

**March 2018**

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**DQI for Health Guidance**

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# Introduction to DQI

## Why improve ‘design quality’?

Evidence shows that patients recover faster in better designed hospitals, children score higher in quality designed schools and well designed neighbourhoods result in lower crime. In short, investing in high quality buildings can improve the welfare of business and society.

## What is the Design Quality Indicator?

The Design Quality Indicator (DQI) is a process for evaluating and improving the design and construction of new buildings and the refurbishment of existing ones.

DQI focuses on actively involving a wider group of stakeholders in the design of buildings than is usually the case. It involves not only the design and construction teams but all those who will use, finance and be affected by the building.

DQI is designed to set and track design quality at all key stages of a building’s development and incorporates post-occupancy feedback. It plays a fundamental role in contributing to the improved design, long term functionality and sustainability of building projects.

**‘DQI has been used in over 1,400 projects in 12 years’**

DQI has captured the views of thousands of individuals over time to deliver better facilities for clients.

## DQI for Health

DQI for Health has been developed as a design quality evaluation tool for all types of healthcare projects.

The healthcare-specific focus of AEDET (Achieving Excellence Design Evaluation Tool) has been migrated to DQI for Health and important aspects such as sustainability and patient safety have been updated. The DQI for Health update was commissioned by the Department of Health and has been piloted by NHS London and by NHS England. With the development of DQI for Health, AEDET has been phased out.

## Creating a common language

The DQI process is an inclusive process that establishes a Briefing Record as a firm platform from which stakeholders can agree common goals, interrogate designs, and demand excellence from suppliers. It is at its most effective when as wide a user group as possible becomes involved.

Representatives from both the supply and the demand side of a project take part and it is in this way that DQI can really help people work together to achieve the best building possible.

The Design Quality Indicator empowers the building’s stakeholder community by providing a structured way to talk about their new building. By encouraging

effective communication between suppliers and the eventual users of the building, the process helps suppliers deliver excellent buildings attuned to the users’ needs.

***“Through the DQI Process the collective views of the stakeholder group were validated in a manner in which we could all have confidence.***

***Our many views and many issues were clarified and distilled until they were focused on what was really most important...this directly informed the choices we made”***

# General Benefits

## General Benefits:

- Supports the business case and project gateway process
- Enhances risk mitigation
- Improves post project evaluation and benefits realisation
- Enables a simple and objective assessment of design quality
- Clarifies the design process by providing a common language shared by all stakeholders
- Empowers stakeholders to set and manage aspirations
- Ensures user briefing requirements are integrated in later stages
- Engenders sense of ownership of the building
- Simple to incorporate in all common forms of procurement
- Process outcomes are quickly available in visual form to facilitate discussion and agreement

## Users / Occupiers:

- Helps all stakeholders to communicate their needs and aspirations to the designers
- Provides end-user engagement without reliance on expert criteria that people feel excluded from
- Improves functional efficiency of working space
- Increases staff productivity
- Enhances the quality of space

*“...DQI raised my knowledge of plans for the project and helped develop a sense of ownership and commitment to the building – it was nice to be asked and I felt like I had more of a stake in the project.”*

## Client:

- Helps develop a shared vision for the whole project
- Clarifies the project brief
- Facilitates periodic testing of original aspirations
- Provides a structured framework for a good value design
- Can reduce whole life cost of the building
- Reduces user complaints
- Supports BREEAM and energy efficiency

## Estates / Facilities Managers:

- Helps develop a more sustainable building
- Incorporates post-occupancy feedback
- Helps avoid duplication, encourages standardisation and associated savings

- Ensures future proofing and avoids costly bespoke solutions
- Assists integration of experience from previous projects across the healthcare sector
- Facilitates participation in briefing discussions and communication with the designers and other stakeholders

*“... the DQI session left the architects with a good understanding of what we wanted... we are the people who are left with the building in the end – we have the most at stake in ensuring the building is fit for purpose.”*

## Designers:

- Helps all stakeholders to communicate their needs and aspirations to the designers
- Clarifies the project brief and why it is required
- Minimises design errors
- Environmental issues are highlighted early
- The briefing session provides a structure through which different parties communicate collectively

