The BIM Academy has suggested that Level 2 involves inter-operability of four key elements: platform software; databases; specialist design analysis tools; and mechanism for asset data drops.

If Level 2 is as successful as anticipated, a move towards Level 3 is inevitable. Level 3 will be a fully open and collaborative process with all designers inputting into the one integrated model. The form of model at Level 3 has been referred to as a ‘fully inter-operable real-time BIM Model’. This is likely to be enabled by the use of a web service. Programme and cost data may be included in the model and facilities management information may also be integrated into the model at this stage. Some commentators discuss various sub-levels within Level 3, suggesting Level 3 can be 4D (the model contains time information), 5D (the model also contains cost information) or 6D (risk information is included in the model).

There is a concern that the level of integration and inter-operability required by BIM at Levels 2 and 3 will have an impact on: design liability, insurance (in particular professional indemnity insurance) and the ownership of data and/or the copyright in both the individual contributions to the model and the model itself.

**Design liability**

At common law, there is an implied obligation that where a contractor has responsibility for design, that design will be fit for purpose. A professional consultant, on the other hand, must simply exercise reasonable skill and care (ie he must not be negligent). However the market standard position on design liability, whether a contractor or consultant, is that the contractor or

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4 Strategy Paper, note 1, Appendix 3.
6 First Steps to BIM Competence, note 5, page 10.
7 Strategy Paper, note 1, Appendix 3.
10 Independent Broadcasting Authority v EMI Electronics Ltd 14 BRL 1, [1955-95] PNLR 179 (HL), where Lord Scarman stated: ‘In the absence of any term (express or implied) negating the obligation, one who contracts to design an article for a purpose made known to him undertakes that the design is reasonably fit for the purpose’ (PNLR report, page 208).
11 Bolam v Friern Hospital Management Committee [1957] 1 WLR 582, [1957] 2 All ER 118, [1955-95] PNLR 7 (QBD), where it was held that ‘... where you get to a situation which involves the use of some special skill or competence, then the test as to whether there has been negligence or not, is not the test of the man on the Clapham omnibus, because he has not got this special skill. The test is the standard of the ordinary skilled man exercising and professing to have that special skill’ (WLR report, page 586).
consultant will exercise reasonable skill and care and will only be liable to the employer in respect of a design defect where they fail to do so.\textsuperscript{12}

There is concern that the process in BIM will alter the relationships between the parties involved and, as a result, the lines of responsibility between those parties may become blurred. This may cause problems in identifying fault should a latent defect appear post completion.

Questions arise such as: Who is responsible for managing the model? If all designers are working on one model, who is responsible if there is an error? To what extent can each designer rely on the accuracy of the others’ design in the model? To what extent does the model constitute a contract document? What will be the priority of documents? What reliance can be placed on the data contained within the model? These questions will need to be expressly addressed in the contract.

The Strategy Paper makes a number of recommendations in respect of design appointments for BIM projects. These include: defining additional duties in schedules of services; defining duties for the role of information manager; and defining duties for the lead and other consultants.\textsuperscript{13} The report also suggests that to each and every appointment/building contract, a BIM Protocol is appended which is incorporated into the relevant contract.\textsuperscript{14}

Various BIM Protocols have been developed and it is helpful to look at how these address the issue of design responsibility.

The ConsensusDocs addendum specifically states that: ‘nothing in [the] addendum shall relieve the Architect/Engineer from its obligation, nor diminish the role of the Architect/Engineer, as the person responsible for and in charge of the design of the Project’\textsuperscript{15}

It also states that: ‘Participation of the Contractor or its sub-contractors and suppliers in Contributions to a Model shall not constitute design services.’\textsuperscript{16}

While this will give comfort to contractors on a project procured on a traditional basis, it will need to be deleted when the contractor is engaged on a design and build basis. Essentially, it does not require parties to assume any role other than their traditional roles.\textsuperscript{17}

\textsuperscript{12} The Scottish Building Contracts Committee (SBCC), Design and Build Contract 2011, lowers the standard of care from the common law position of absolute design responsibility, to one of reasonable skill and care: see SBCC DB/Scot (2011 edition), clause 2.17. The NEC3 Engineering and Construction Contract (ECC), contains a default fit for purpose obligation but has a reasonable skill and care caveat as an optional X clause: see NEC3 ECC June 2005 (with amendments 2006 and 2011) X15. The NEC3 Professional Services Contract (PSC), used to appoint consultants, does contain a reasonable skill and care caveat as standard; see NEC3 PSC April 2013, clause 21.2.

