DIOHAS

Designers' Initiative Of Health And Safety

Meeting Record

Date21st November 2022 (Mon), 16:30-18:00VenueVideo conference using Microsoft Teams

Chair Paul Bussey

Topic Pre-Construction CDM Industry Report

Attendees	Name	Organisation
Attenuees 1	Paul Bussey (chair)	AHMM
2	Professor Issaka Ndekugri (guest speaker)	University of Wolverhampton
3	Dr. Nii A. Ankrah (guest speaker)	Aston University
4	Aamir Shahzad	Currie Brown
5	Benjamin Ralph	Foster + Partners Limited
6	Gary Burden	Arcadia
7	Chris Ottaway	Ottaway and Associates
8	David Stanley	Martin Arnold
9	Elliott Lockyer	Malcolm Hollis
10	Ewa Cebula	C4 Projects
11	Ewefola Akintunde	Arup
12	Fay Ferguson	Morris+Company
13	Frances Crow	Crow Architecture
14	Gary Walpole	NFRC
15	Glauco Borel	?
16	James Taylor	Nicholas Hare Architects
17	Jasmine Adley	Currie Brown
18	Jeffrey Tribich	Tribich Consultancy
19	Jeremy Williams	Grid Architects
20	Ken Pike	Pike Associates
21	Liesl Dommisse	Bernard Sims Associates
22	Mark Reynolds	Boundary Concepts Limited
23	Mark Skinner	Hawkins Brown
24	Martin Thorpe	Mott MacDonald
25	Martin Touška	Rolfe Judd
26	Mohamed Merchant	TUV SUD
27	David Mulligan	Public Practice
28	Nick Panayiotou	P&P Architects Ltd.
29	Oliver Thomas	?
30	Olivia Firth	DJD Architects
31	Peter Hegarty	Chapman Taylor
32	Peter Kwan	C4 Projects
33	Peter Taylor Peter Waxman	Leslie Clark
34 35	Richard Price	Black Cat Consultancy Sweco
36	Richard Mills	Reardon Smith Architects
30 37	Robert Franklin	Realdon Shifti Architects Robinson & Hall
38	Sarah Susman	Scott Brownrigg
39	Shephard Ndlove	UCLan School of Engineering
40	Alain Speed	PRP Architects
41	Stephen Coppin	SJC Risk Management
42	Steven Sidaway	?
43	Tony Putsman	: ICE Health and Safety Panel
44	Glenn Moorley	AHMM
45	Christian Ndaguba	AHMM
46	Goh Ong	AHMM
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NOTE ON COVID-19: Since 23rd March 2020, all DIOHAS meetings will take place

over video conference.

Agenda Presentation Title: Building Safety Act (BSA) Updates

Agenda (as worded in meeting invitation):

Our guest speakers for the meeting are Dr Issaka Ndekugri and Dr Nii A. Ankrah. They will be presenting their report on Pre-Construction Stage Risk Management.

Please see attachments for details.

Recording Link to the recording of the meeting:

https://www.youtube.com/watch?v=wozzCiZk0zc

Dr Issaka Ndekugri is a Professor of Construction and Engineering Law at the University of Wolverhampton and Director of its MSc Construction Law and Dispute Resolution course. With advanced qualifications in Engineering, Management and Law from world class universities and relevant industry experience, he is the archetypal professional hybrid able to communicate with a wide range of functional managers/directors in organisations on a highly informed basis. He has been Principal Investigator or Co-investigator on €5.5+M of funded research and development projects including construction health and safety related projects. Dr Ndekugri's research and innovation leadership capability includes 150+ refereed journal publications and a Gold-award winning textbook on construction contract administration. He has supervised 14 successful PhD candidates many of whom have progressed to become highly successful academics in their own right. He is the 2017 winner of UK's Institution of Civil Engineers' Parkman Prize.

Dr Nii A. Ankrah is a Senior Lecturer in Quantity Surveying and Deputy Head at the Department of Civil Engineering, Aston University. He has over 15 years research experience in organisational behaviour and project management in construction. He has delivered funded research in construction health and safety, supply chain management, dispute resolution, cradle to cradle in the built environment and circular economy. He also undertakes consultancy in these areas and is well published with over 57 refereed publications. Many of his projects in the past 10 years have focused on H&S in construction.