### Project Managers / Delivery partners:

- Manages stakeholder engagement in a structured and recorded way
- Clarifies the project brief
- Enables a comparative assessment of demand and supply side requirements
- Allows useful analysis and performance checks throughout the delivery process

***“The conversation which was structured around the questions was productive because all parties were talking about the same issues at the same time which opened up issues and ideas that we had not thought about before as a design team.”***



*Representatives from both the supply and the demand side of a project take part in DQI which can really help people work together to achieve the best buildings possible.*



# DQI Process

***DQI puts the client, stakeholders, the design & project team and constructor, in the same vehicle for the whole journey.***

Introducing the DQI process to the construction of a new building or the refurbishment of an existing building will dramatically improve the quality of the final product.

The DQI process consists of a series of workshops linked to the industry phases of a building project – Briefing, Concept Design, Detailed Design, Ready for Occupation, and In-use. Representatives of the demand and the supply side participate in the workshops. The events are prepared and facilitated by an independent DQI Facilitator who is accredited by the Construction Industry Council (CIC).

## Briefing (DQI Stage 1)

At the Briefing workshop the stakeholders debate and agree their aspirations for the project. The DQI Facilitator documents their consensus as to what the project should achieve in the form of a Briefing Record. This document contributes to the project design brief and becomes a benchmark against which to evaluate the design at later DQI Stage workshops

## Mid Design DQI and beyond

At Concept Design (DQI Stage 2) and Detailed Design (DQI Stage 3) workshop stakeholder participants will receive a presentation of the current design proposals

at a level of detail appropriate to the stage reached. Presentations should cover all design and construction disciplines and be accessible to a lay audience.

The aim of these workshops is to enable participants to compare their respective opinions of the design proposals and to help them identify the strengths and weaknesses of the scheme relative to the targets set in the Briefing Record.

Design stage assessments should be followed in due course by Ready for Occupation and In-use assessments

## DQI Questionnaire

At the heart of the process is the DQI questionnaire that is used to structure workshop presentations, discussions and reporting. The questionnaire is a comprehensive, non-technical set of statements under three main headings, Functionality, Build Quality and Impact. Together they measure all the factors applicable to the design quality of most buildings.

1. **Functionality** is concerned with the way in which the building is designed to be useful. The Functionality section of the questionnaire is sub-divided into Access, Uses and Space.
2. **Build Quality** relates to the performance of the building fabric and is sub-divided into Performance, Engineering and Construction.
3. **Impact** refers to the building's ability to create a sense of place and to have a positive effect on the

local community and environment. It is sub-divided into Urban and Social Integration, Internal Environment, Form and Materials, and Character and Innovation.

A breakdown of the three DQI Headings and an example of the question set is on page 6.

## Timing

The greatest benefits and results in achieving outstanding design are when DQI is introduced early in the project at the Briefing stage. However, DQI can equally be introduced at any stage the project has reached.

The DQI process follows a clear structure that is linked to the industry phases of a building project. At each stage there is a formal workshop and it is recommended that half day is allocated to the workshop (depends on the scale of the project and the participants attending). These workshops enable DQI to record what participants think about the building or design and present this information in clear and consistent way. The outputs help to inform the process of designing a better building.

The five DQI Stages are:

- |                           |                                |
|---------------------------|--------------------------------|
| 1. <b>Briefing</b>        | 2. <b>Concept Design</b>       |
| 3. <b>Detailed Design</b> | 4. <b>Ready for Occupation</b> |
| 5. <b>In-Use</b>          |                                |

How these stages fit with traditional health processes and the RIBA 2013 Plan of Work are highlighted on page 7.