\textsuperscript{13} Strategy Paper, note 1, Appendix 5.

\textsuperscript{14} Strategy Paper, note 1, Appendix 5.

\textsuperscript{15} ConsensusDocs 301, Building Information Modelling (BIM) Addendum, clause 1.4: www.consensusdocs.org.

\textsuperscript{16} ConsensusDocs 301, note 15, clause 1.6.

\textsuperscript{17} See Richard H Lowe and Jason M Muncey, ‘ConsensusDocs 301 BIM Addendum’, Construction Lawyer, volume 29, number 1, winter 2009: ‘The addendum does nothing
The addendum also envisages the formation of the BIM Execution Plan. Rudi Klein’s view is that the Execution Plan will address a lot of the concerns raised about design responsibility as the plan should include, amongst other things, the identification of project participants responsible for creating each model.

The American Institute of Architects (AIA) Protocol states that: ‘the Architect will manage the Model from the inception of the project’. The Protocol goes on to note that the party responsible for managing the Model has the responsibility to perform clash detection.

The AIA Protocol envisages that the contract documents will set out the level of detail (LOD) that each Model is required to be designed to. Even if the design goes further than the required LOD, the other parties can only rely on the Model’s accuracy up to the defined LOD and that: ‘Any use of, or reliance on, a Model Element inconsistent with the LOD indicated by subsequent Model Element Authors or Model Users shall be at their sole risk and without liability to the Model Element Author’.

The Architectural, Engineering and Construction Industry Committee (UK) (AEC) BIM Protocol again is intended to supplement existing agreements, not to replace them. It too envisages the development of a BIM Execution Plan. The Protocol talks about roles and responsibilities, but it does so in very broad terms. Presumably to be drilled down in the BIM Execution Plan.

The Construction Industry Council (CIC) BIM Protocol guidance notes that the Protocol should be appended to appointments and will allocate responsibility between members of the design team. It advocates the appointment of an information manager and specifically states that clash detection remains the responsibility of the lead designer.

Even at Level 2, there is a need for the creation of a new role: the information manager. The CIC has produced a scope of services for information management. It envisages that the role will include: establishing a common data environment; implementing a BIM Protocol; maintaining the model to meet integrity and security standards; and managing the common data to alter the standard of care applicable to Project Participants under the common law or contract. According to the BIM addendum, the standard of care applicable to the model is determined by that Party’s governing contract, or common law, whichever is applicable.

20 AIA Document E202-2008, note 19, clause 2.4.3.
24 AEC (UK) BIM Protocol, note 23, clause 3.
environment processes and procedures.\textsuperscript{27} This raises various questions: who should carry out this new role? Does it lead to increased responsibilities and increased potential liabilities for that consultant?

The guidance notes which accompany the CIC scope of services make clear that ‘the Information Manager has no design related duties. Clash detection and model co-ordination activities associated with a BIM Co-ordinator remain the responsibility of the design lead’.\textsuperscript{28}

Given the desire to attempt to keep lines of responsibility clear, Gillian Birkby has suggested that the CDM co-ordinator should be appointed as the information manager. She argues that: ‘as the CDM co-ordinator is not a designer, if they take on the [Information] Manager role the lines of responsibility should be easier to identify if there is a problem’.\textsuperscript{29}

It seems to be generally accepted that no design responsibility is to sit with the information manager.\textsuperscript{30} The addition of this new role is therefore likely to have little impact on traditional liabilities.

