Construction Industry Advisory Committee (CONIAC)

Keeping Pace with Change Working Group

Anticipating and tackling new health and safety challenges

#HelpGBWorkWell

CDM 2015 - an inter-institutional report

‘From Compliance to Consultation & Collaboration’

March 2019

CIC

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Executive Summary

The changes to the Construction (Design & Management) Regulations, which came into force in April 2015, have provided the professional institutions with a platform for improving the way that health and safety risks are managed through the various stages of construction projects.

The aim of this report is to demonstrate how the major institutions, despite their different structures and purpose, have worked both individually and collaboratively, to equip their members to meet the challenges set out in the revised legislation.
The creation of the Principal Designer function has enabled the leaders of the design process to develop a strategic approach to identifying, mitigating and managing those risks that are specific to the project, in the early stages and before detailed design work has commenced. The focus on clear communication of risks enabling a collaborative, team-based approach rather than excessive use of 'paper-based' risk assessment techniques is a clear requirement of the 'new' regulations.

The Institution of Civil Engineers (ICE) and the Royal Institute of British Architects (RIBA) have developed and delivered extensive training and development programmes over the past four years, reflecting this different approach to CDM, which are beginning to bear fruit in the way some projects are now being delivered. This report includes details of the scope of this work together with case studies from organisations, which have invested in developing their teams and can report on the positive impact of applying the principles underpinning CDM 2015. Other institutions have approached the challenge in their own way.
Whilst there is evidence, after four years, that the industry is beginning to embrace the changes prompted by CDM 2015, change in a project based industry is inevitably slow and general levels of understanding amongst clients, designers and contractors about the way CDM should be delivered are still quite variable.

The institutions must ensure that high quality education, delivered by construction professionals to construction professionals, continues to be a priority, with new ways of learning being adopted as appropriate, to enable the key messages of CDM 2015 to be widely disseminated and understood.

1 Introduction

The Construction (Design and Management) Regulations 2015 which came into force on 6th April that year, contained a number of significant changes from the previous version of the regulation (CDM 2007).

The most obvious change was the creation of the Principal Designer function, to mirror in the pre-construction phase the duties of the Principal Contractor in the construction phase, and the demise of the CDM coordinator function.

Perhaps the next most significant change was the removal of Appendix 4, which set out the core criteria for demonstrating the competence of 'Companies, contractors, CDM coordinators and designers' (L144). The Health and Safety Executive (HSE) proposed that rather than the regulator attempting to define what 'competence' constitutes for different roles and organisations, it should be the duty of the individual professional institutions to enable their members to develop and demonstrate the particular skills, knowledge and experience required to carry out their professional duties in accordance with their legal responsibilities.

> ***'Professional institutions - eg. RIBA, ICE, IStructE, CIOB, RICS etc. MUST lead the development of standards for their communities'***
>
> *Russell Adfield, Head of the Construction Management Unit, HSE- addressing the APS Health and Safety Conference in London on 14th September 2016*

As part of the CIC-led Keeping Pace with Change (ConIAC) working group, a task group was established in April 2018 to assess and report on how the major professional institutions have responded to this challenge.

This report endeavours to demonstrate how each of the major institutions, working both independently and collaboratively, has taken advantage of the revised regulations to improve the performance of project teams and help them to manage risk more effectively.

2 The changes from CDM 2007 to 2015

Apart from the removal of the CDM coordinator and the creation of a Principal Designer function, the CDM 2015 regulations differ from the previous version in a number of other respects:-

Client duties made more explicit
Regulation 4 states that the client must ensure there are suitable management arrangements in place so that health, safety and welfare is secured. The guidance to regulation 4 suggests that the client 'could prepare a health and safety brief as a way of setting out these requirements.' It also requires the client to maintain an oversight of these arrangements throughout the life of the project.

Regulation 8 – general duties added
A variety of duties, applicable to all duty holders, have been added. Perhaps the most significant clause is 8(6), which states that 'any person providing information or instruction must ensure it is comprehensible'. The guidance to regulation 8 reinforces the message in the CDM 2007 ACOP that unnecessary bureaucracy can prevent the communication of key health and safety messages.

ACOP(L144) replaced by Legal series guidance (L153)
Despite the industry preference for an Approved Code of Practice, the HSE explained that, in enforcement terms, there is very little difference between a guidance document and an ACOP. Both the regulations themselves, and the supporting guidance and associated appendices and schedules, set out very clearly what is expected of project teams in managing risk throughout the construction process.

Schedule 3 – 'works involving particular risks' added
As part of the 'copy out' from the 'Temporary or Mobile Construction Sites Directive (the Directive), a schedule of certain risks associated with construction projects was incorporated into the requirements of CDM 2015. Regulation 12(2) states 'any activities which appear in schedule 3 must be addressed in the Construction Phase Plan.'

Definition of 'significant risks' amended
CDM 2007 defined significant risks as 'not necessarily the greatest risks but those risks (including health risks) that are

- Not obvious to a competent contractor or other designers
- Unusual
- Likely to be difficult to manage

CDM 2015 removes the phrase '*to a competent contractor' or other designers'* from the definition.

Domestic client duties addressed
In order to comply with the Directive, the previous exemption of domestic clients from holding legal responsibilities was removed. However, the 'deeming' of their duties to other duty holders is confusing to many construction professionals.