## DQI's Framework

### Functionality

- Access
- Uses
- Space

### Build Quality

- Performance
- Engineering
- Construction

### Impact








- Urban and Social Integration
- Internal Environment
- Form and Materials
- Character and Innovation

## Functionality

### Use

<p>Uses of buildings, in the short and longer term, are derived from the care model of the organisation and from a clear, written and widely supported narrative brief.</p> <p>This Section is concerned with the way the building enables the users to perform their duties and operate the healthcare systems and facilities housed in the building. To get a good score under this Heading the building will be highly functional and efficient, enabling people to have enough space for their activities and to move around easily. A high scoring building is also likely to have some flexibility in use.</p>		Default Tag		Tag for this project													
17	The brief and design will facilitate the patient care model of the NHS/client organisation			R													
Every health building exists to benefit patient care; every healthcare organisation should have a clear written care model, which is available to all. The design should express and facilitate the healthcare philosophy of the organisation. Design inevitably involves trade-offs, so the relative values in terms of efficiency of healthcare delivery in the care model should be reflected in the design.																	
18	The building will accommodate the users' needs and will satisfy the agreed brief			R													
'Users' includes everyone who will use the building. There should be an agreed written and final brief catering for different Users' needs. Operational Policies for all elements of the proposed use capture these needs.																	
19	The building will enhance			<table><tr><td rowspan="4">Strongly Disagree</td><td rowspan="4">Disagree</td><td rowspan="4">Tend to Disagree</td><td rowspan="4">Tend to Agree</td><td rowspan="4">Agree</td><td rowspan="4">Strongly Agree</td><td rowspan="4">Not Applicable</td><td rowspan="4">Don't know</td></tr><tr></tr><tr></tr><tr></tr></table>		Strongly Disagree	Disagree	Tend to Disagree	Tend to Agree	Agree	Strongly Agree	Not Applicable	Don't know				
Strongly Disagree	Disagree	Tend to Disagree	Tend to Agree											Agree	Strongly Agree	Not Applicable	Don't know
Client organisations should																	
improvements should be t																	
20	The building's layout and pathways, work flows and																
Patient movements should			17 The brief and design will facilitate the patient care model of the NHS/client organisation														
cross infection and destak			Every health building exists to benefit patient care; every healthcare organisation should have a clear written care model, which is available to all. The design should express and facilitate the healthcare philosophy of the organisation. Design inevitably involves trade-offs, so the relative values in terms of efficiency of healthcare delivery in the care model should be reflected in the design.														
flows and the movement o																	
21	Where possible spaces v																
Section of Briefing and Mid Design Question/Statement Set																	



