



# AEDET EVOLUTION

## Design Evaluation Toolkit

# AEDET Evolution

**Healthcare building design frequently involves complex concepts which are difficult to measure and evaluate. The AEDET Evolution toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the three key area of Impact, Build Quality and Functionality.**

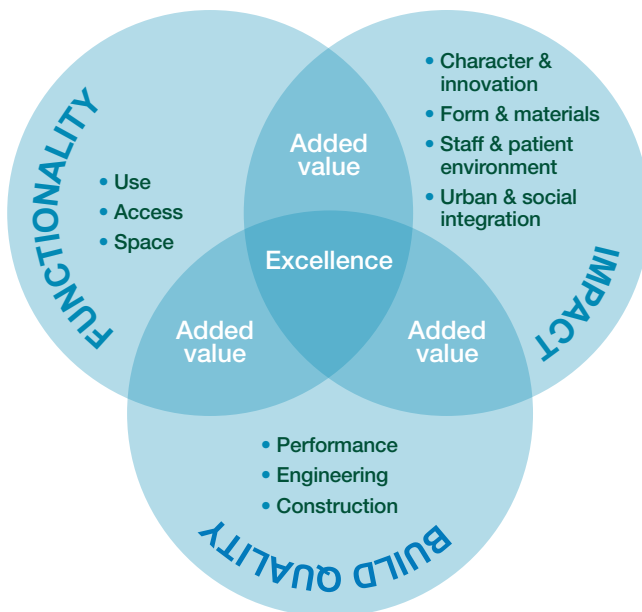
The new version of AEDET, known as AEDET Evolution, represents a significant development of the original AEDET tool. It retains the same objectives and mostly deals with the same issues.

The AEDET toolkit is a major influence, assisting Trusts and the NHS in determining and managing their design requirements from initial proposals through to post project evaluation. It forms the key agenda for design reviews, it is being used as a benchmarking tool, and forms part of the guidance for ProCure21, PFI, LIFT and conventionally funded schemes.

## THE TOOLKIT

The NHS has worked closely with CABE, the CIC and Sheffield University to develop the evaluation criteria to ensure we work within a common industry framework.

AEDET Evolution has 3 main sections – **Impact, Build Quality** and **Functionality** – split into 10 assessment criteria. Scoring these criteria assesses how well a healthcare building complies with best practice.



# Contents

---

Overview	4
Who should use AEDET Evolution?	
When should AEDET Evolution be used?	
What is required?	
Instructions for use	6
Different uses for AEDET Evolution	
At what stage of the design development should the toolkit be used?	
Comparing and selecting schemes on the basis of design excellence	
How should the design evaluation toolkit be used in benchmarking?	
Design evaluation workshops	
Scoring system	9
How to use AEDET Evolution	
Scoring statements	
Manually scoring overall headings	
Scoring layer	11
Character and innovation	
Form and materials	
Staff and patient environment	
Urban and social integration	
Performance	
Engineering	
Construction	
Use	
Access	
Space	
Guidance layer	16
Impact	
Character and innovation	
Form and materials	
Staff and patient environment	
Urban and social integration	
Build quality	
Performance	
Engineering	
Construction	
Functionality	
Use	
Access	
Space	
Output	24
Evidence layer	25

# Overview

AEDET is a tool for evaluating the quality of design in healthcare buildings. It delivers a profile that indicates the strengths and weaknesses of a design or an existing building. It is not meant to produce a simplistic single overall score. Because of the nature of design, which inevitably involves tradeoffs, it may not be possible to produce a building which would have the maximum score for all the sections. Indeed it may quite often be the case that a high score for one statement reflects a design which inevitably may be scored low on another statement. A single overall score would thus be misleading and uninformative.

AEDET can either be used by individuals or in workshops by groups. In the latter case it is probably desirable that an experienced user of AEDET should facilitate the group to avoid excessively lengthy debate.

The latest version of AEDET is known as AEDET Evolution and it represents a significant development of the original AEDET tool. Although it has the same objectives and mostly deals with the same issues, it may not be possible to compare scores directly between AEDET and AEDET Evolution.

AEDET is a tool specifically directed towards achieving excellence in design rather than ensuring compliance with legislation, regulation and guidance. High scores in AEDET do not therefore necessarily guarantee compliance. In particular the whole question of the sustainability and energy consumption rates of the design are only dealt with in passing in AEDET. This is because another more appropriate tool exists for the evaluation of designs for environmental and energy issues called NEAT. Although AEDET can be used in standalone mode, a design can only be demonstrated to be fully successful when NEAT is used in conjunction with AEDET.