PRE-CONSTRUCTION STAGE RISK MANAGEMENT

Models of practice in the management of occupational safety and health risks







SYNOPSIS

The aim of this study, dubbed 'Pre-COSH' (Pre-Construction Occupational Safety and Health), was to examine current industry practice and procedures for health and safety (H&S) risk management and to develop a flexible model for simulating effective CDM 2015 compliance during the pre-construction phase of projects.

Fourteen focus group discussion workshops with over eighty industry stakeholders and practitioners were held to collect and synthesize knowledge of the range of specific practices and procedures through which CDM 2015 are implemented with specific emphasis on H&S risk management during the pre-construction stage of construction projects, and to develop recommendations for:

- (a) improvement actions;
- (b) policy review; and
- (c) changes in regulation that could facilitate more effective H&S performance.

This was supported by analysis of prosecutions data, review of standard contract forms and evaluation of case studies of recent/on-going projects.

The resulting report on the findings is divided into **eleven (11) chapters**.

- 1) sets out the **rationale for the study**, key research questions and the primary aim and objectives of the study.
- 2) provides an **overview of the CDM 2015 Regulations**. It sets out the legal framework of the Regulations, including its cardinal requirements for: (i) cooperation, coordination and communication; (ii) skills, knowledge, experience and organisational capability; and (iii) prevention. Roles and documents are also considered.
- 3) describes the research design adopted to ensure delivery of rigorous findings.
- **4**) maps out clients' **health and safety arrangements**, in particular the approaches to assembling project supply chain with right focus on H&S and associated challenges.
- 5) extends this by exploring the mechanisms for assessing skills, knowledge and experience and organisational capability (SKE/OC) of the supply chain. It first outlines a theoretical framework for assuring an adequate level of SKE/OC, then critiques the current SKE/OC assessment regime and implications for the British Standards Institution (BSI) Flex 8670: v3 competence framework.
- **6**) covers the **health and safety design coordination function** and the critical role of the Principal Designer. It examines how this role is currently deployed and challenges of the role.
- 7) addresses the **principal CDM documents**, including risk documentation and registers. It explores the nature of the documentation, preparation and updating approaches, contributors, quality control, and challenges to the preparation and use of such documents.
- **8**) interrogates **collaborative risk management** (CRM) at the pre-construction stage by identifying the main approaches to realising this and existing barriers.
- **9**) provides an analysis of **health and safety provisions in standard form contracts**, with particular focus on risk allocation provisions.
- **10**) draws together **insights** from the previous chapters to **offer a model of practice** for delivering effective H&S risk management at the pre-construction stage. It also describes the design/architecture of a simulator PRECOSIM, that could be used to provide H&S training to practitioners.
- 11) sets out conclusions and recommendations. Recommendations are proffered regarding empowerment of clients, attention to matters of health, quality and accessibility of CDM documents, digital tools, practice guidance on CRM, H&S content of contracts, resourcing the PD role for effective performance, ensuring adequacy of client action within gateway regime, and project insurance models.

Details of the case studies examined can be found in **Appendix B** of the report.



This report is authored by:

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Presentation by:

Professor Issaka Ndekugri, University of Wolverhampton Dr Nii Ankrah, Aston University







Presentation outline



Aim and Objectives

Research Methods

Principal findings

- Client's role
- Assessment of SKE/OC
- The Principal Designers
- CDM documents
- Collaborative risk management

Recommendations

Conclusion



The Research Team







Project Aim









To investigate OSH risks management practices adopted at pre-construction stages in implementing CDM 2015



To analyse contractual provisions on CDM duties



To define internal and external organisational structures adopted for the performance of CDM duties



Objectives



To develop a framework for taxonomising SKE/OC and how to operationalise them



To develop recommendations for policy and regulatory reviews



To develop a preconstruction OSH risk management simulator (PRECOSIM)