NHS England Project Appraisal Unit				This <i>'at a Glance'</i> guide is provided to assist those staff /organisations new to NHS business case process for construction and refurbishment projects. It is recommended that exact requirements and timings are confirmed with key stakeholders including the approving body before progressing individual project proposals.							
Construction / refurbishment capital investment and project activity guide: 2015-2016											
Version: January 2016											
Standard project/business case phasing		Strategic Outline Case (SOC) [Project Initiation Document - PID- for smaller schemes]	Pre OBC procurement option review (NHSPS/CHP only)	Outline Business Case (OBC)		Full Business Case (FBC)	Construction Phase	Post Project Evaluation (PPE)			
Private Finance Initiative (PFI /PF2) business case phasing		Strategic Outline Case (SOC)		Outline Business Case (OBC)	1. OJEU 2. Shortlist Bidders 3. Issue ITDP 4. Draft Appointment Business Case (dABC) approval 5. Issue ITSFB 6. Final Tenders 7.Recommend Preferred Bidder 8.Appointment Business Case (ABC) approval 9.HM Treasury approval 10. Confirmatory Business Case (CBC) approval. 11. Financial/Contract close			Construction Phase	Post Project Evaluation (PPE)		
Private Finance Initiative (PFI /PF2) business case approvals		SOC stage 1: Trust develops SOC SOC stage 2: DH SOC Approval Point (Monitor risk assessment for FT) SOC stage 3: Treasury SOC approval	OBC stage 1: Trust develops OBC OBC stage 2: DH OBC approval (Monitor risk assessment for FT) OBC stage 3: Treasury OBC approval point	PROCUREMENT Stage 1: OJEU notice issued Stage 2: Pre close of dialogue and draft final bids submitted	FBC Stage 1: DH approval of FBC (Monitor risk assessment) FBC Stage 2: Treasury FBC approval	PROCUREMENT Stage 3: Post preferred bidder-design development, financing and planning	FBC stage 3: DH final FBC approval point FBC stage 4: Treasury final approval point	Financial Close	Construction Phase	Post Project Evaluation (PPE)	
NHS Local Improvement Finance Trust (LIFT) business case phasing		Strategic Outline Case (SOC)		OBC procurement decision	LIFT Stage 1 business case		LIFT Stage 2 business case	Financial Close	Construction Phase	Post Project Evaluation (PPE)	
Department of Health (DH) 'Health Gateway Reviews' (DH Health Gateway update July 2013)		Gateway 0 (Strategic Assessment)		Gateway 1 (Business Justification)	Gateway 2 (Procurement Strategy)	Gateway 3 (Investment Decision)	Gateway 4 (Readiness for Service)	Construction Phase	Gateway 5 (Benefits Evaluation)		
Building Information Modelling (BIM) (update July 2013)		DATA EXCHANGE 1 Requirement & Constrain Model		DATA EXCHANGE 2 Outline Solution Model		DATA EXCHANGE 3 Construction Information Model	DATA EXCHANGE 4 Operation and Maintenance Information Model		DATA EXCHANGE 5 Post Occupation Validation Information Model and on-going O&M		
BRE Environmental Assessment Model (BREEAM)		Pre Assessment		Design Stage Assessment		Issue Interim Certificate 		Construction & Post Construction Assessment 		Evaluation Issue Final Certificate	
Design (Quality Indicator) assessments (DQI) with Construction Industry Council update 2014		Stage 1 Briefing		Stage 2 Mid Design		Stage 3 Detailed Design		Construction Phase	Stage 4 Ready for Occupation	Stage 5 In use	
External Design Review Panel (DRP) via CABE / Design Council		Dependant on nature of scheme		Dependant on nature of scheme and Local Authority planning requirements		Dependant on nature of scheme and Local Authority planning requirements		Construction Phase	Post Project Evaluation (PPE)		
Royal Institute of British Architects (RIBA) Stages		RIBA 2007 ►	Stage A Project Appraisal	Stage B Design Brief	Stage C Design Concept Check drawing requirement with approving body	Stage D Developed Design (1:200) Minimum1:200 drawings for preferred option. Possibly greater detail for novel, contentious, derogated designs	Stage D/E Design and cost estimates	Stage E: Technical Design Stage F: Production Stage G: Tender documentation Stage H: Tender Action		Stage J: Mobilisation Stage K: Construction to practical completion.	Stage L Post Practical Completion
		RIBA 2013 ►	0 Strategic Definition	1 Preparation & Brief	2 Concept	3 Definition	4 Technical Design		5 Construction	6 Handover	7 In use
DH Procure 21 plus (P21+) Key Stages		P21+ Stage 1		P21+ Stage 2		P21+ Stage 3		P21+ Stage 4		P21+ Stage 5	
Trust registers scheme											
PSCP selection process											
PSCP selected											
Contract entered into											
Design Development								Reach GMP			

## Who should attend?

Once your project has commissioned the use of DQI, the Accredited Facilitator will work with you to ensure the relevant individuals attend the workshop. This will, in part, depend on the nature of the project, the stage of the assessment and the number of team members who are already associated with it. An example of some of those who are likely to attend one, more, or all of the assessments include:

### Organisation's Project Leads

- SRO
- Project Design Champion
- Project Director
- Project Manager
- Head of Finance
- Head of Estates
- Head of Facilities
- Infection Control Lead
- Lead nurse
- Lead Clinician
- Department Head(s) whose staff will use accommodation

### External Stakeholders

- Patient representative(s)
- Carer(s)
- Associated voluntary organisations
- Local Healthwatch representative
- Health and Wellbeing Board representatives
- Local GPs

- Local Commissioner(s)
- Local Authority representative

### Organisation's other in-house stakeholders

- Junior Clinician
- Nurse
- Porter
- Caterer
- Admin services
- Patient & Staff Safety
- Procurement Lead
- 

### Organisation's External Advisors

- Cost Advisor
  - Architect
  - Healthcare Planner
  - PSCP / Lead contractor
- Any specialist that may be required, for example  
Radiation Protection Officer

## At the Workshop

At the workshop Facilitators use their knowledge of the DQI process to formulate and deliver the structure needed for meeting interactions to be effective. The Facilitator focuses on group dynamics and interaction, ensuring the workshops participants focus on the content and the substance of DQI Questions.