What has not changed
Certain established key principles have been reiterated:-

- The relevance of applying the General Principles of Prevention (previously addressed in Regulation 7 - CDM 2007).
- The importance of engaging and consulting with workers (Regulation 14 -CDM 2015)
- Duty-holders cooperating and communicating with each other and coordinating their work (Regulation 8 – CDM 2015)

3 The ICE[1] experience

Education and Membership

The ICE produced a suite of one and two day courses in early 2015, developed and delivered by ICE Health & Safety Expert Panel members, with the focus on understanding the principles that underpin the regulations and their practical application – a key feature of the courses is the benefit of developing a 'CDM Strategy Brief'- rather than simply repeating the regulatory duty holder and duties content typical of other CDM courses'

The ICE Training CDM2015 suite of courses is open to members and non-members of ICE and attracts clients from across the following sectors:

- Construction
- Ports
- Transport
- Local Authorities
- Water
- Energy
- Local government
- Health Authorities

Data on courses run and total number of delegates – 2015 - 2018:

Number of companies who have booked In-house courses	- 252 orders
Approximate number of attendees on in-house courses	- 3275 delegates
Numbers of delegates on Public run, courses	- 519 delegates
Number of downloads of eLearning	- 199 recipients

Practice:

Recent developments –

There has been

- an increase in the number of client organisations e.g. Local authorities, infrastructure owners, booking in-house courses in 2017-2018.
- very little demand for open(public) courses post - 2016.

1 The home of civil engineering | Institution of Civil Engineers https://www.ice.org.uk

See case studies (below) for examples of how clients are adopting new practices as a result of understanding the revised regulations.

Continued Professional Development:

ICE Health & Safety Register

Since 2001 ICE has operated a register of qualified engineers who have demonstrated the practical application of health and safety risk management in their professional practice. Since 2015 there has been a slow but gradual growth in the number of qualified engineers (of various disciplines) applying for assessment. There are currently twenty-three engineers registered at Level 1 and thirty-nine at Level 2 (Advanced). Membership of the Register demonstrates a level of competence to initiate; plan, supervise and co-ordinate health, safety and the management of risk within construction projects.

Life-long learning – Health and Safety Risk Management

In June 2017 ICE published a guide for technicians, incorporated and chartered civil engineers in respect of continuing learning in health and safety risk management as they progress through their careers. Based on 'Life Long Learning for Health and Safety Risk Management for IIG Institution members', the ICE document tailors the broad framework and schedule in the IIG version, which identifies for various career stages, typical levels of attainment and means of achieving the required level, which are intended to be cumulative as an individual's career progresses.

Design Risk Management Guide

The ICE carried out a survey of Contractors and Designers on the subject of risk mitigation in design in the Spring of 2017 and the results showed that there was a wish for additional information on this subject with detailed information about how to proceed. As a result the H&S expert panel produced a Design Risk Management (DRM) guide.

The purpose of the guide is to clarify the ICE's understanding of what is required in order to sufficiently discharge the designer's duties in relation to design risk management. The aim is to provide its members, and the wider construction industry, with a simple and practical approach to DRM, that can be read alongside other the guidance available, whether of a regulatory (eg Industry Guidance) or a practical nature (CIRIA). This document was developed with small design practices in mind but can also be applied to larger organisations. It not only builds upon an organisation's existing good engineering practice, it helps to describe how design risk

management should not be done in isolation but as an integral part of the project risk management process.

This is available on the ICE website for members and non-members to access.

Alongside this, the ICE also produced a paper setting out responsibilities with regards to DRM when working as a team and making team design decisions. This is also available on the website.

CSCS Cards

The ICE Health and Safety Expert Panel is reviewing the current system in the context of construction professionals who do not habitually work on site.

Case studies

1. Network Rail

Between August 2017 and January 2018 Network Rail (York) ran the ICE **CDM 2015 'Principal Designer & Designer; demonstrating capability'** one-day course eight times for a total of 112 staff of various disciplines. Senior managers attended the majority of the courses to provide delegates with a contextualized interpretation of the course material.

Network Rail is the owner and infrastructure manager for the vast majority of the railway network in Great Britain. Network Rail is an arm's length public body of the Department for Transport with no shareholders, which reinvests its income in the railways.

Network Rails national operational coverage is comprised of eight routes. The London North Eastern & East Midlands (LNE&EM) route has the largest geographical area, with a railway network that has significant strategic importance as a national transport artery. LNE&EM route carries 221 million passengers and 58 million freight tonnes every year.

Asset Management is an essential requirement of owning and managing any infrastructure in ensuring that Capital and Operational expenditure is appropriately directed and to provide sustainable safety and performance outputs. Within each route is an Asset Management Department dealing with core infrastructure themes, such as 'Track', 'Signalling', 'Geotechnics' and 'Structures', etc.

This case study will focus upon the LNE&EM Structures, Geotechnical, Drainage and Buildings Asset Routes Management Departments and our Works Delivery Team in their collaborative training with the ICE in running of the *'CDM2015 Principal Designer& Designer; demonstrating capability'* courses.

Between August 2017 and January 2018, the course was run eight times within Network Rails York offices, for the benefit of 112 Technical and Project staff within the various departments.

The Railway operates as an 'Infrastructure System', with a high number of complex interactions and safety-critical access-constrained working environments and with a significant number of stakeholders, such as Customers, Regulators, External Developers, Consultants, Contractors etc.

Network Rail as a business has unique governance structures for projects, processes, role accountabilities and competencies. As these functions and

processes do not always immediately align with the broader general construction industry, there was a need to have a Senior Manager within each training course who had extensive CDM and Industry experience to help interpret terminologies, clarify on Network Rails alignment with CDM 2015 and support the ICE's course tutor with delegate questioning.

This was achieved by providing contextualised interpretation of the course material. The senior managers involved in delivering the course were the Buildings & Civils Works Delivery Programme Manager and the Structures Route Asset Manager. Clarification was certainly the prominent benefit from the courses for all of Network Rail delegates. This centres mainly around defining the role of 'Designer', more than 'Principal Designer', under CDM 2015.

A further complexity within Network Rails Asset Management governance is that there is a technical duty overlap; with roles and distinctions between Client, Principal Designer and Designer. These are not as apparent as is traditionally found in other construction sectors.

Being an Asset Owner and Budget Holder, this would typically involve allocating the CDM duty of Client to Senior Leaders within Route Asset Management Departments. However, the staff members within these departments are academic/professionally qualified in their respective technical fields and as such are required to make critical Asset Management decisions and instructed physical works activities to our Works Delivery Teams.