It is suggested that it does not matter how the Protocols allocate responsibilities, as long as they do so. Richard Ward has noted that: ‘it is important that roles and responsibilities are clearly defined at an early stage, so that designers know the level of risk that they are being asked to accept. The legal documentation will need to be drafted to ensure that liabilities are allocated and known in advance’.\textsuperscript{31}

It is proposed that Level 2 is unlikely to alter ‘traditional’ responsibilities as understood on a non-BIM project. As Level 2 involves each designer creating individual Models, which are subsequently brought together, it should be clear, as a matter of fact, which designer was responsible for which element of the design. As a result it should be relatively clear whose design caused the defect which results in the loss. However, the employer will still have to prove that the faulty design arose as a result of the relevant party’s negligence.

Level 3 moves into the realm of a single integrated project Model. Here Protocols are likely to become integral to answering the questions around where design roles, responsibilities and liabilities sit, as it may be less clear as a matter of fact.

At Level 3, concerns are raised around the intelligent nature of the Model. A briefing note issued by Clifford Chance highlights that the ‘[M]odel could automatically modify other parts of the [M]odel, possibly without the original designer’s input or active knowledge. That could potentially expose designers

\textsuperscript{28} CIC/BIM Protocol: note 25.
\textsuperscript{30} See for example Gillian Birkby: note 29 and Fenwick Elliott (Jeremy Glover), ‘Legal issues surrounding Building Information Modelling’, 20 November 2012: www.lexology.com which highlight that design risk does not sit with the role of information manager, but with that of the lead designer.
to liability by deeming them to be aware of changes to their design made by others as part of the BIM process’.

The CIC Protocol specifically addresses this and notes that: ‘The Project Team Member shall have no liability to the Employer in connection with any corruption or any unintended amendment, modification, or alteration of the electronic data in a Specified Model which occurs after it has been transmitted by the Project Team Member, save where such corruption, amendment, modification or alteration is a result of the Project Team Member’s failure to comply with this Protocol’. It is suggested that there is no ‘right’ way to allocate this liability, and the key thing is that the Protocol does address and allocate it.

Both non-BIM and BIM projects procured by design and build procurement have the advantage of creating a single point of responsibility, and as such, the employer need not prove whether the defect was caused by workmanship or design errors, nor need it prove which consultant’s design was defective – the contractor is liable. In those circumstances blurred lines of design responsibility have little impact on the employer’s right of recovery (though it may be difficult for the contractor then to recover against its consultants).

In the sphere of BIM, it is arguable that the common law doctrine of joint and several liability would circumvent, at least in part, the concern around blurred lines of responsibility. It is arguable that if all parties are inputting into a Model, and that Model contains a design defect which results in a loss, then all parties are jointly and severally liable for that defect. The employer could then pursue any one of the design team members for the whole of its loss. If that were the case, designers will likely insist on the inclusion of net contribution clauses (the effect of which is that the employer can only pursue that consultant for the value of their contribution to the loss) and employers will be reluctant to see such clauses included.

In respect of design, the liabilities in a BIM project are no different from those on a non-BIM project. Contractors/consultants must exercise reasonable skill and care in respect of their design, and also in respect of their other obligations and responsibilities. In BIM there may however be additional responsibilities to which those traditional liabilities attach. For example, the architect is still likely to adopt the role of lead designer, though the functions of that role will now include clash detection. Jeremy Glover adopts this thinking and notes that: ‘the new technology and new ways of producing design do not change the fundamental legal principles’.