Facilitators will also bring understanding and experience of the briefing, design and building procurement processes. This will help stakeholders

who are unfamiliar with the project process, design and construction jargon.

## DQI Outputs

It should be noted that participants often comment that simply bringing the stakeholder community together to discuss their respective views of a project, in a way that otherwise seldom happens, is reward in itself for the few hours invested in attending the workshops.

The DQI Facilitator is responsible for applying the DQI analysis tool to the data collected during the workshop to prepare a Workshop Report. This includes simple graphical representations and a narrative that compares the views of different participants and measures stakeholder assessments against their aspirations at Briefing. The Workshop Report will contribute to the development of the design and the success of the final scheme.

## Health Accredited

By successfully undertaking all five DQI Assessment stages a project receives the Construction Industry Council's DQI Health badge of Accreditation



# DQI Outputs

## DQI Briefing

- Sets stakeholder aspirations
- Achieves consensus throughout the group
- Creates a DQI Briefing record of issues and images that have been discussed and that have informed decisions

All outputs and notes from the Briefing session are recorded in the DQI Facilitator's report and can be used as part of the output specification documentation.

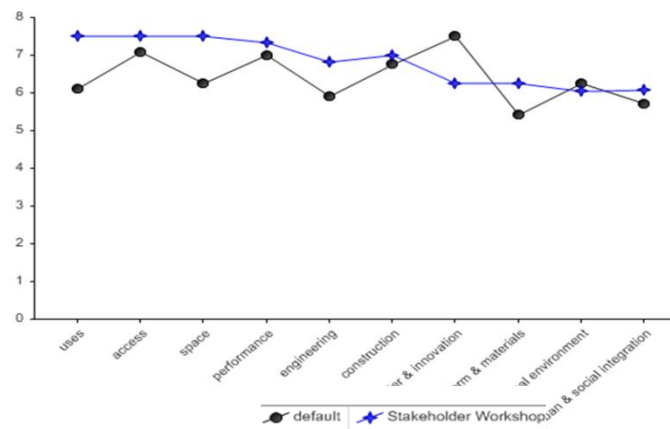


In the briefing record there are set benchmarks against the framework established by the DQI Working Group. These targets can be adjusted to suit the aspirations of the project. If this is the case the Facilitator will work

with you to update selected section questions under the following headings

- **Required.** Compliance with standards and regulations.
- **Desired.** Above plus the setting targets beyond the minimum.
- **Inspired.** Above plus setting exceptional targets.
- **Not applicable:** Where the question is not relevant to the project.

The Briefing target and default line illustrate targets for the project in all the different sections and compares it with the original DQI Benchmark.