## WHO SHOULD USE AEDET EVOLUTION?

AEDET is designed to be used by those involved in the commissioning, production and use of healthcare buildings. In particular public and private sector commissioning clients, developers, design teams, project managers, estates/facilities managers and design champions may find AEDET helpful. User clients such as patient representatives and members of the general public should also be able to use AEDET.

However it may be more appropriate for them to do so in workshops working alongside other more experienced professionals.

## WHEN SHOULD AEDET EVOLUTION BE USED?

- AEDET can be used to evaluate existing buildings in order to compare them or understand their strengths and weaknesses.
- AEDET can be used on the plans for new buildings in order to evaluate and compare designs.
- AEDET can be used on 'imaginary' buildings in order to set standards for a brief.
- AEDET can be used at various stages during the design of healthcare buildings. As the level of detail of the information available increases it may be possible to respond to more of the statements in AEDET.

## WHAT IS REQUIRED?

The minimum you need is the AEDET **scoring layer**. The **guidance layer** may be helpful particularly if you are using AEDET for the first time. The **evidence layer** in AEDET Evolution is only necessary either for interest or if you wish to see exactly why a particular section and its constituent statements are included.

AEDET may be a helpful tool to enable a group to come to a common understanding. If you are using AEDET as a group it may be helpful to have a facilitator who can moderate the group discussions. There are two ways of doing this. You may try to arrive at a consensus for each statement score using discussion of the group as a whole. Alternatively you may prefer first to score all the statements individually and then come together as a group to resolve differences. In either case it is important that the facilitator should ensure that any representatives of the public or patients who may lack experience of technical knowledge are able to express their views and have them listened to.

Always make sure about the scale at which you are using AEDET. For example this could be at a building scale, a department scale or a complete site scale. It is particularly important to agree this before you begin if you are working as a group. To help decide on the scale you need to look first at the level of detailed information

available. If you decide to work at a smaller scale than a complete building then the NHS ADB (Activity Database) system may be helpful in deciding how to sub-divide the building. This database holds a master project which contains information on some 30 departments and 1,500 rooms (as room data sheets).

# Instructions for use

AEDET Evolution is a tool for evaluating the quality of design in healthcare buildings. It can be used on existing buildings and on the plans for new ones.

AEDET Evolution has 3 layers:

- The **scoring layer** on which you score
- The **guidance layer** that gives more detailed help
- The **evidence layer** that points to available research evidence

## DIFFERENT USES FOR AEDET EVOLUTION

The AEDET Evolution may be used in various ways:

- In standalone form
- Evaluation workshops
- Benchmarking uses
- In DART workshops

Decide at what scale you are going to use AEDET Evolution. This may depend upon the level of detailed information you have available. AEDET can be used to score at the scale of buildings, parts of buildings or whole sites.

### In standalone form

People and NHS organisations can use the toolkit as a stand alone for various purposes. In this form it not only provides an evaluation toolkit but also serves as a standing agenda which can inform many design based policies.

### Evaluation workshops

This is perhaps the most common way of using the AEDET Evolution.

Two ways of organising workshops are often used: the consensus reaching workshop and the individually scored and collated workshop. In both cases the evaluation will need to be carefully facilitated, preferably by an independent but knowledgeable facilitator.

It is important to make sure that a balanced group of stakeholders are involved in the workshop. Experience

to date suggests that roughly between 8 and 16 people representing the following groups should be invited to take part in an AEDET workshop:

- Strategic Health Authorities
- Primary Care Trusts
- NHS Trusts
- Patient groups
- NHS staff
- Trust strategic management board
- Community health groups
- Clinical user groups
- Local strategic partnerships
- Health action zones
- Hospital development and design teams
- Arts groups
- others

### Benchmarking uses

Two benchmarking systems are using AEDET Evolution. The EfM system may be used by any NHS organisation. The ProCure21 programme also has a benchmarking system in use which all their schemes are expected to use.

### In DART workshops

DART is a bespoke risk assessment toolkit used in ProCure21 schemes.

## AT WHAT STAGES OF THE DESIGN DEVELOPMENT SHOULD THE AEDET EVOLUTION TOOLKIT BE USED?

The AEDET Evolution Toolkit has been devised to enable NHS and PCT Trusts to measure and score a design. The toolkit should be used firstly as early as possible in the design process, then repeated as appropriate throughout the development of the design before being applied in the post-project evaluation. Thus it can not

only be used to inform the briefing process but also to assess the degree of compliance with the original brief.

