

# D4h – Designing for Health

*Previous project title:*

**Healthy Design for Construction:  
Knowledge Transfer of Effective Health Issues during Design**

## Implementation Report

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APaChE is a Partnership for Construction Health and Safety – a collaboration between the Loughborough Departments of Civil & Building Engineering and Human Sciences, working with industry and Government to improve health and safety in construction.

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# Implementation Report

## Introduction

D4h is a DTI<sup>1</sup> and ECI<sup>2</sup> funded project whose main deliverable is an interactive CD aiming to reduce occupational health risk to construction workers through effective designer intervention.

This report summarises the Implementation Phase of the D4h project and has the following sections:

- PIP Programme of Work – MS6 – Implementation Strategy
- Revised Implementation Strategy
- Company Specific Demonstrations
- CD Implementation Trial
- Additional Implementation Initiatives
- Conclusion

Other aspects of this project have been covered in previous reports. In particular, the D4h Milestone 4 report covers dissemination aspects and these are closely linked to issues discussed in this report.

## PIP Programme of Work – MS6 – Implementation Strategy

The Project Implementation Plan identified the following actions in the Implementation Phase:

Following the launch, support will be provided for organisations seeking to implement the CD guide and tools. This will be done in close collaboration with Rethinking Construction who have considerable expertise in this area. The process will maximise the take-up of the deliverables and increase the likely impact from the project. Specific deliverables were:

- Support will be provided for up to 15 companies to use the CD  
*This will be done in the form of in company demonstrations and training – half a day per company by a team of two.*
- Closing report for the project.

## Revised Implementation Strategy

Following considerable discussions with Steering Group members and major stakeholders, the steering group agreed to a revised strategy for implementation in order to improve the extent and breadth of implementation.

The following strategy was adopted:

- Continue with some company-specific demonstrations
- Enhance implementation through an implementation trial:
  - Contact key stakeholders asking them to take part in an implementation trial (letter in Appendix)
  - Send CD and instructions to willing participants
  - Follow-up a sample of these by a telephone interview
- Continue with other avenues of disseminating the CD as broadly as possible

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<sup>1</sup> Funded through the DTI Partners in Innovation scheme.

<sup>2</sup> The Safety, Health and Environment task force of the European Construction Institute.

## Company Specific Demonstrations

This activity was retained, although its overall significance was reduced by adding the implementation trial initiative. The following companies have attended the D4h implementation training session:

Reid Architecture	Stuart Barlow
John Seifert Architects	Andrea Glucker
Levitt Bernstein Associates	Andy Jobling
Sheppard Robson	Bob Kennan
BDP	Crispin Denny
Rolfe Judd	Jim Cox
Wates	John Rivet
Llwelyn-Davis	Mark Gage
EPR Architects	Mike Kirby
Scott Brownrigg	Peter Caplehorn
Lyons Sleeman Hoare	Peter Stackhouse
MACE	Philip Wills
HSE	Stephen Taylor
TP Bennett	Stuart Watson
Austin Winkley & Assoc	Tim Gough
Wates Group Services	Tony Metcalfe
Chapman Taylor Partners	Trevor Rowlinson
Aedas AHR	Trevor Smith

## CD Implementation Trial

Around 150 initial contacts were made with designers, planning supervisors and other consultants across the building, civil engineering and engineering sectors, in line with the target audience of the D4h CD. 90 CD's were requested and distributed and 44 follow up interviews were completed. The results from the interviews are recorded here (the answers used the 1-5 Likert scale, 5 was agree and 1 disagree).

In summary, there was overwhelming support for the D4h tool, with a very clear intention to employ it within the organisations represented in the sample. This response justified the decision to use this method as part of the implementation phase.

### 1 How many years design experience do you have?

0-5 yrs	6-10 yrs	11-15 yrs	16-20 yrs	21-25 yr	26-30 yr	30+ yrs
9= 20%	7 =16%	2=4%	6=14%	8=18%	6=14%	6=14%

### 2 What is your job position within your organisation?

Director	Partner	Associate architect	Architect	Planning supervisor	H&S manager/ Adviser	Project Manager/ QS/ other
9= 20%	2= 4%	7= 16%	12=28%	2= 4%	8= 19%	4= 9%

The results to question 1 and 2 show that respondents had a wide range of design experience and came from varying disciplines. However they can seem a little confusing, as many of the architects (main respondents) were classified as planning supervisors within their organisations but preferred to be referred to as a designer or as an architect. This concurs with other Loughborough University research which found that most planning supervisors did the PS role as a secondary function with their primary function being designer.

3 How many employees does your organisation have?

0-10	11-20	21-30	31-50	51-70	71-100	100+
10=23%	6= 14%	6= 14%	3 = 7%	2= 4%	3= 7%	14= 31%

It was the intention to implement D4h into wide ranging companies, especially size wise, otherwise the results could be perceived as skewed. The results show that this was achieved. It was particularly encouraging to gain access to the smaller design and consultancy practices as these represent a large proportion of the construction design sector and are typically hard to penetrate. This also demonstrates the impact of D4h when considered along with the positive responses to the following questions.