Research Approach

Analysis of CDM Regs & prosecutions data

Analysis of CDM-related contractual provisions

Focus groups and analysis of workshop data

Case study analysis

Workshop themes

The Client and Project H&S

The Principal Designer's duties and Project OSH

The OSH-minded Designer

Design integration under CDM

CDM Support Services

The Principal Contractor's duties and Project H&S

The Contractor's duties and Project H&S

Working collaboratively on site for health and safety

Cooperation, coordination and communication for H&S

Participants	Frequency (%)
Client	11 (12.4)
Principal Designer	27 (30.3)
Designer	4 (4.5)
Principal Contractor	12 (13.5)
Contractor	6 (6.7)
Other	29 (32.6)
Total	89 (100)



The Client's Role



The bedrock principle

- Client has greatest influence on H&S outcomes
- Must therefore make arrangements for managing the project which ensure, sfairp, that work can be carried out without risks to H&S



Specific duties

- appoint PD and PC possessing necessary SKE/OC before start of construction
- ensure sufficient time and other resources for safe delivery of project
- provide PCI of good quality to designers and contractors
- ensure CPP is prepared before commencement of construction



The Client's Role

The Client's H&S arrangements

Dependence on third party health and safety arrangements such as Principal Designers, CDM advisors, and health and safety consultants

Reliance on in-house health and safety teams and systems

Early project collaboration meetings

Health and safety agenda setting through client brief

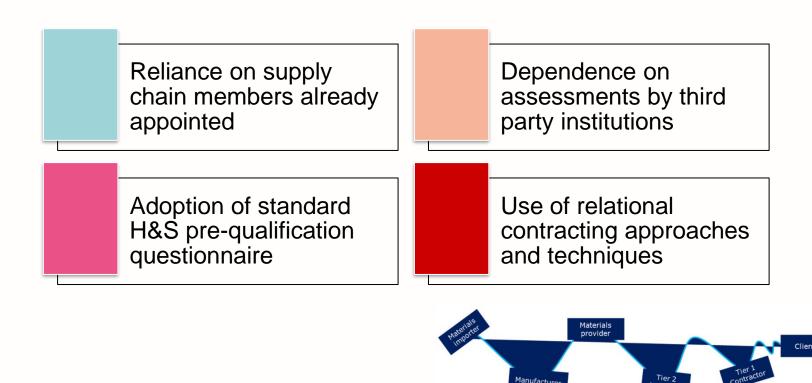
Use of contractual arrangements between project participants

Use of in-house health and safety teams and structures with support from external health and safety consultants



The Client's Role

Approaches to assembling project supply chain



1

Clients' H&S capability still sub-optimal

- Among domestic and one-off clients
- Reliance on third parties e.g. PMs
- The failure to appoint PDs in a timely fashion
- The inadequate resourcing of PD role
- PDs being removed before project completion
- A tick-box approach





SKE/OC



The bedrock principle

- Need for appropriate H&S competence
- Anyone (i.e., Designers, PD, PC, Contractors) appointed to work on a construction project must have the SKE/OC to fulfil the role
- Any person responsible for appointment is under a duty to take reasonable steps to satisfy itself that the appointee has the SKE/OC to carry out the work
- Failure to fulfil these duties is a criminal offence for which the appointer and the appointee may be prosecuted



SKE/OC



he theory

- SKE/OC are multi-dimensional constructs
- Requires consideration of various complimentary attributes that dutyholders must possess at an appropriate level of specificity for each domain of SKE/OC required for a project
- Evolution of attributes evident across the iterations of the CDM Regs
- Therefore, complex to assess



WOLVERHAMPTON Assessment of SKE/OC



- Certified H&S management systems based on BS OHSAS 18001 (or equivalent)
- Bespoke pre-qualification questionnaires (PQQ) or selection questionnaire (SQ)
- Use of standardised PQQs based on PAS 91
- Assessment and certification by registered member of Safety Schemes in Procurement (SSIP) based on core criteria
 - With mutual recognition under 'Deemed to satisfy'
 - Annual renewal
 - Widespread adoption

2

Commercialisation of SKE/OC assessments by schemes

- But concerns remain regarding conflicts of commercial interests in the administration of the SSIP scheme.
- 'Deemed to satisfy' is not applied fully, and clients still insist of specific scheme members





The Principal Designers The Principal Designers





The bedrock principle

- Required if more than one contractor on site
- Individual/organisation
- Appointed as soon as practicable
- to assist Client with management of H&S risks at the pre-construction phase
- H&S outcomes very much predicated on early appointment of PD