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32 Clifford Chance Briefing Note: note 8.
33 CIC/BIM Protocol, note 25, clause 5.2.
34 See Clifford Chance Briefing Note, note 8, which acknowledges that ‘where design and build procurement is used it will be more important than ever for the contract to impose full design responsibility on the D&B contractor (including responsibility for design work pre-contract) so that the client does not need to look into the history of how the BIM Model was created (assuming the contractor remains solvent of course)’.
35 It would then be for that team member to prove the contributions of the other negligent parties and recover those contributions from them.
Insurance

In respect of BIM it is important to consider insurance of the design risk. Professional indemnity insurance (PII) insures against professional negligence such as negligent design. This is maintained by consultants/contractors with design liability, and is generally a contractual requirement.\(^{37}\)

As already discussed, in a non-BIM project there are clear lines of responsibility for design, making it relatively easy to establish whose negligence resulted in the defect. The employer will then pursue that party under their contract.\(^{38}\) The relevant party’s PII policy will then respond to the claim. PII is written on a ‘claims made’ basis which means that the policy must be in place at the time the claim is made as opposed to at the time the harmful event occurred.\(^{39}\) However, the need to prove negligence for a PII policy to respond can be difficult and time consuming. The negligent party must also still be in existence for the claim to be met, meaning the risk of insolvency of the negligent party sits with the employer.

An alternative is latent defects insurance (LDI). Where LDI is used, it is maintained by the employer and provides cover against the risk of latent defects arising in the works post practical completion. These defects may arise as a result of poor design or poor workmanship. There is no need for the employer to prove fault in order to recover under the policy.\(^{40}\)

There are however drawbacks to an LDI policy: the defect must be latent, that is, if it was known about at the time of completion it will not be covered by the policy. There is no cover available before completion of the project. There are a relatively small number of underwriters that provide such policies and as a result they can be expensive.\(^{41}\)

LDI policies usually provide the insurer with rights of subrogation which allow the insurer to exercise any remedy which would have been exercisable by the employer in respect of its loss. In practice the insurer can pursue a claim against the negligent party in the employer’s name. Subrogation rights are not available against a party who is a joint insured under a policy.\(^{42}\) LDI policies usually only provide cover to those with a direct financial interest in the project, such as the employer or subsequent owner or occupier of the development.\(^{43}\)

\(^{37}\) See eg, SBCC DB/Scot, note 12, clause 6.12 and NEC3 PSC, note 12, Clause 81.1.

\(^{38}\) For a claim to be successful, the employer must be able to prove both fault and a failure to exercise reasonable skill and care. See MacRoberts, *MacRoberts on Scottish Building Contracts* (2nd edition, Blackwell Publishing, 2008), page 246.

\(^{39}\) Marshall Levine and Roger ter Haar QC, *Construction Insurance and UK Construction Contracts* (2nd edition, Informa Law, London 2008), page 146. It is therefore important that the policy is maintained throughout the duration of the project and for the duration of the contractor or consultant’s liability (the market standard is 12 years from practical completion).

\(^{40}\) Levine and ter Haar, note 39, page 171.

\(^{41}\) Levine and ter Haar, note 39, page 173.

\(^{42}\) MacRoberts, note 38, page 239.

\(^{43}\) Levine and ter Haar, note 39, page 174.
There is a general concern in the industry that BIM will result in an increase in a consultant/contractor’s risk profile, and that current insurance policies will not respond to a claim made on a BIM project. However, Aviva, the lead insurer on the Royal Incorporation of Architects in Scotland (RIAS) scheme has noted that RIAS feel BIM will actually decrease the risk of claims.44

Despite this, the Strategy Paper suggests that current insurance provisions are not compatible with the ethos of BIM. The Paper also notes that the framework of each party maintaining separate insurances is costly. The Government’s comments suggest a move towards integrated project insurance (IPI), which is discussed below.45

Having said that a consultant/contractor’s design liability is unlikely to be altered greatly on a Level 2 project, the current approach of each party maintaining their own PII should be sufficient to respond to claims made under such projects. This view is generally accepted among BIM commentators and by the Government.46

As emphasised in the CIC Best Practice Guide for Professional Indemnity Insurance, Level 3 will result in changes to construction insurances.47 The potential for blurred lines of responsibility will be of concern to insurers as risks may not be easily attributable to a particular consultant/contractor. The argument is that instead of reducing risk (early clash detection etc), there is in fact an increased risk because of the difficulty in allocating responsibility; the fact that a change in the Model made by one consultant could be carried through into another’s design; and the risk of corruption of electronic data.48

It has been noted that PII policies ‘are not easily adaptable to a situation where parties are crossing the divide between their delineated responsibilities’.49

IPI covers all the major parties involved in a construction project under one single policy. The policy does not only cover all the participants, but also covers all the main types of insurance usually required on a construction project including PII, LDI, and all risks insurance. Each policy is bespoke and relates specifically to the project.