Based upon this approach, the role could be perceived as a 'Professional Client', 'Technical Client' or 'Informed Client'. Furthermore, the critical Asset Management decisions, where physical work activities are required, can be conveyed to our Project Delivery Teams as either broad problem statements, or conversely as prescriptive requirements.

Problem Statement example: *'Bridge 14 on ELR: SPC1 has failed its Structural Assessment. Process through GRIP Deliverables 2-8 to provide the required asset capability to meet the Sectional Appendix / Operating Licence.'*

Prescriptive Requirement example: *'Culvert 158 on ELR: ECML has displaced/dropping brickwork in the crown beneath the Down Main Line and is at risk of collapsing. Attend site, de-silt and install a UV Cured Polymer Structural Liner to the Barrel Intrados.'*

Naturally these decisions/instructions have the potential to significantly influence the approaches and safety mind set taken by our Works Delivery Teams and more specifically their numerous Design & Build Framework Contractors and Consultants.

Exploring various scenarios within the course, served to remind the delegates that although they are employed by a Client Organisation, subject to the nature of the remit, they are as much as 'Designer' as the Consultant who produces the drawings, specifications, calculations, etc.

Although term 'Designer' is clear for many construction sectors, it can cause notable confusion within some large Client Organisations who have technical authority. Statements such as "I *am not the Designer, I didn't draw it*" are often cited when CDM roles are allocated.

Often this is due to a gap in CDM awareness and can be addressed by reflecting upon the common definitions of 'Designer'. It is often described as someone who 'decides/defines/devises', thus removing the traditional technical industry stereotype of a 'Designer' specifically being a firm or individual responsible exclusively for producing drawings, specifications, calculations and reports.

With this key learning in mind, the 'CDM2015 Principal Designer; Demonstrating Capability' course comes into its own when we focus more upon how we communicate these decisions throughout the lifecycle of a project and into 'Whole Life Asset Management'.

Since completing the course, there have been notable revisions made in LNE&EM Structures Route Asset Management Department to centre our Capital Works Remitting Document around CDM2015 ensuring that there is transparency in understanding prior decision making and continuity in articulating the asset specific risks through the various project stages. Linking this to the 'Hazard Elimination & Risk Reduction' best practice approaches endorsed by the ICE, these considerations can be made at the conceptual stage when a remit is being produced.

Working closely with our Works Delivery Team; forums have been created allowing Contractors and Consultants to visit the Engineering and Technical Staff within the LNE&EM Structures Route Asset Management Department to discuss/clarify remits, highlight risks/assumptions and exchange appropriate Pre-Construction Information for every Capital Works Scheme. This has provided significant benefits for all parties, with reduced work complications, improved asset intelligence, insight/empathy and continuous improvement.

We will continue to work with the ICE and their Training Programmes to ensure both the best and latest practices are adopted, hopefully providing the ICE within further insight into the challenging world of the railway environment.

Christopher Heap CEng FICE FPWI FCMI MIAM
Route Asset Manager (Structures), London North Eastern & East Midlands Route

2. InterGen

Spalding Energy Expansion Limited (SEEL) ran an 'in-house' version of the two day ICE **'Comprehensive CDM 2015 Overview'** course on 7th February 2018 in Spalding, Lincolnshire. Notably, the course was chosen by SEEL to equip the project team, which was in the process of beginning construction of an extension to the Spalding gas-fired power station, with the skills, knowledge and experience, to discharge their duties in compliance with CDM 2015. In all, twelve members of the project team including the three main package contractors as well as senior SEEL staff participated.

On this project SEEL has procured the main items of plant and issued them to a third party to install. In addition SEEL has contracted several other companies directly, to provide the gas fuel connection, the 400kV Grid connection, the temporary construction power supply, the water supply and site drainage. From the outset SEEL recognised that they needed to be involved with the site management, far more than if this was a standard EPC contract. Furthermore, SEEL recognised the implications this could have when considering CDM2015 regulations. The SEEL team members had undertaken NEBOSH training previously but most were not familiar with the changes brought about by CDM 2015. SEEL recognised that this was probably true for some members of the contract companies. As a result, the decision was taken to run a CDM course with both the SEEL and contract company team members. The hope was that this would deliver on two counts, firstly ensure that we were all aligned with respect to the CDM2015 regulations and secondly, provide a sound basis for team building. The course was booked and paid for by SEEL and places were offered out to contract companies. In addition we purchased individual copies of the book "Teamwork not Paperwork" (published by ICE) for everyone who attended.

Most people prior to the course believed there could only be one principal contractor and one F10. We intended to have at least three very separate, but neighbouring, CDM areas and intended to have three Principal Designers and three F10s. We recognised that SEEL needed to have an input and manage the boundaries between the various areas. The course allowed us to discuss and indeed confirm that this approach was possible and indeed, for our site, very practical. We were able to explore and discuss how we would manage situations where one contractor needed to carry out work in another CDM area. In addition we were able to discuss and explore how we would manage the various areas and keep everyone involved. As a result of this process, we employed UAV (drone) technology to capture high-resolution aerial images of the site. These images were then annotated to provide precise up-to-date site layout drawings. These drawing were used during all-party site briefings. This process was used for both the main construction site and also for the HV substation, a weekly meeting was held to discuss if the site plan was still accurate and to brief each other about the works in progress. The drawing was then updated and all parties signed on to the latest revision.

The training has benefitted us in many ways, it allowed us to ask questions and explore different scenarios, which were real and applicable to our site. The training provided a “safe” environment for us to test ideas and solutions, whilst at the same time allowing people to voice their opinions openly. The team-building element came out very quickly with people feeling comfortable to put ideas on the table, this element was further enhanced by a team social evening.

The training continues to be part of what we do every day, the CDM arrangements and management on site have worked very well with people respecting each other’s areas and needs. For me as a representative of the SEEL management team, the course was held at the right time, just as contractors were mobilising to site, it smoothed the way for a safe and efficient mobilisation, with main contacts already known. In addition it allowed SEEL as the Client to set their expectations in a group format, with the main players hearing the same message directly from us.