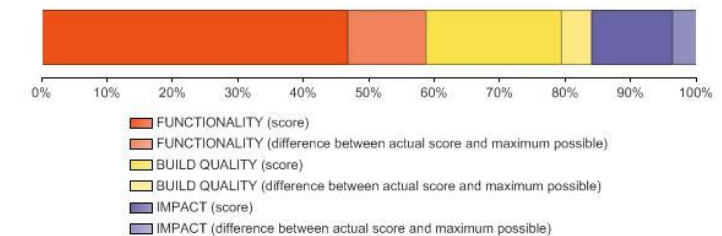
## DQI Assessment

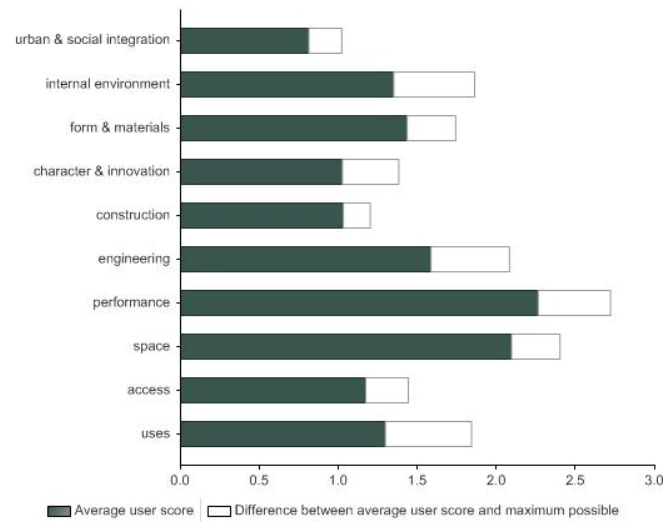
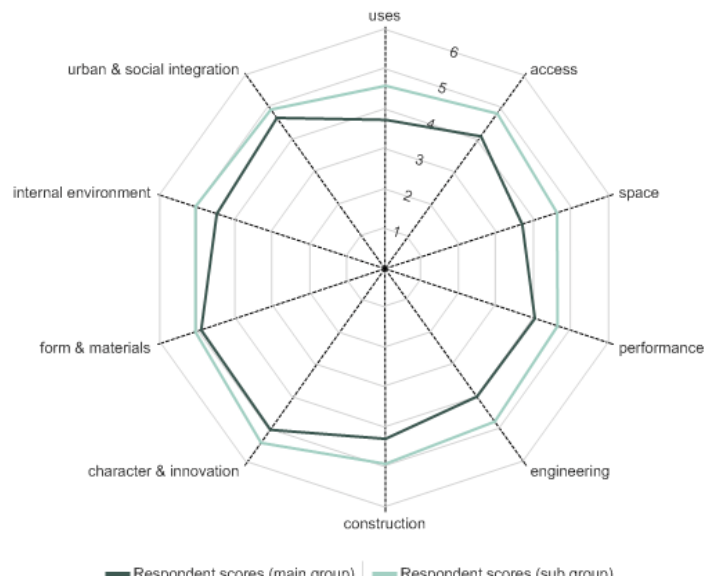
The DQI outputs at the assessment stages include the following:

- Section Scores
- Section Scores Weighted
- Quality Dimensions
- Supporting Report

## Quality Dimensions

The Quality Dimensions graph illustrates the overall DQI priorities and it is scaled between 0% to 100%. It visualises two sets of results; firstly it takes into account the overall weightings allocated to Functionality, Build Quality and Impact. The length of the segment shows the importance of that dimension compared to the others two. Secondly the darker colour of the segment summarises how well the participants scored the building or design against the questions within that dimension.





## Section Scores

The Section Scores graph is a spider diagram scaled between 0 and 6. This graph displays the average of all the selected participants' answers to each section. The higher the score (the further out) the better the participants felt the design or building was achieving that characteristic. The graph provides an idea of how well a building or design is thought to have performed in each section.

This graph can be set out to show two sets of data (a main group and a sub group). It can be used to see the different scoring of groups such as designers vs users and to highlight where there are significant differences in views.

## Section Scores, Weighted

The Section Scores Weighted graph is weighted using the data given by participants at the end of the main sections. This graph allows the team to see the most important sections (the overall length of the white bar) and how well the building/design is performing against each section (the dark bar). The project teams are therefore able to see which areas specifically can be improved to deliver great design. The scale of this graph is not set and can vary due to the original weighting provided.