45 Strategy Paper, note 1, Appendix 5.
45 Strategy Paper, note 1, Appendix 5 suggests that: ‘current insurance provisions for design and construction reflect the adversarial nature of the contractual relationships between the parties and the need to manage risk’. It goes on to note that the ‘arrangements support a blame/liability culture’ and that this has ‘a negative impact on collaborative working’. The Paper suggests that ‘the full benefits of collaborative working are more likely to be realised within a team environment with members committed to a set of common objectives – without the influence of third parties such as insurers’.
48 CMS Cameron McKenna (Monica Lesney and Rebecca Reidy), ‘Building Information Modelling – the impact on the insurance market’, 12 April 2013: www.lexology.com.
49 Rudi Klein: note 18.
In order for the policy to cover all parties, the insurers must waive their rights of subrogation. Given that waiving rights of subrogation increases the insurer’s risk, and that such policies are not currently widely available in the market place, the policies are usually very expensive. However, there is an argument that it may in fact be less costly than the sum of all parties’ insurance premiums taken together when insurances are procured in the traditional manner.

The benefits of such insurance include: a move away from a blame culture as insurers waive their rights of subrogation; as the insurance policy simply responds to the claim it avoids the need to question which team member caused the loss (as opposed to pursuing each team member under their contract and having to prove fault for their PII policy to respond); and it avoids the risk of a claim falling between gaps in policy coverage.

The prospect of widespread use of IPI raises the question, if the employer’s claim is met by the insurance, and the insurer has no right of subrogation, where is the incentive for contractors/consultants to exercise reasonable skill and care?

It is proposed that the system of IPI adopted must be similar to the American ‘Wrap’ insurance policies. With Wrap insurance, the employer pays the insurance premium, but each project participant pays a contribution by way of a reduction in their contract price. However the percentage contributed by each party is not fixed, and is subject to re-allocation among the project participants, the idea being that in the event of a claim, the negligent party will pay a higher percentage of the premium. Clearly this will still mean disputes among project participants, but they should have little effect on the employer. It is also suggested that higher premiums associated with a poor claims record will still be relevant and that this, along with the reallocation of premiums, will encourage the exercise of reasonable skill and care.

The Strategy Paper notes that IPI products have been developed but that these will need to be tested on a wide range of projects to ensure that they work sufficiently well. Given that the Government has hailed IPI as the way forward on BIM, it is likely that the market will develop more sophisticated and less costly policies in response to increased demand.50

Until the widespread introduction of BIM Levels 2 and 3 in the construction industry, it will remain unclear exactly how the insurance market will respond. Level 2 looks to require little or no change to current practices and although a move toward IPI seems likely, with Level 3 some way off, the industry appears to be adopting a wait and see approach.

**Intellectual property**

Intellectual property (IP) is also of concern in a BIM project. In the UK, the law is governed by the Copyright Designs and Patents Act 1988 (CDPA).

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50 Strategy Paper, note 1, Appendix 5: the Government believes that IPI will ‘have significant potential to serve as a liberating environment for the development of BIM’.
Copyright is the key form of IP in the construction industry. It protects the manner and form in which ideas are expressed. The most common example of the use of copyright is to protect a consultant’s design drawings.

An employer will always need to use copyright materials in some way, for example, marketing, repair and maintenance, demolition, extension and, of course, construction itself. It must however ensure that it has the right to do so, as a number of protections are afforded to authors and owners of copyright.\(^\text{51}\) Copyright protection is extensive,\(^\text{52}\) and an infringement of copyright is actionable by way of damages and injunctions.\(^\text{53}\) The CDPA also protects rights in databases.\(^\text{54}\)

On a non-BIM project, the main IP focus is on copyright. It is rare to see a transfer of copyright; instead, the owner usually grants a licence to the employer to use the copyright.\(^\text{55}\) That licence will be binding on every successor in title to the copyright\(^\text{56}\) and the market standard position is that such licence shall be non-exclusive, irrevocable and royalty free. There is also often an ability to grant sub-licences, and occasionally there is a waiver by the author of its moral rights.