The Principal Designers The Principal Designers



Category	Who acts as PD?
Reliance on third party arrangements	 Principal Contractor as Principal Designer with support from health and safety advisors and designers (14) Lead designer as Principal Designer with support from CDM advisors and health and safety consultants (8) Lead designer as Principal Designer (4) Principal Contractor takes over Principal Designer role after pre-construction stage (4) Conversion of Principal Designer role to CDM advisor after pre-construction stage (2) Appointment of non-UK entities as Principal Designers with support from UK-based health and safety advisors (2) Project manager as Principal Designer (1) Project manager as Principal Designer with support from external health and safety advisors (1)
Exploitation of owner in- house capacity with external support	 Client as Principal Designer (11) Client as Principal Designer with support from CDM advisors and health and safety consultants (2)



Nature of Appointment Nature of Appointment



Current practices

Category	When?
Timing of appointment	Early appointment (7)Late appointment (4)
Duration of appointment	 Engagement throughout project (13) Involvement as when services are required (4)

Category	Who?
Type of agency	Organisation (13)Individual (1)
Background	 Architect (4) Quantity Surveyor (1) Health and Safety Practitioner with support from Designers (1) Engineer (1) Quantity Surveyor with support from Designers (1)



Functions of the PD

Current practices

Competency checking

Client awareness and support

Information management

Review and communication

"Aside from your mandatory role, you get hit by the Client and they expect you to do a lot more of the time, whether it is reviewing competence of appointees."

"So my role, and our company's role acting as the PD, is to educate Clients at all times. it's actually spending the time and talking to them and trying to make them understand what their requirements are under the Regs"

"we end up being investigators...
You know, you are trying to draw out information and the Client doesn't have the information you want"

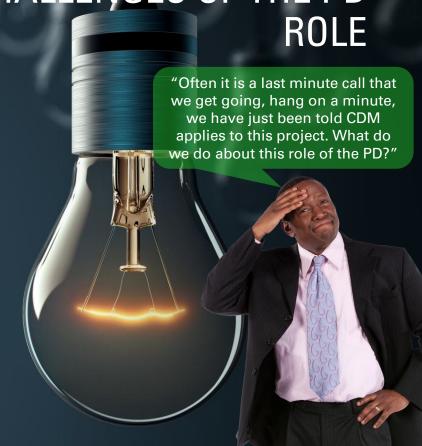
"The PD drives design review meetings, you know. They head up design review meetings and challenge the design team with regard to principles of prevention."

CHALLENGES OF THE PD

3

Opportunism/gaming by some clients regarding PD appointments leading to ineffective PD role

- Late appointments
- Impose fee constraints
- PDs appointed lack confidence to challenge designers
- Seen as only a pre-construction role
- PDs concentrate on preparation and sharing of PCI and HSF to the exclusion of leadership
- PDs treat engagement as an extra income generation opportunity with very little real responsibility.









The bedrock principle

 Effective risk management requires preparation of a variety of documents



Jocuments

- Documents expressly required
 - Pre-Construction Information
 - Construction Phase Plan
 - Health and Safety File
- Procedure and content left to project participants



CDM documents



Theme	Details
Nature	 Surveys (28) Existing health and safety file (5) Clients brief (4) Live document till tender stage (7)
Approaches to preparation	 Adoption of industry templates and regulatory guidance list (6) Visualisation of information (5) Summary and sign-posting pre-construction information in tender documents (5) Reliance on Health and Safety File (5) List of Client's pre-construction information built into contracts of appointees (4)
Contributors to preparation	 Principal Designer (PD) (19) CDM Advisors (3) Principal Contractor (PC) (2) Designers (1)
Mode of communication	 Centralised information platforms (8) Report (2) Hard and USB drives (1) BIM tool (1) Tender document (1)

"From my experience, PDs issue a summary PCI document that collates together the bits of information, explains their relevance and importance, and says to the contractor, you can find the information here in this box or...here on this drawing and you must refer to it, in your CPP."





