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Legal Aspects of BIM

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BIM Level 2

“a series of federated models prepared by different design teams (the number of models and purpose to be determined by the Employer), put together in the context of a common framework for the purpose of being used for a single project with licences granted to other project teams members to use the information contained in the federated models.”

NBS Roundtable 12 July 2012



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Basic Principles

“Effective management of the design process is crucial for the success of the projects.”

“... design needs to be properly integrated with construction and performance in use.”

“Investment in high quality design, by an integrated team, is crucial to the success of any construction project. It is at the outset of a project that the vast majority of value can be created through design and integration.”



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Basic design principles

“... a professional man should command the corpus of knowledge which forms part of the professional equipment of the ordinary member of his profession. He should not lag behind other ordinarily assiduous and intelligent members of his profession in knowledge of new advances, discoveries and developments in his field... He must bring to any professional task he undertakes no less expertise, skill and care than any other ordinarily competent members of profession would bring, but need bring no more. The standard is that of the reasonable average. The law does not require of a professional man that he be a paragon, combining the qualities of polymath and prophet.”

Bingham LJ

Eckersley v Binnie & Partners



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Obligations of the designer

- The importance of the design brief
 - (i) *Stormont Main Working Men's Club v J Roscoe Milne Partnership*
- The duty to review the design
 - (i) *New Islington and Hackney Association Ltd v Pollard Thomas and Edwards;*
 - (ii) *Brickfield Properties v Newton;*
 - (iii) *Merton v Lowe;*
 - (iv) *Edelman v Boehm.*



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Obligations of the designer

- Errors

- (i) *HOK Sport Ltd v Aintree Racecourse Co Ltd;*
- (ii) *Chesham Properties v Bucknall Austin.*

- Duty to warn

- (i) *Brunswick Construction v Nowlan;*
- (ii) *Plant v Adams;*
- (iii) *Aurum Investments Ltd v Avonforce Ltd (in liquidation);*
- (iv) *J Murphy & Sons Ltd v Johnston Prevast Ltd.*



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Obligations of the designer

- Knowledge of standards and codes

(i) *Gloucester HA v Torpy*

- Delegation

(i) *Arbiter Group plc v Gill Jennings;*

(ii) *EADC v Moss;*

(iii) *Merton v Lowe.*



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Sharing liability

- Law Reform (Contributory Negligence) Act 1945;
- Civil Liability (Contribution) Act 1978;
- Net contribution clause;
- PI Insurance liabilities.



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“Someone who undertakes, on terms such as those of the contract ..., an obligation to complete a design begun by someone else agrees that the result, however much of the design work was done before the process of completion commenced, would have been prepared with reasonable skill and care.”

HHJ Seymour
Co-operative Insurance Society Ltd v Henry Boot (Scotland) Ltd



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What do we have in the UK?

Key documents:

- CIC BIM Protocol (draft for consultation) ;
- AEC (UK) BIM Protocol;
- RIBA BIM Overlay to the RIBA Plan of Work;
- JCT Public Sector Supplement 2011;
- CIOB Complex Projects Contract (draft for consultation);
- (Draft) PAS 1192-2:2012 – BIM – Information requirements for the capital delivery phase of construction projects.



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What is the purpose of a BIM Protocol?

- To maximise production efficiency through adopting a coordinated and consistent approach to working in BIM;
- To define the standards, settings and best practices that ensure delivery of high quality data and uniform drawing output across an entire project;
- To ensure that digital BIM files are structured correctly to enable efficient data sharing whilst working in a collaborative environment across multidisciplinary teams both internally and in external BIM environments.



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Key features of the BIM protocol

- Definitions;
- Establishes priority of the contract documents;
- Obligations of the Employer;
 - Put a Protocol in place
 - Appoint the Information Manager
- Obligations of project team members;
 - Produce the specified models
 - Collaborative working practice
- Electronic Data Exchange;
 - No warranty for data integrity
- Use of models;
 - Copyright
 - Licences related to permitted purposes
 - Limitations related to the extension of a project
- Limitations on liability associated with models.