Following on from the course, we were keen to ensure that the CDM process did not burden the project team with excessive paperwork. As a group, we decided that we would produce an aerial photograph of the site. This would then be annotated to show the various working parties and CDM areas on site. A weekly meeting was held to review the drawing and where necessary amendments were made. The revision was updated and the drawing was circulated to all parties. In addition a sign-on sheet was kept to capture attendance at the meetings. This method was used (and still is being used) successfully on both the main construction site and the HV switchyard.

The ICE course was chosen following recommendation from a colleague at another InterGen Power Station, who had attended the same course and had been made aware that the course could be delivered at site. It has certainly had a positive benefit on both the project and the personnel involved in the project. It is seen as one of the successes of this project and has led to an excellent working relationship. It was great to see the positive immediate impact the course had had on people. The principles and ideas gained continue to support a very strong and respected CDM culture on our site.

Since undertaking the course, we have brought another big contractor onto the project who was of the belief there could only be one principle designer, one CDM area and one F10 on a project. Through our training we have helped that contractor understand how we are running the project and through encouragement have helped them accept this concept.

Simon Walker
Project Integration Manager (InterGen)

3. City of Bradford MDC

Between March and May 2018 the Planning, Transport & Highways Services Department ran the ICE **'CDM 2015 – the Importance of the Client in Leading the Project Team** (twice) & **CDM 2015 'the Principal Designer & Designer ; demonstrating capability'** (twice). A total of fifty members of staff, from senior managers to frontline supervisors participated in the programme.

CBMDC has an in-house engineering division and has therefore taken on the roles of Client, Design and Contract Management for many years. Since its inception CBMDC (Structural Engineer's section) has taken a pragmatic approach to CDM and has always considered that the design and contract management team were best placed to take on the previous CDM roles of Planning Supervisor and CDM Co-ordinator as well as the design and client roles. Staff attended both in house and external training courses pertaining to these roles. CDM 2015 therefore posed no great changes as the design team were already effectively carrying out the role of Designer/Principle designer

Feedback from attendees included:

The course was tailored to the designer/ client and most other CDM courses I had been on with my previous employer were tailored towards the Contractor.

Key learning points included:

- Paperwork should be kept to a minimum, relevant not generic.
- Refreshed my previous knowledge of the CDM Regulations and informed me of recent changes to the regulations and guidance.
- Highlighted my legal duties as The Principal Designer. I understand the roles of the client, principal designer and principal contractor more clearly.
- The course hand outs/ notes were very good so we could take them away and complete further reading in our own time.

It was well presented and provided a targeted understanding of the ICE's interpretation of the requirements and duties of a Principal Designer to those highways engineers who undertake project design and implementation. The emphasis was on the design identification role of the PD rather than the whole project role, but it gave an understanding to those who could take the PD role without previously understanding that is what they were doing. Our normal PD role, which my team undertake includes an element of ensuring the Client duties at design and construction phases are undertaken together. I can say that we have not had as

many information or help requests from the highways teams undertaking projects day to day so they must be doing it for themselves.

The importance of the Principal Designer role was recently highlighted in a scheme to demolish a CBMDC owned seven-storey reinforced concrete framed office block. The office block was located in the city centre and adjacent to major arterial highways in and out of the city. It became apparent early in the design of the project that there was a significant risk of premature collapse of the building depending on the method of demolition employed. This allowed the design team to investigate the options, highlight the risks in the PCI and contract documents and include details that would allow contractors to price for safely demolishing the structure irrespective of the method of demolition chosen. Details of the building structure including the concerns regarding structural stability, details of nearby services and the availability of possible road closures enabled the contractors to accommodate the possible different approaches to the demolition method and price the works accordingly.

Dr. Aaron Okorie, C.Eng, MICE.
Principal Engineer (Structures)

4. SCP

SCP is a Multi-Disciplinary planning and design consultancy working across a range of land development, transport and drainage services. We have forty technical staff across three offices. Our main clients are developers with a small section working with the public sector.

SCP engaged with the CDM 2015 changes and the clarifications and amendments specifically around the role of the Principal Designer. The Principal Designer role was previously outside the team on most of our infrastructure projects; we have been able to bring this much closer and they are involved day to day. This has allowed us to shift our position in helping and advising Clients and supporting them to act safely and compliantly.

To support this, SCP has retrained key staff and progressed on accreditations to show our competence both as individuals and as a business to provide the Principal Designer service. This retraining involved courses attendance on the CDM changes, amendments to our internal procedures and reading the current guidance.

From this retraining, two senior SCP team members took the key step to sit the ICE health and safety register, which has allowed an impartial external assessment of our capabilities to act as health and safety advisors. This confirmed our competence to be Principal Designers for the field of work we act in. Subsequent to this, with the accreditation we have then progressed an SSIP business approval system, which has provided us with Principal Designer accreditation.

The key goal for SCP in undertaking the ICE Health and Safety Assessment was to allow us to improve our service to current and future clients, as we could advise from the start how to deliver schemes more successfully, by designing with construction and maintenance in mind and acting as coordinators with the other team members for our works. This shift has changed our role with the client and some more aware clients have embraced this, as they don't have a third party involved for the role; others are still not so aware of roles and responsibilities under CDM 2015.

We acknowledge the next key challenge for developing greater awareness of the benefit of early appointment of a Principal Designer is client education on the benefits that health and safety doesn't cost money, it can save money, time on the programme and improve quality.

We also believe that contractor improvements can follow through with the closer role to the team through the planning, design and construction stages of our schemes.

Some of the wider challenges we see in the industry are the lack of understanding and the benefits of the PCIP. Contractors not providing specific or comprehensive CPP, which creates delivery problems.

The communication from the planning and design stages is being lost, when the contractor brings their team to site, as they are not being provided enough information or briefings to the staff on the delivery end on the key risks, constraints or site challenges.

We also find there is a reluctance for contractors to acknowledge problems and report and address them formally. We believe this is due to future procurement issues. We need companies to address and resolve issues for the benefit of all and if we hide issues we cannot improve.

