

Health and safety expert panel - Designing for health - Guidance for designers

Designing for Health: General Introduction and Explanation

Current approaches in the industry

ICE recognises the importance of the promoting the health agenda in construction and welcomes the attention our industry is now paying to this often neglected area. Through this Designing for Health (DfH) initiative ICE is pushing the health agenda among the design community, however we will not be isolating nor will we be confusing the message of safety, health and wellbeing.

In 2008 the Seoul Declaration on Safety and Health at Work proclaimed that;

“A national preventative safety and health culture is one in which the right to a safe and healthy working environment is respected at all levels...and where the principle of prevention is accorded the highest priority.”

In January 2016 at the Health in Construction CEO Breakfast Summit CEOs committed to;

“eradicate the thousands of cases of ill health and disease caused every year as a result of exposure to health hazards during construction work, as well as to address the growing incidence of mental ill health in our workforce”.

Their commitment was further extended at the January 2017 follow-up summit.

ICE believes that it is a designer’s core competence to translate the clients brief into a workable design that can be built, used, maintained and eventually demolished without negatively impacting the safety, health or wellbeing of those affected by the structure. This belief is underscored in the Construction (Design and Management) Regulations across UK and in related regulatory requirements in other jurisdictions in Europe and further afield. Construction is, first and foremost, a human business. Our commitment in ICE to extending the designing for health agenda to our life-long learning strategy, while emphasising our social responsibility, is contained within this range of DfH guidance.

Who are designers?

The CDM Regulations in GB and in NI specifically allocate duties to designers. The legal definition of designer in this instance is wider than traditionally recognised.

A designer is anyone (including the client) who makes a project decision, which has a significant consequence in respect of the health of those who may be affected. Consequently, this means that any member of the project team may attract designer duties, including the client, the architect, quantity surveyors or project managers, and this may occur at any stage of the project (for example when design takes place during the construction period, and involves specialist contractor-designers).

Promoting construction workers' health and wellbeing through design

Occupational illness/ disease is often a life-altering and sometimes a fatal outcome of prolonged exposure to a range of health hazards prevalent in construction, leading to cancers, respiratory disease or debilitating physical ailments. The impact on individuals, their families and society are immense consequently there is a challenge is on designers to take health seriously as they progress through the design process.

Value Engineering

Increasingly, projects are being subjected to an independent review to ensure that what has been specified represents 'value'. Value engineering (VE) is one approach to design that often gets bad press, largely because it is misconstrued as a cost-cutting exercise, however it is a valid approach and it can be effective for evoking creativity in the design team. The earlier VE is introduced into the design process the more effective it becomes.

Put simply VE asks the critical design questions repeatedly until all the options have been explored and the best design solution is selected.

The original designer may not be involved in the value engineering process, particularly if it is undertaken by the contractor. If that is so it is important that the reasons for the original design decision are understood, and the implications of any change are appreciated in terms of the affect on safety, health and wellbeing of others. The parties undertaking the value engineering review will need to ensure that this review includes among other considerations designing for health in the process.

About the designing for health – Guidance sheet series

The detailed designer guidance sheets in the series, while not intended to be prescriptive, address specific health related topics that provide the necessary information to allow designers to comply with their obligations to prevent or protect from harm and to enhance wellbeing through design. The guidance sheets relate to work activities, which potentially expose construction workers and those who use or are otherwise affected by the structure to health hazards. They are grouped to form logical design related categories.

These guidance sheets relate to work activities with the potential for risks to health, and are grouped to form logical design related categories. The designer will have to consider the particular circumstances for any situation to ensure that all significant health hazards are identified and their potential impact reviewed in any designers' hazard analysis/ risk

assessment process. Certain generic elements of construction work e.g. concrete works have been allocated their own sheet in the series and are cross-referenced within it.

The information is intended to help the designer eliminate hazards, where possible, and where eradication isn't an option present means to mitigate the effects or reduce the impact of any residual hazards remaining as a consequence of design decisions, and identify possible ways to eliminate or reduce these risks.

All the advice presented is given on the basis that it should assist designers to discharge their statutory duty. The onus, as always, is on the individual to be assured that what they do and how they act is in accordance with their professional and statutory obligations.

The guidance sheets should be read in conjunction with other relevant material, such as:

- ICE's Manual of Health and Safety in Construction, 2nd edition;
- ICE Designing for Health – Briefing Notes
- CIRIA's C755 document; CDM 2015 – construction work sector guidance for designers, 4th edition; and
- HSE Health and Safety in Construction (HSG150) 3rd edition.

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Exclusion: **Specialist structures such as those found in nuclear engineering, process engineering, or off-shore structures may present other health hazards not considered in this Design for Health guidance series.**

Designing for health – Guidance sheet in the series

	Construction Activity
001	General Introduction and Explanation
002	Site Set-Up and Clearance
003	Ground works
004	Concrete and Mortars
005	Steelwork
006	Buildings
007	Housing
008	Bridges
009	Demolition
010	Refurbishment
011	Internal Drainage & Building Services
012	Tunnelling

Designing for health – Briefing notes in the series

Construction related activities, that don't fit readily within the 'guidance sheet' series format are presented instead as a series of briefing notes. The following are currently on the list:

- Causal Links between Ill-health and Construction Work Activities.
- Health Issues Associated with Selected Construction Materials and Processes.
- Mental health and its impact on construction projects.
- Pavement design and construction.

Designing for health – Chapters in ICE manual of health and safety in construction

	Chapter Title
11	Recognising Health Hazards in Construction
12	Occupational Health Issues in Construction
13	Controlling Exposure to Chemical Hazards
14	Controlling Exposure to Biological Hazards
15	Controlling Exposure to Physical Hazards

Best practice/Current research

There is significant activity within the industry in respect of new materials, new methodologies and accepted standards. Many of these relate specifically to improving the health of those who construct, operate, maintain or eventually demolish the facilities that designers create. Many of our leading universities within UK and further afield are conducting research into construction health. Where it appropriate current research will be identified in the guidance sheets.

Abbreviations used in the series

	Construction Activity
HAVS	Hand-arm vibration syndrome
MSD	Musculoskeletal disorder
NIHL	Noise induced hearing loss
WRULD	Work-related upper limb disorder

Recommended further reading

ICE Health & Safety Expert Panel

<https://www.ice.org.uk/about-us/what-we-do/health-and-safety-expert-panel>

Paving Slabs

https://www.ice.org.uk/getattachment/disciplines-and-resources/briefing-sheet/paving-slabs/PavingSlabsBriefingNote_v5.pdf.aspx

Roofwork

<https://www.ice.org.uk/disciplines-and-resources/briefing-sheet/roof-work-repair-and-maintenance>

Contributors

Ciaran McAleenan

David Oloke

John Carpenter