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AEC (UK) BIM protocol

- Identification of key project tasks, outputs and model configuration;
- Regular project reviews to ensure model integrity and project workflow;
- Clear guidelines for internal and external collaborative working;
- Clear ownership of model elements through the life of the project;
- Sub-division of models between disciplines and within single disciplines to avoid file sizes becoming too big or slow;
- Understand and clearly document what is to be modelled and to what level of detail.



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AEC (UK) BIM protocol

Sub-clause 4.3:

“Legal Stuff

Not included in this release.”



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CIC BIM Protocol

- The Employer operates the Protocol in connection with all the professional appointments and the building contract;
- Incorporated into the contract through express clauses;
- Protocol addresses specific obligations associated with the model;
- Does not alter design obligations associated with other deliverables;
- Does not create liabilities between team members;
- Need to appoint a BIM (Information) Manager;
- Creates specific obligations in connection with the model and the management of information.



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CIC BIM Protocol

- Appendix 1: Level of Detail and Model Production and Delivery Table:
 - Formalises the Level of Detail required at a Project Stage
 - Defines which party produces which Project Outputs at which project stages
 - Can be amended and populated in line with procurement strategy
 - Can be substituted by the Employer's own preferred format
 - Imposes an obligation to produce information in the form of a Model and to comply with the Information Plan – it does not extend the scope of an appointment.
- Appendix 2: BIM Information Plan:
 - Encourages consistent practice
 - Creates obligations in connection with information management that have previously been implied and under-enforced.



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The purpose of the BIM Execution (or Implementation) Plan

By developing a BIM Execution Plan, project team members can:

- Clearly understand the strategic goals for implementing BIM;
- Understand their roles and responsibilities for Model creation, maintenance and collaboration at different stages of the project;
- Design a suitable process to participate in the implementation;
- Define the content, level of detail and by when the Model is to be delivered to meet which objective;
- Outline additional resources;
- Provide a baseline plan to measure progress throughout the project; and
- Identify additional services needed in the contract.



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Contents of the BIM Execution (or Implementation) Plan

- Prepared by the Lead Designer;
- Model origin and orientation;
- File naming convention;
- Templates;
- Abbreviations/dimensions;
- Authorisation process;
- Information approval process;
- Software versions and exchange formats;
- Electronic Document Management Systems;
- In addition to but aligned with the Construction Programme and the Design Programme.

RIBA Overlay



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Key terms/Key people

- Lead Designer;
- BIM Information Manager or BIM Model Manager;
- Model User.



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The BIM Information Manager

The draft PAS 1192-2:2012 requires the Information Manager to:

“provide a focal point for all information modelling issues in the project; ensure that the constituent parts of the Project Information Model are compliant with the MIDP [Master Information Delivery Plan]; [and] ensuring that the constituent parts of the Project Information Model have been approved and authorized as “suitable for purpose” before sharing and before issuing for approval.”



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The BIM Information Manager

- Appointed by the Employer, Lead Designer, Contractor?
- To co-ordinate the use of BIM on a project;
- Responsible for establishing and implementing the BIM Execution Plan;
- Responsible for user access to the BIM Model;
- Responsible for establishing the parameters of model management, including coordinating the submission of individual models and their integration;
- Data security;
- Maintain a data archive.



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Co-ordination at BIM Level 2

- Remember, each party owns their discipline-specific model;
- During the co-ordination process, the models are linked (referenced) together into one federated model;
- One potential purpose of the protocol is intended to ensure that the liabilities of each discipline-specific model (and designer) remain the same, before and after the incorporation into the federated model;
- If each party is responsible for their own model, to what extent is the Information Manager liable when clashes are not detected or the design is not coordinated?



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Co-ordination at BIM Level 2

The draft PAS 1192-2:2012 suggests that:

- The Lead Designer shall be responsible for the coordinated delivery of all design information;
- The role of the Information Manager is therefore not meant to be that of the Lead Designer;
- The Information Manager is responsible for the management of information, information processes and compliance with agreed procedures, not the coordination of design; and
- If the parties agree that this to be the role of the BIM Information Manager, this needs to be identified and dealt with in the BIM Protocol - otherwise a potential conflict arises as regards to design and design coordination roles.