Finally, there remains reluctance amongst contractors to complete the paperwork and documentation at the end of a contract and this results in protracted final approval and sign offs. Whilst SCP sees challenges within the industry, we are confident that the CDM changes are an improvement and the ICE Health and Safety Register is positive for the industry. We would encourage professionals to undertake the assessment and formalise their health and safety accreditation.

Steven Carmody, Director (SCP)

4 The RIBA[2] experience

Education and Membership

The RIBA has agreed a level of skills, knowledge and experience (SKE) that they believe to be suitably sufficient and proportionate for the delivery of the Principal Designer (PD) role. These courses have been delivered across the UK to all regions, many practices and universities by means of lecture/workshops of a 2 day, 1 day and half day nature. Post event certification is provided to all delegates as a record of PD validation. These courses have largely been delivered as joint presentations with an ICE trainer providing a professional diversity of view. Many architectural practices and organisations are represented by 1 or 2 delegates on courses or remotely attend webinars with a view to disseminating the acquired knowledge back to their other employees at internal events. Numbers attending the courses are therefore a small part of the overall numbers of architects and technologists applying the CDM regulations and the PD role.

2015:
1 x 2-day pilot event, 40 delegates
Total of 1 event: 40 delegates

2016:
1 x 2-day in-practice: 22 delegates
10 x 2-day regional events: 277 delegates
14 x 1-day in-practice events: 289 delegates
1 x half-day in-practice event: 35 delegates
6 x half-day regional events: 158
Total of 32 events: 781 delegates
4 No. Universities- Approx. 200 RIBA Part 3 students

2017:
3 x 2-day in-practice: 50 delegates
2 x 2-day regional events: 37 delegates
7 x 1-day in-practice: 130 delegates
6 x 1-day regional events: 194 delegates
6 x half-day regional events: 129 delegates
Total of 24 events: 540 delegates
6 No Universities: Approx. 300 RIBA Part 3 students

2 Royal Institute of British Architects https://www.architecture.com

2018:
4 x 1-day regional event: 152 delegates
7 x 1-day in-practice: 142 delegates
5 x 2-day in-practice events: 75 delegates
1 x half-day in-practice events: 20 delegates
1 x 6-day webinar series: 23 delegates
Total of 18 events: 412 delegates
8 Universities; Approx. 400 Students

2019 (To date end March)
1 Day PD regional course- 54 delegates
Others planned
3 New Webinar series programmed.
Half day in-practice Courses.
Follow up in-practice PD refresher courses

2015 to end 2018:
Total of 75 RIBA events: 1,773 delegates
Total Students Approx. 900 (Av. 50 per course)

The RIBA have delivered CDM courses to many schools of Architecture across the UK in Manchester, Birmingham, Newcastle, Cambridge, Loughborough. Leicester and London's Bartlett and Metropolitan. These are repeated annually and considerable cohorts of newly trained architects have been made aware of these essential skills for their futures in practice.

CDM 2015 & the Principal Designer Role.

It has become very clear that the Principal Designer role on architectural projects is not only a change in title from the CDM-Coordinator but also a fundamental change in methodology. CDM-C's tended to concentrate on the actual building operative task risks such as those associated with brick laying, roofing, structural steel erection etc. However architects need to initially and primarily consider the strategic risks of hand-set brickwork v panellised brickwork, hot v cold roofing , structural steel v RC frame construction for example. These strategic systems of work need to be considered in the context of the whole project with other factors such as environmental, cost, societal, planning, conservation, aesthetics, future maintenance etc. and the issues of safe systems of work need to be integrated within the context of these other factors, NOT taking priority over them. The non-architectural designers and health and safety professionals find this a very difficult process to understand due to their general lack of design knowledge, training or previous exposure to these issues. The development of "Principal Design Advisers" and "CDM Advisers" has resulted in the

perpetuation of these “ex CDM-C” approaches which has further confused the industry including contractors, clients and architects who have been totally misled.

One particular “unintended consequence” of CDM 2015 has been as the result of the changes to domestic projects procedures. The fact that a large number of current accident and health statistics occur in these small(er) projects would suggest that a higher degree of uptake of the Principal Designer appointment would be appropriate. However the ambiguity of the guidance leads clients (and others) to believe that the PD role “falls to” the architect/designer automatically without additional and proportionate time or resources allocated. This misunderstanding of the client and PD duties has resulted in the RIBA recommending architects to refuse the commission in these circumstances. This can only lead to a further reduction in the appropriate uptake of the PD role and hence the safety outcomes of these projects. We look for greater clarity of the regulations in this and other respects as the result of the 5-year CDM regulatory review.

The RIBA Position

As a result of many courses and several years of training in conjunction with the ICE it is very clear that there is a considerably different CDM approach required between the projects of the two professions. Whilst both professions are always looking to push the boundaries of design, the need for commercial, societal and aesthetic creativity are far more prevalent in architecture. Architectural projects tend to be shorter and more driven by clients requiring value engineering and competitive tendering processes often excluding contractor input until later stages. This results in a more fragmented system with less contractor engagement, especially at early stages of projects when key strategic CDM decisions should be made eg. What site remediation or services diversions are required?

Are we considering off-site manufacture of structural or volumetric components? What phasing logistics are required to keep the existing buildings operational whilst refurbishment or an extension is being built?