CDM documents



Construction Phase Plan

Theme	Details
Nature	 Volume dependent on project size (4) Word document supported by drawings and low technology BIM (1) Live document (2)
Mode of communication of CPP information	Use of central repositories (3)Paper-based document control system (1)
Approaches to preparation	 Emphasis on significant health and safety risk by project parties (9) Principal Contractor early preparation of CPP in tandem with design process (2) Use of industry wizards and templates (2)
Contributors to preparation	Principal Contractors (8)Principal Designers (4)Sub-contractors (2)
Controlling quality of CPPs	 Principal Designer reviews CPP (6) Health and safety consultants review CPP on behalf of Clients (2) Clients in-house team reviews CPP (1)

"From my experience, depending on the size of the project, I have had anything from one page construction phase plan to 400 pages. So you go from both ends of the spectrum"





CDM documents

Health and Safety File

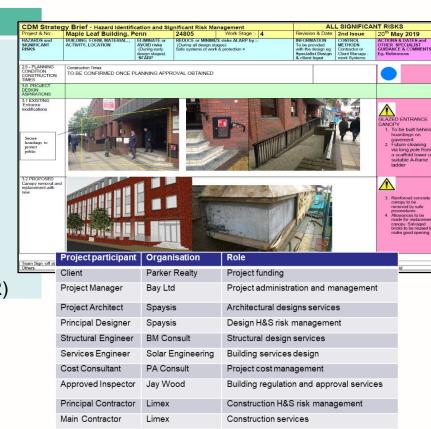
Theme	Details
Nature	 Residual hazards (6) As-built drawings (5) Structural calculations (2) Live document (5)
Approaches to preparation	 Use of templates (14) Third party supervision (3) Use of contractual tools (1) Design analysis report (1)
Contributors to preparation	 Principal Designer (15) Designers (8) Principal Contractor (3) Contractor (2) CDM advisor (1)



WOLVERHAMPTON Other risk management documentation

Terminologies

- CDM Strategy Brief
- Responsibility matrix
- Risk register (10)
- Design risk register (7)
- Residual risk register (7)
- Design risk assessment (5)
- Significant risk register (3)
- Hazard register (2)
- Project risk register (2)
- Consolidated CDM risk register
- Hazard elimination and risk reduction register (HERR)



ISSUES RAISED IN THE **FEEDBACK**

> "When I'm working on a lot of the PCI from Clients. Frequently it's

projects, we usually don't get any of because the Client might have had it a few years ago. But they've no idea where they've put it."



Questionable quality of some principal **CDM** documents

- PCI is often not appropriate
 - survey information on asbestos is often missing
 - HSFs for existing assets are very often not available
- CPPs often missing important information
- Some participants of the view that absence of express regulatory requirement for assessment of CPP often undermines the quality of the CPP.

WOLVERHAMPTON Collaborative Risk Management



The bedrock principle

- Collaboration, coordination, and cooperation are practices for successful interorganizational relationships and therefore risk management
- A person with a duty under the Regulations to cooperate with any other person to the extent necessary to enable any person with the duty or function to fulfil it
- Facilitated, particularly at the pre-construction phase, by the PD
- PD to ensure that all persons working in relation to the pre-construction phase cooperate with the Client, the Principal Designer and each other
- Additionally, under Regulation 13(5), the PC must liaise with the PD

WY WOLVERHAMPTON Collaborative Risk Management

Current practices

Category	Sub-category
Project team meetings	Design review meetings/workshops (38) Design team meetings (6)
	 Design team meetings (6) Opening up (pre-start) meetings (1)
Visualisation techniques	Use of annotated drawings (19)
	BIM, 3D Navisworks, and clash detection tools and platforms (3)
	Use of hazard elimination and reduction register (HERR) with varying colour codes for risk (2)
	Design lead's focus on design risk management with designers and feeds PD with information
Review/Audit	for audit or review (15)
	 CDM advisors coordinate and review design risk management processes in support of PD role (4)
	• Reliance on project managers to ensure communication among project parties in support of PD role (2)
Early contractor involvement	 Engagement of independent contractors in design process and excluded from tender (16) A two-stage design risk management to bring contractors on board early (1)
Client leadership	• Development of early collaborative risk management strategy and culture by Client with support from PD (5)
	Mid-tender interviews of PCs to keep PCs focused on effective risk management (1)
	PD involvement in tender evaluation and interview (1)
	Collaborative risk management through contracts and agreements of project parties (1)
Relational arrangements	Alliancing mechanisms (1)
	Framework agreement of project parties with Clients (1)