4 How would D4h fit into current work practises?

In essence, this open question was the true reflection of the value of D4h. As expected there were wide ranging responses from the question, however, the overriding theme was that D4h was a good tool and that it would benefit both the design phase as well as the health and safety requirements of a project. In addition, many of the respondents said that it would be used extensively as a reference tool, especially for CDM guidance.

5 I would use the CD to raise awareness health risks in construction?

Strongly disagree	Disagree	No opinion	Agree	Strongly agree
1	2	3	4	5
0	2= 4%	5= 11%	15= 34%	22= 50%

These results support the positive comments from question 4, in that D4h would be a useful guidance tool for assessing hazards and risk and will be used by 84% of the organisations.

6 I would use the tool as an 'aide memoir' through the design process?

Strongly disagree	Disagree	No opinion	Agree	Strongly agree
1	2	3	4	5
1= 2%	2= 4%	10= 22%	17= 38%	15= 34%

These results confirmed that 72% of the sample intended to use D4h as a tool to provide advice and guidance throughout the design process.

7 I would use the CD as the basis of a series of design for health workshops?

Strongly disagree	Disagree	No opinion	Agree	Strongly agree
1	2	3	4	5
7= 16%	5= 11%	6= 14%	16= 37%	10= 22%

These results suggest a more mixed response to the intention of using D4h as a workshop tool for designers. Nevertheless, almost 60% of those surveyed agreed or strongly agreed that they would do so.

8 I would mount the CD on our office intranet and encourage its use?

Strongly disagree	Disagree	No opinion	Agree	Strongly agree	
1	2	3	4	5	N/A
2= 4%		1= 2%	17= 38%	21= 49%	3= 7%

87% of the sample intended to mount D4h on their intranet in order to encourage its use. This is a very encouraging figure and confirms the strong support for the tool. It has also influenced Loughborough's intention to develop the CD further as a web-based tool after the completion of the DTI-funded project. The Not Applicable answers represent those organisations that do not have an office intranet.

9 At what stage would you refer to the CD most and why?

The responses to this open question show that the tool would be valuable in both the early stages of design, from inception through to scheme and also later, at the detailed design stage. The majority response was that D4h would be used in the outline design stage as a hazard and risk evaluation tool and could be included into the company risk assessment processes. In the detailed design stage it would be used to complement the process of risk analysis, as this is when many of the health intricacies are first discovered.

10 What role would the CD play in CPD and what changes would any changes be needed?

In response to this question, most of the respondents said it would be a good CPD tool as it stood at present. However, the main problem was that it contained too much information, so for a working CPD system then it would have to be sectionalised and with succinct questions and answers imbedded within the sections.

Furthermore, for it to be successful in this manner, the data would need to be periodically updated and reviewed, allowing new and improved examples to be included. Therefore, it was suggested that the easiest option would be for it to be web-based thus allowing continual change. The Loughborough team are currently seeking further funding to achieve this.

## 11 Are there any sections of the CD that are particularly strong or weak?

The majority of the responses to this question were positive, reflecting the strengths of D4h. The dominant strength of the tool appears to be the worked examples shown in the case studies.

*If a worked example to a problem can be shown to a designer then there is no excuse for its existence (anon).*

In addition, the respondents liked the way the health problems were presented, along with the simple flow charts of risk and hazard analysis.

The main weaknesses identified were, in parts the information was quite hard to find, and that safety was omitted. Finally, smaller examples were needed, *as not all health problems are not on the same scale as piling, for example (anon).*

### **Additional Implementation Initiatives**

Further to the activities covered already and in addition to the activities initially proposed in the D4h PIP, the team has negotiated the following:

- CITB have agreed to purchase 300-400 D4h CDs and include them as part of their resource pack on their Designers course
- CITB have agreed to purchase additional copies of the CD to sell as part of their range of training publications – sale price £40.
- ECI will produce ~100 CDs as free issue to all their member organisations.
- ECI will also produce CDs for sale as part of their bookshop service – sale price £40.
- ECI's annual international workshop for 2004, sponsored by CTRL, is themed on Occupational Health and D4h is the featured resource. 150 delegates are anticipated, particularly from civil engineering and engineering construction.
- CTRL (Channel Tunnel Rail Link) have agreed to host an additional implementation event covering a number of their major projects – this is currently programmed for March/April 2004.
- Nottinghamshire County Council and Nottingham City Council Design and property groups in conjunction with the Nottingham office of the HSE are organising a Designer awareness day covering CDM and H&S issues on sites – main speaker is Alistair Gibb speaking on designer interventions, majoring on D4h.
- Additional funding is currently being negotiated with a number of major stakeholders to aid the development of D4h into a CPD tool, mounted on the web. This will further support the dissemination and implementation of the tool. This will be organised in association with the main designer bodies such as ICE and RIBA.

### **Conclusion**

This report has demonstrated that the D4h team has completed the implementation phase as part of Milestone 6 and extended it considerably from what was envisaged in the original DTI Project Implementation Plan (PIP).