The progressive RIBA workstages, essential for developing an evolving design, require a sequential, team based, decision-making process throughout the workstages. From concept design to detailed, and ultimately including specialist contractor design are a series of necessary client and regulatory sign-offs which cannot be rescinded lightly, if at all, even for Health and Safety reasons. It is therefore essential that the relevant CDM issues are prioritised by the design team into “significant risk issues” which are “not likely to be obvious, are unusual or are likely to be difficult to manage effectively ” as required by the L153 CDM 2015 Guidance document. The previously and erroneously targeted routine, normal construction risks should be the preserve of capable contractors and if they are not

capable for the type of project concerned, should not be considered for tendering, both on small or large projects. The previously documented, generic all risks approach has proven to be a failure as it targets normal contractor risk as opposed to the big ticket items, which are lost in the resultant huge mostly generic risk registers. This has been a constant complaint amongst architects but has fuelled a CDM-Adviser fraternity who perpetuate this misapplied approach, which is often assumed to be the norm by clients. Of course architectural designers need to have a reasonably robust knowledge of the types of construction methodology in which they operate, but are not expected to be experts in construction or health and safety regulations. They need to have a general knowledge of all aspects of the construction and architectural industry much like the general practitioner in the medical profession who should know the extent of his knowledge and know when to call upon additional expert input.

The RIBA strongly support the L153 message that the “Principal Designers should be designers …..who plan, manage and monitor the pre-construction (i.e. design) phases (even during the construction phase) and coordinate health and safety” ….during these design stages.

These approaches and methodologies have underpinned the training of architects and architectural students on CDM 2015 and Principal Designer courses since the introduction of the new regulations to improve the “coordination and integration of CDM into all projects”. This has been facilitated by a move away from over-complicated narrative spreadsheet risk registers and a move towards 3-D and 2-D visual risk identification and analysis of significant CDM issues. Simple risk lists that identify the issues and track the mitigation measures and actions required by all team members, but usually lead by a key stakeholder, duty holder or other profession can support this. Whilst this produces some additional annotation of drawings and visual risk analysis documentation it makes complex issues more comprehensible to all involved from client, to designer, to construction manager and if necessary sub-contractor and operatives. Whilst of course the intention is to mitigate the exposure of operatives to physical harm primarily, designers do not put these operatives to actual work on roofs, or scaffolds, or into basement excavations, but by design analysis can minimise risks to tolerable levels by strategic design decisions whilst still achieving the design intent. It is then for the contractors and specialist sub-contractors to find a suitable safe system of working to carry out the particular tasks within the experience of the trades and specialisms of the industry. It is a common misconception that designers need to tell contractors how to do their job, for which they should have their own trade skills, knowledge and experience. Only if particularly difficult, or unusual tasks are required, or the circumstances are particularly dangerous should designers provide additional information. It is of course useful if designers can be available to assist contractors with further mitigation of risk or design variations during the construction phase. However, under certain forms of contract (eg. Design and Build) it is assumed that the contractors can take on the Principal Designer role.

If they have designers in their employ then this is possible but it makes sense for the original principal designer or novated designer to continue with their design duties under CDM.

In conclusion there are a number of issues, which are conspiring to prevent the integration of the intended Principal Designer role into the construction and design industry. It is hoped that the proportionate approaches outlined above can be adopted and the unnecessarily bureaucratic CDM 2007 measures be dispensed with. Clients and contractors unsure of their duties can call on the support of CDM-Advisers if they bring a specialist expertise, whilst designers can refer to the professional institutes or institutions of the ICE, RIBA and RICS for additional support and guidance.

AHMM Case Study

AHMM Architects (with over 400 Architects and in the top 4 largest UK practices) have developed a CDM 2015 design methodology, which implements the issues, described above. Having used external CDM-C's for the initial transitional period in 2015 have adopted an in-house Principal Design adviser approach on almost all their projects. By assisting the architects to take on the process of identifying the "significant risk issues" on drawings or BIM models and then mitigating the associated risks where possible, the process has been integrated into the day to day design management system on all projects.

By facilitating collaborative design reviews with the entire project team in stimulating CDM brainstorming analysis sessions the key issues come to the fore. These are then captured in the form of visual analysis and explored with team or outside specialists to find appropriate and tolerable risk solutions.

Many of our clients relish the fresh approach and comprehensible system into which they can add their own expertise and requirements if not entirely familiar with these processes.

There is of course a need to fund this methodology with sufficient time and financial resources, which are necessary for suitable and proportionate responses and to evidence the reverse burden of proof, as required under criminal law. Consequently it is important to ensure adequate meeting time, discussion and reviews and documentation time is allocated and resourced by the clients.

Professional Practice:

In conjunction with the RIBA's Professional Practice team a Health & Safety Committee has been set up to deal with all CDM related issues including Pre-Qualification Questionnaires', Forms of Appointment and a new CSCS equivalent card for Architects and Designers attending sites. A revised Plan of Work for Health and Safety is also under development to clarify the proportionate integration of relevant CDM issues into a design risk management process for all architectural projects. By a combination of RIBA technical officials and liaison with architectural practices it has been possible to provide a coherent Institute position on CDM 2015 that accords with professional and client expectations and meets those of the HSE and industry.

Continuing Professional Development:

The RIBA has provided CDM refresher courses as core curriculum events available to all regions and practices annually and have collaborated with the International Institute for Risk and Safety Management (IIRSM) to deliver**: -**

a) A Principal Designer course in five regions of the UK on a joint platform with the APS, ICE and CITB.

b) A Design Risk Management course in five regions where completed projects from the RIBA, RICS, APS and ICE were analysed and reviewed by delegate teams to understand the diversity of risk analysis and communication methodologies by the different professions.

c) The RIBA have piloted a Principal Designer webinar series in conjunction with an ICE trainer, for architects to train up in their own offices during 2019. This interactive live process allows discussion between delegates and speakers and drawn feedback to be presented for group awareness and further discussion of case studies and project scenarios.

d) CPD Membership Database-The RIBA have introduced in 2018 a centralised CPD database for all members to log their CPD objectives and attainments every year, which will include compulsory fire and health and safety awareness courses in 2020.

CSCS CARDS

A new CSCS equivalent card for Architects and Designers attending sites is in the process of development and will be in operation by 2020 and usable by RIBA

members and other designers. This card will also clarify CDM competence of Designers to deliver the Designer role under CDM 2015. The additional Principal Designer certification will be required by individuals to deliver this additional but corporate role.