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What to bear in mind when drafting your contract

- Confidentiality;
- Take care with (inevitable) bespoke requirements;
- Use EIRs (Employers Information Requirements) and a BIM Protocol where you can;
- Ensure there is a use for the data being collected – don't get too hung up on the technology side!
- Remember to clearly define roles and responsibilities;
- Ensure clarity over deliverables: who must do what and by when;
- Integrating data drops depends on consultants/contractors meeting agreed deadlines;
- Identify opportunities for value-added data capture and information exchange at an early stage;
- The road to increased collaboration.



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What to think about on a practical level

- Standards;
- Roles and responsibilities;
- Work planning;
- Design management;
- Data segregation;
- Security issues;
- Level of detail definition;
- Coordination and clash detection;
- Model sharing process;
- Model review meetings;
- Health and safety;
- Training.



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CIOB Contract for use with Complex Projects: 9.1

- In so far as the Specification requires the Works or any part or parts of the Works to be designed using a Building Information Model it shall be prepared in a Common Data Environment to which both parties, the Contract Administrator and the Listed Persons have access and
- Unless stated otherwise in the Specification, the Employer shall own the Building Information Model and any drawings or information extracted from it
- Use by the Contractor of the Building Information Model inconsistent with the Level of Development identified in Tables 1 and 2 of Appendix C shall be at the sole risk of the Contractor
- To the extent and for the purposes stated in Table 1 of Appendix C, information required for analysis, review tendering or bidding and construction purposes shall be extracted from the Building Information Model, and
- Unless authorised by a licence for such specific purpose, the Design Contributors and Design Users may not modify, transmit or use the Building Information Model for any propose whatsoever except in connection with and for the purposes of the Works and consistent with the Level of Development indicated in Table 1 of Appendix C to which the Building Information Model is prepared.



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CIOB Contract for use with Complex Projects: 9.2

Where the Contractor is required by the Specification to prepare a Building Information Model for the whole of the Works the Contractor shall:

- Appoint its own design coordination manager to act on its behalf who shall be responsible for managing the Design Execution Plan;
- Provide a Common Data Environment to which the Contract Administrator shall have access;
- Select and remain entirely responsible for the suitability and integrity of the selected software and any information, drawings, specifications or other information extracted from the Building Information Model;
- Obtain the digital signature of the Employer and Contractor at the completion of each Level of Development;
- Maintain and update the model as required by the Contract Administrator throughout the course of the Works; and
- Archive each completed Level of Development in accordance with the requirements stated in the Specification.



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CIOB Contract for use with Complex Projects: 9.3

Where the Contractor is required by the Specification to make a Design Contribution to a Building Information Model prepared by or under the direction of the Employer:

- The Design Contributor shall comply with Table 2 of Appendix C;
- Maintain and update the Design Contribution as required by the Contract Administrator throughout the course of the Works, and

The Contractor shall:

- Indemnify all other Design Users against any liability, whether direct or consequential, arising out of or in connection with the Contractor's Design, and
- Notify the Contract Administrator and the Design Coordination Manager of any clashes, potential clashes, or inconsistencies between the Contractor's Design and that made by any other Design Contributor.



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Conclusions

In March 2011, the Government Construction Client Group (GCCG) concluded in its Strategy Paper that:

“...little change is required in the fundamental building blocks of copyright law, contracts or insurance to facilitate working at Level 2 of BIM maturity. Some essential investment is required in simple, standard protocols and services schedules to define BIM-specific roles, ways of working and desired outputs. Looking forward to the achievement of Level 3 integrated working, there are limited actions related to contracts, appointments and insurance that could be taken in advance to facilitate early adoption of integrated working.”



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Further information

- AEC (UK) BIM Protocol:

<http://aecuk.wordpress.com>

- RIBA BIM Overlay to the RIBA Plan of Work:

<http://www.ribabookshops.com/plan-of-work>

- JCT Public Sector Supplement 2011:

<http://www.jctltd.co.uk/public-sector.aspx>

- (Draft) PAS 1192-2:2012 – BIM – Information requirements for the capital delivery phase of construction projects:

<http://www.cic.org.uk/activities/PAS1192.pdf>