ISSUES RAISED IN THE FEEDBACK

5

Collaborative risk management is still a mirage

- Prosecutions analysis shows that contractors (and PCs) are most at risk of prosecution
- Siloed approaches, and fragmented projects
- Necessity to offload commercial risk
- PDs sometimes unwilling/unable to challenge designers
- PDs think they need to only have a conversation with client's design team
- Client's design team not willing to challenge contractor's design



ISSUES RAISED IN THE FEEDBACK

6

Current insurance system a threat to Collaborative Risk Management (CRM)

- Lack of Pl insurance cover for PD role
- Use of responsibility matrices create siloes and unwillingness to contribute to management of risks outside of contractual parameters
- PI insurers proscribe involvement in CRM based on perceived conflicts of interest or project participants not being insured to manage certain project H&S risks like fire





1

Empowerment of clients

- Clients also to evidence possession of reasonable health and safety competence
- Recommend a framework of core criteria targeted at Clients
- Review H&S clauses in Standard Contracts



2

Monitoring and remedial actions by clients required

- There are no systems available to Clients in the public domain for monitoring and controlling performance
- Further research on this subject is needed



3

Resourcing the PD role

- Objective **standards** for the PD input required
- Further research on this subject is needed



4

Evaluation of CPP before site commencement

- Express requirement that the CPP is reviewed for fitness for purpose
- This will require standards or benchmarks to be defined



5

Practice guidance on CRM required

- Hardly any guidance in the public domain on best practice in collaborative risk management (CRM).
- Research into this subject is therefore needed.
- This is consistent with conclusion in the Hackitt Report that building safety risk management competence is patchy



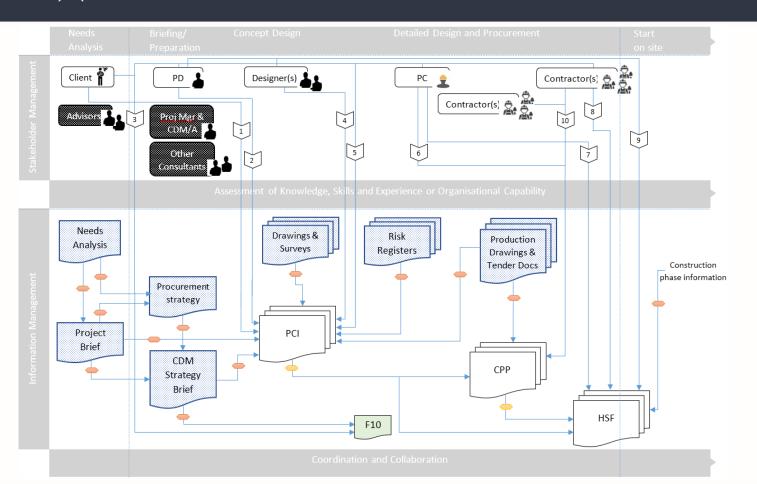
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Rethinking of existing insurance model

- Introduction of Integrated Project
 Insurance (IPI) offers potential to remove
 the insurance impediment to collaborative risk
 management and facilitating a whole project
 approach
- Further development and roll out of the IPI approach is recommended



Conclusion



Legend:

CDM Duty holder

Other project participants that can influence H&S

CDM documents

Project management documentation with H&S implications

Information preparation

Notes:

- 1. Regulation 4(4)
- 2. Regulations 11(4), 11(6), 11(7)
- 3. Regulations 6(2), 7(1), 7(2)
- 4. Regulation 7(2)
- 5. Regulations 7(1), 7(2)
- 6. Regulations 12(1)-(4)
- Regulations 12(7)-(9)
- 8. Regulations 8(4), 8(5)
- 9. Regulations 12(5), 9(3), 9(4)
- 10. Regulation 15(5)



Conclusion

Some improvements clearly evident

Room in places for further improvement

 Further research required to take account of developments since this study such as the Building Safety Act 2022 which has introduced some further measures

Industry collaboration is key





Thank you