5. The CIAT[3] experience

Education and Membership

The Quality Assurance Agency (QAA) Subject Benchmark Statement for Architectural Technology 2014 is applicable to Honours and Masters degree level programmes and describes the academic standards expected of graduates in the discipline, providing general guidance for articulating the learning outcomes associated with Architectural Technology programmes.

CIAT has adopted these external standards for use within its own requirements for academic programme accreditation and its educational standards, which all chartered members of CIAT must meet.

There has been a version of the Subject Benchmark Statement for Architectural Technology in existence since 2000, reviewed on a 7-year cycle, and CIAT has had a strong presence on the review group for each iteration. Since its first publication, health and safety has been embedded into this document.

For the most recent review in 2014, Institute staff and members of CIAT again formed part of the review group and ensured that health, safety and welfare issues, quality of life and social well-being were made more explicit in the Benchmark Statement and as a consequence, within the Institute's own Accreditation and Membership requirements.

Definitions and references to legislation are purposely non-prescriptive in all related documentation to ensure that the standards remain current and relevant to a national and international market, and future-proofed to allow for legislative changes.

Practice:

CIAT's Special Issues Taskforce maintains a specialist network group with those knowledgeable in specific areas, including Health & Safety (CDM 2015). SIT also works closely with other professional bodies putting out co-badged documents giving guidance to the membership.

3 Chartered Institute of Architectural Technologists; the qualifying body for Architectural Technology. https://ciat.org.uk

Continued Professional Development:

Regarding CPD, in the last 18 months CIAT set up a CPD Register. The AT CPD Register is an online directory of providers and their courses that are assessed by the Institute and have been deemed to be of a high standard, current and relevant to Architectural Technology professionals.

It is still in early stages but more and more providers are joining our Register and we currently list one CDM programme.

https://ciat.org.uk/education/cpd/cpd-register/find-a-course-on-the-cpd-register/cdm-courses.html

Other courses are available and we would still advertise them (albeit less prolifically) but they would not have been assessed by CIAT and would therefore not be afforded the same level of promotion or have been 'quality assured' by the Institute. Regional Committees would also work with CPD providers to run courses locally.

CSCS CARDS

Architectural Technology professionals who are Chartered, Technician or Associate members of CIAT are eligible to apply for the Professionally Qualified Persons Card (PQP).

5. The RICS[4] experience

Education and Membership

The Royal Institution of Chartered Surveyors ('RICS') is an organisation with 125,000 members and 22 designations of chartered surveyor. Members are involved with property worldwide, in wide-ranging roles including design and construction.

RICS's commitment to good health and safety practice goes back many years. A consultation document was published in 1989 and 'Surveying Safely - a Personal Commitment' in 1991 – possibly the first UK professional institution to produce such health and safety guidance. It focused heavily on keeping safe when visiting property, together with explanation of the basic duties under the Health and Safety at Work etc. Act 1974. Further editions appeared in the early 2000s, broadening their coverage with each successive publication. Over the years RICS has consulted on how best to promote health and safety to the wide group of professionals who make up RICS membership. This revealed a wish and need to cover more areas and to treat each in greater depth, resulting in the publication of a considerably expanded 'Surveying Safely' in 2011, the first edition with Guidance Note[5] status.

In light of global changes and trends and an increased expectation of common standards, RICS has concentrated in recent years on updating this Guidance Note with a view to improving members' health and safety knowledge and practice. 'Surveying Safely', now in its second edition[6], sets standards and forms the basis for compliance with health and safety law in jurisdictions around the world. This creates the bedrock of sound principles on which the management of health and safety risk in design and construction is founded.

This Guidance Note will be supplemented by a RICS *Professional Statement*[7] covering mandatory health & safety requirements on all its members and regulated firms[8].

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4 Royal Institution of Chartered Surveyors https://www.rics.org/uk/

5 RICS Guidance Notes are documents that provide users with recommendations or an approach for accepted good practice as followed by competent and conscientious practitioners.

6 *'Surveying safely: health and safety principles for property professionals', 2nd edition*, November 2018 (effective for RICS members from 01 February 2019): https://www.rics.org/uk/upholding-professional-standards/sector-standards/building-surveying/surveying-safely/

7 Professional Statements set out mandatory requirements for RICS members and regulated firms.

8 https://www.rics.org/uk/upholding-professional-standards/regulation/firm-regulation/

As a global guide, 'Surveying Safely' is now solely principle-based, so RICS is preparing jurisdiction guides appropriate to particular regions, subject to demand. For example, RICS has prepared a draft UK law jurisdiction guide that covers the Construction (Design and Management) Regulations 2015.

RICS is also developing online health and safety study packages based on 'Surveying Safely', with a view to instituting online examinations to test applicants for the Assessment of Professional Competence[9]. Additionally, RICS is now reviewing the development of study materials covering the Construction (Design and Management) Regulations 2015, to instil greater knowledge of the regulations and the principles of design risk management.

Practice

RICS established a Health and Safety in Construction Practice Panel in 1995, when the CDM Regulations first came into effect. The panel produced a large amount of work and ran seminars on a regular and frequent basis. The group continues as the RICS Health and Safety Advisory Group, with a wider health and safety remit.

Continuing Professional Development

In addition to taking active measures to ensure that its membership understands and applies sound health and safety principles, RICS has arranged and delivered talks and seminars on the Construction (Design and Management) Regulations 2015[10] ('CDM Regulations'). This includes a succession of talks organised as part of the CPD Foundation's programmes, as well as a number of separate seminars and presentations.

RICS magazines, *'Building Surveying Journal'* and *'Construction Journal'*, have published articles on the CDM Regulations; *'Built Environment Journal'*[11] will be publishing further pieces on this and other design and construction related health and safety.

9 The Assessment of Professional Competence ('APC') is the process whereby candidates apply for chartered status. It involves: experience; the submission of records & a case study; a panel interview; and an online ethics test.

10 In Northern Ireland, the Construction (Design and Management) Regulations (Northern Ireland) 2016.

11 The 'Built Environment Journal' is the successor to the 'Building Surveying Journal'.

RICS has worked on CDM and related matters with other professional bodies through the CIC and looks forward to liaising and working with RIBA, ICE, CIAT and CIOB (amongst others) on future training programmes and seminars.