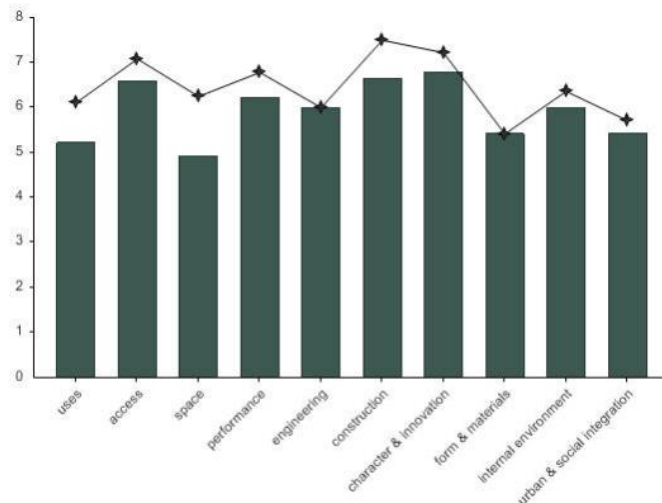


## Target line

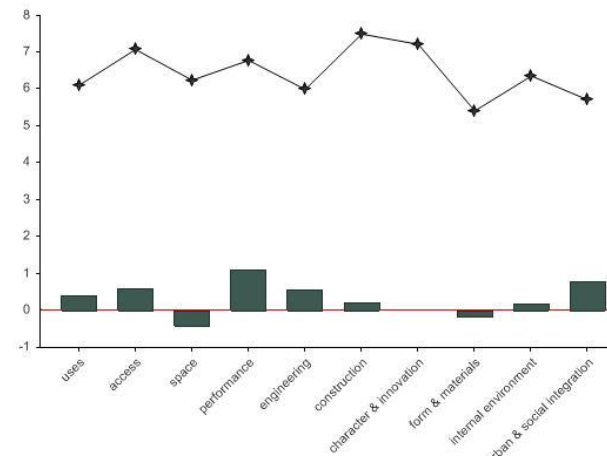
The Target line graph is generated by comparing the results achieved by the design or building in the DQI Assessment tool, with the active Briefing Record tags - Required, Desired, Inspired and Not Applicable. This is done using an algorithm which weights the results depending upon the tags; it will not weigh any statements that are tagged Not Applicable.

The target line is the maximum the design or building can achieve. The green bars display the results from the assessment and highlight where a building or a design is:

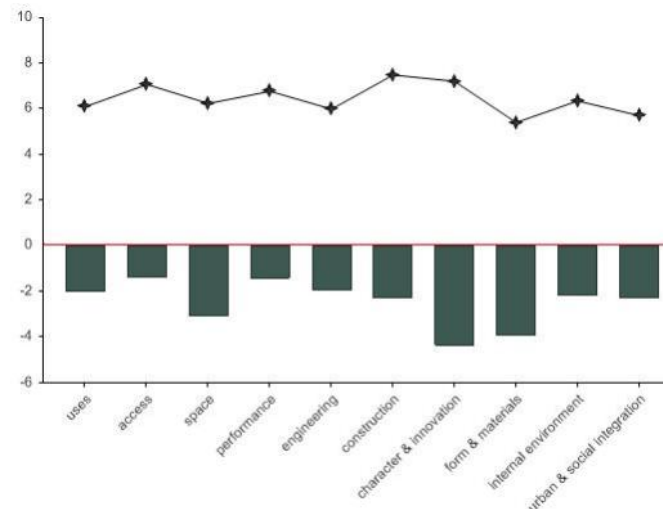
- doing very well and meeting, or nearly meeting the target line, so participants feel the building is not only achieving what is Required, but excelling in the Desired and Inspired statements to help deliver a building of distinction (example 1)



- achieving the Required characteristics to deliver a building which fulfils its purpose (example 2)



- underachieving on what participants want from their building (example 3)



There may be several assessments associated with a particular project and results can be compared.

Any statements that were tagged as Required but which participants felt have not been achieved are listed above the target line graph. This list should be taken seriously and particularly during the design stage these should form an action for design development.

## Follow Up Assessments/Actions

The DQI Report is issued to the Client within 14 days of the workshop being held.

Observations highlighted in the report are of a specific moment of time in the design/construction process. The opportunity to improve quality occurs between Assessments based on the actions the project team take to address shortfalls following the information provided in the report.

Each Report forms the basis of the following Assessment.



## Keeping In Touch

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DQI for Health	@DQIHealth

## Website

Visit the DQI website [www.dqi.org.uk](http://www.dqi.org.uk) to see case studies and organisations providing the DQI Accredited Facilitators and request a DQI Quote for your project.

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