The grant of a licence is sufficient on a non-BIM project as each consultant’s design is separate, making it easy to identify who owns the copyright in each element of the design. There is no need to consider who owns the Model or the Model outputs, as there are none. There is also no need to consider database rights, given that the as-built drawings are delivered separately in hard copy format, meaning that no database is created.

On a BIM project it is not that simple. Arguably, IP rights will be of even greater concern to consultants/contractors when a project is procured using BIM. ‘Model of a building’\(^\text{57}\) is likely to include the BIM Model which will also be protected as an electronic format document under the CDPA.\(^\text{58}\) The employer will arguably have a greater desire to use the copyright in the Model as ‘BIM capabilities offer great possibilities for the on-going management of a

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\(^\text{51}\) This includes the exclusive right to copy the work (CDPA, section 17) and/or make an adaption of the work (CDPA, section 21).

\(^\text{52}\) It lasts for 70 years from the author’s death (CDPA, section 12(2)) or in the case of computer generated works, 50 years from the end of the calendar year in which the work was made (CDPA, section 12(7)).

\(^\text{53}\) CDPA, section 96(1) and (2).

\(^\text{54}\) The Act states that: ‘database means a collection of independent works, data, or other materials which (a) are arranged in a systematic or methodical way, and (b) are individually accessible by electronic or other means’. (CDPA, section 3A(1)). Database rights last for 15 years from the end of the calendar year in which the database was created (see Copyright and Rights in Databases Regulations 1997 (SI 1997/3032) regulation 17).

\(^\text{55}\) See SBCC DB/Scot, note 12, clause 2.38; NEC3, note 12, core clause 22; and Association of Consultancy and Engineering (ACE) Agreement A(1) 2009, clause F6.1.

\(^\text{56}\) CDPA, section 90(4).

\(^\text{57}\) ‘Model of a Building’ attracts copyright protection, see CDPA, section 4(1)(b).

\(^\text{58}\) Although it is likely that the Model, being computer generated, would only qualify for 50 years protection, this is still an extensive period and employers must ensure they have the right to use the IP in the materials, particularly since the Model is of value for the whole lifecycle of the building.
building, for example, in relation to energy efficiency ratings, and hence an owner, and future owners or occupiers, may well wish to continue to use and develop the BIM [Model].

The employer (and future owners and occupiers), post completion, may want to adapt the Model and assess the impact that proposed changes will have on the building. The Model itself and its outputs have a huge value to the employer and currently market standard licences do not provide for manipulating the Model.

A BIM Model differs substantially from the 2D as-built drawings on a non-BIM project, as it contains a wealth of electronic information that can be transmitted almost instantly. The information in the Model will be capable of being extracted either in whole or in part and being re-used. The Model also holds more than simply the design. Within the Model there is likely to be a whole host of IP including: design data, cost data, design processes, tables, databases, and graphical information, each governed by the various statutory provisions discussed above. Addressing copyright alone will be insufficient and, at minimum, database rights must also be addressed.

Some commentators have drawn a distinction between the Model inputs and the Model outputs. It has been suggested that BIM should not impact on ownership of IP in the inputs, and that the current practice of IP vesting in the consultant/contractor who then grants a licence to the employer to use these inputs will not be affected. However, the question of who owns the IP in the Model outputs will be key. Commentators suggest that the Model outputs (which will include cost data, facilities management (FM) data, energy efficiency data etc) will be of greatest importance to the employer and, as such, ownership of them should vest in the employer. Although that approach is sensible, in order to transfer ownership of the IP rights to the employer, it has to be clear who owned them in the first place.