CSCS CARDS

RICS is currently reviewing CSCS and considering a variation on it based on the relevant parts of 'Surveying Safely'.

8. Challenges in interpreting CDM 2015

A number of issues have proven to be difficult to interpret satisfactorily in training and CPD sessions to different audiences:-

Domestic projects

In the normal course of events, the CDM 2015 regulations do not require the average homeowner to take on the duties associated with a commercial client . Despite the inclusion of a flow chart (Fig 1 How CDM 2015 applies to domestic clients) there is considerable confusion and debate as to how the duties of a client should be discharged. Unlike with a commercial client, a domestic client does not have to appoint a Principal Contractor or Principal Designer (where there is more than one contractor) . The lead designer and lead contractor automatically take on their respective obligations. Appendix 6 states that normally the Principal Contractor will take on the client duties. This arrangement may work where the domestic project is small scale but for larger projects (and some domestic projects can be valued at millions of pounds) this would suggest that no-one is carrying out the client duties until the Principal Contractor is appointed.

There is also the option of the domestic client agreeing with the Principal Designer, in writing, to take over their duties. It would be helpful if it were clear which duties could be deemed. Clearly, even the average home owner makes the key decisions of who they appoint, how much time and money they are willing to expend etc. Without such clarity many designers and contractors will be unwilling to consider the implications of accepting the client role, which in any case, appear to be slightly confused.

Timing of PD appointment

Whilst the intent within CDM 2015 is that the Principal Designer appointment be made ‘as early as possible in the design process’ regulation 5 states that the Principal Designer (and Principal Contractor) appointment must be made ‘ …before construction begins’.

One of the problems with the CDM coordinator role under CDM 2007 was that of late appointment. It would appear that appointment of Principal Designers is generally taking place earlier, as intended by the regulations. However, regulation 5 does imply that clients can hold off making an appointment till after design work has progressed, which is clearly not the intention.

QS as designer

Commercially driven construction professionals such as quantity surveyors are classified as 'designers' within the Regulations. The guidance to Regulation 10 states:-

'The term 'design' includes drawings, design details, specifications, bills of quantity and calculations prepared for the purpose of the design. Designers include architects, architectural technologists, consulting engineers, quantity surveyors, interior designers, temporary works engineers, chartered surveyors, technicians or anyone who specifies or alters a design.'

However, typically, quantity surveyors do not make the final decision as to what is incorporated into the design; rather they provide details of the various options being considered, particularly the cost of each possible solution, and what impact it will have on the project budget.

Commercial considerations clearly play a major part in determining the most appropriate design solution on any project, and it is reasonable that all members of the project team should avail themselves of the CDM training provided by the professional institutions. Anecdotally, many commercial staff have a basic appreciation of CDM duties but consider their role to be restricted to financial aspects of the project and seem less likely than other construction professionals to access formal training on the subject.

Provision of welfare facilities

Schedule 2 Minimum welfare facilities required for construction sites

This section of L153 sets out the requirements referred to in Regulations 4(2)(b), 13(4)(c) and 15(11) for the provision of sanitary conveniences, washing facilities, drinking water, changing rooms and lockers and facilities for rest. Where construction work takes place in remote or dispersed locations, guidance on how to satisfy the minimum standards of welfare provision would be helpful.

(i) Glossary of terms and acronyms

ACOP – Approved Code of Practice
APS –Association for Project Safety
CBMDC – City of Bradford Metropolitan District Council
CDM 2007 – Construction (Design and Management) Regulations 2007
CDM 2015 - Construction (Design and Management) Regulations 2015
CIAT - Chartered Institute of Architectural Technologists
CIOB – Chartered Institute of Builders
CITB - Construction Industry Training Board
CPP – Construction Phase Plan
DRM – Design Risk Management
EPC – Engineering Procurement and Construction
GPP - The General Principles of Prevention
HSE – Health and Safety Executive
HSWA – Health and Safety at Work etc. Act 1974
ICE- Institution of Civil Engineers
IIG – Inter-Institutional Group (now JIGSR)
IIRSM – the International Institute for Risk and Safety Management
I StructE- Institution of Structural Engineers
JIGSR- Joint Institutional Group for Safety and Risk
L153 – Managing health and safety in construction (HSE publication)
MHSW – Management of Health and Safety at Work Regulations 1999
PAS 91 – Publicly Available Specification 91
PCIP – Pre-constriction information pack
PPE – Personal Protective Equipment
Reasonably practicable - *balancing the level of risk against the measures needed to control the real risk in terms of money, time or trouble. However, you do not need to take action if it would be grossly disproportionate to the level of risk.*
RIBA – Royal Institute of British Architects
RICS – Royal Institution of Chartered Surveyors
Significant risks - *not necessarily those that involve the greatest risks, but those (including health risks) that are not likely to be obvious, are unusual or likely to be difficult to manage effectively.*
SEEL - Spalding Energy Expansion Limited
SKE – skills, knowledge and experience
SSIP – Safety Schemes in Procurement

Contributors

We would like to acknowledge the contributions of the following people in the preparation of this report: -

Paul Bussey	–	AHMM Architects
Steven Carmody	–	SCP
Lloyd Edmonds	–	Mott McDonald
Martin Gowing	–	Gardiner & Theobald
Christopher Heap	–	Network Rail
Dr Ciaran McAleenan	–	Expertease International
Gary Mees	–	Chartered Institute Architectural Technologist
Jane Noakes	–	ICE
Dr Aaron Okorie	–	City of Bradford MDC
Tony Putsman	–	Xenophon Project Services Limited
Jeffrey Tribich	–	Malcolm Hollis LLP
Simon Walker	–	InterGen
Graeme Walker	–	Calleva Management Solutions Limited
Karen Young	–	Scottish Water

To further the conversation please contact:–
Tony Putsman email tony.putsman@xps.org.uk call: 07734 924955