At Level 2, consultants are each working on individual Models which are then integrated to create the Model. It should therefore be relatively easy to trace ownership of each element of the design back to the individual consultant and attribute ownership of IP accordingly. The data contained in the Model is likely to include programme and cost data, but unlikely to include FM information.

It is anticipated that the information manager will be responsible for the integration of the various Models. In the case of an artistic work that is computer generated, ‘the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken’. Therefore, depending on the extent of their role, there may be a degree of copyright which vests in the information manager if it uses sufficient skill in co-ordinating the various Models.

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60 Including the Clifford Chance Briefing Note: note 8.
61 Clifford Chance Briefing Note: note 8.
62 CDPA, section 9(3).
63 Strategy Paper, note 1, Appendix 5.
It is proposed that the IP rights in the individual components will remain with the various consultants and IP rights in the Model as a whole may vest in the information manager (depending on the extent of its role). Given the limited value of the outputs at Level 2, there is unlikely to be much concern over who owns those outputs.

Without the need to consider Model outputs, the above evidence suggests a licence is likely to be sufficient on Level 2 projects. The employer will require a licence from the contractor, all consultants who have contributed to the Model, and the information manager. However, the current market standard licence will be insufficient. The main IP concern will still be copyright, but as a minimum; database rights must also be addressed. Granting a licence to use the copyright for the purposes of ‘the Works’ (see the Scottish Building Contracts Committee definition) will be insufficient. A key component of BIM is that it provides a live Model to be used long after the works are completed for the purposes of FM and, where necessary, eventual decommissioning. A licence will need to allow for this, as well as allowing for the use of the IP for modifications and demolition. The definition of contractor’s design documents will also need to be expanded to include the Model.

BIM Level 3 is expected to be a fully open and collaborative process with all designers inputting into one integrated Model from day one. With multiple contributors to one Model, it may be difficult to identify which consultant contributed which particular element of the design (unless software is developed which tracks this and leaves an audit trail). There is also the question of who owns the Model and the outputs generated by the Model. At Level 3, outputs are key as the data in the Model is likely to be more extensive than at Level 2 and more comprehensive in respect of FM, energy efficiency etc.

A Level 3 Model may be considered to be a work of joint authorship. Work of joint authorship means ‘a work produced by the collaboration of two or more authors in which the contribution of each author is not distinct from that of the other author or authors’. It is certainly possible that, given there will be a number of contributors to the Model and it may not be possible to distinguish where one consultant’s contribution starts and another’s ends, a work of joint authorship (and therefore joint ownership) will be created. Even if the inputs are easy to attribute to the various authors, the outputs will not be (and outputs are likely to be dependent on all of the inputs) so the outputs are always likely to be considered works of joint authorship. As with Level 2, a degree of IP rights may vest in the information manager, again depending on the extent of its role.

In the case of joint ownership the rights could not be assigned, sold or licensed without the consent of all the parties. Therefore, whether the employer requires ownership, or simply a license, all contributing parties must agree to this.

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64 CDPA, section 10(1).
Given that a key benefit of BIM is the outputs that it will generate, and given that these outputs will be of value to the employer, ownership of the Model sits most naturally with the employer. It must have free reign to use these outputs as it desires and manipulate the Model where necessary. As such, at BIM Level 3, the employer will require all joint authors to transfer ownership in the IP (including both copyright and database rights) to it; a license will be insufficient.

Conclusions

It is proposed that the concern that BIM will have far reaching legal implications is unfounded. All issues in respect of design liability, insurance and IP can easily be dealt with simply by agreeing the commercial approach at the very start of a project and drafting to reflect the commercial agreement. Given the degree of integration and co-operation required on a BIM project, it is proposed that it will be far less common to see consultants/contractors appointed on the basis of anything other than a comprehensive construction package which provides for allocation of design liability, insurances and transfer of ownership or an enhanced licence where necessary.

It is the conclusion of this paper, that although BIM may involve radical changes to the construction industry on the ground, there will be no radical changes required to the legal framework of the industry generally.

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Appendix
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