The criteria used in the toolkit may be adapted by PCT and NHS Trusts, and incorporated into their specifications of design vision, philosophy and quality, to form an important part of their briefing, whether using exchequer funding or a PFI contract.

The AEDET Evolution design evaluation process consists of the following stages:

- Set and agree the time table of milestones when design will need to be evaluated for the particular project (different procurement routes have issued their own guidance);
- Assemble the data and arrange the workshop date, venue, etc, for each milestone;
- Run an interactive multidisciplinary decisions analysis workshop (For smaller projects it may not be necessary to hold a formal workshop);
- Return the output data to the relevant benchmarking database and or feed into the other evaluation criteria of the business case, report or notify others, as appropriate.

## COMPARING AND SELECTING SCHEMES ON THE BASIS OF DESIGN EXCELLENCE

Where several design proposals are competing, the Trust can use their design evaluations to make direct comparisons of the competing schemes. In a discussion of the relative merits of schemes or design options, the team can make informed comparisons which will enable them to confidently select the design which best meets their vision and requirements. The toolkit will also facilitate the identification of key issues or areas for further development by the designer, depending on the stage of procurement.

NHS Trusts and PCTs pursuing PFI schemes are strongly recommended to ensure that they have an audit trail that is fully integrated into the final selection processes that records the AEDET design evaluations of all of the bids at the various stages.

## HOW SHOULD THE DESIGN EVALUATION TOOLKIT BE USED FOR BENCHMARKING?

It is intended that the design evaluation toolkit tool will be used to benchmark design and a national framework to support this will be developed. Trusts should of course seek to achieve as high a score as possible, but at least a score 3, for each of the ten main criteria. Where scores fall below that level Trusts should clearly be actively seeking to work with their advisors to improve the design and raise the evaluation scores.

## DESIGN EVALUATION WORKSHOPS

The purpose of running design evaluation workshops is to enable multi-disciplinary teams, supported by their technical advisors, to have an opportunity to discuss the evaluation scores together.

### Outputs from the Design Evaluation Workshop

The main output from the workshop should be a dashboard display which both contain and illustrate the numeric values of the decisions of the evaluation team.

### Information required for an AEDET Evolution evaluation workshop

AEDET Evolution can be used at various stages in the design and use of a building. Thus there will be various levels of design information that may be available at the selected evaluation stage.

NB: It is not expected that design teams produce any information over and above that already in existence for an AEDET evaluation.

### Analysing and presenting the information to the workshop

At the main evaluation stages of a large project there will be technical reports, specifications etc., which will need to be analysed by the technical advisers. They will be seeking to test the design proposals against the output specifications set in the brief. It will therefore be necessary for the technical advisers to present the evaluation team with as much pre-analysed information as possible giving, them more time to make the key judgements during the workshop.

It is suggested that the following information is made available to the team evaluating a design. There will be a need for both written and graphical information.

#### Written information

- A brief introduction of the Trust, the site and the scheme should be provided.
- It may be appropriate to provide a 'History in Plans', demonstrating the original thinking, how decisions were proposed and ideas from the very initial stages to the most recent stages.
- Phasing of the scheme should be set out alongside a predicted or approximate time scale. It should include key milestone dates achieved, as well as any predicated milestone dates.
- A Scheme Overview including:
  - The size and nature of scheme [acute/DGH/mental health/ primary care]

- Whether the project is a complete new build or a refurbishment.
- The nature of the site and whether it is urban or a green-field site and a brief description of the architectural form of the scheme.
- A description of the key service components and their inter-relationships.
- The departmental relationship information may be specified using diagrams. The design response to the specifications of the Trust, the required capacity, and adaptability for future use.
- The Design Vision and Philosophy should be based on creating a facility that carefully balances a building that is a statement of civic pride against the need to create a welcoming environment that instils a sense of comfort and support. The expectation is that the scheme will provide a modern, quality, functional and therapeutic environment.

### Graphical information

- It is recognised that the level, detail and quality of information will vary at various design stages, but it is important that the design team presents sufficient information for the evaluation to be made. The following list suggests the design information, which will be useful for a presentation at the start of an AEDET evaluation workshop, in order to give a sufficient understanding of the scheme design.
- It is important that design team(s) provide clear, good quality information which can be displayed.

It is helpful to use an appropriately sized room which allows large size plans to be displayed on the walls or display boards, and where PowerPoint presentations can be made.

Where more than one design proposal is being evaluated, sufficient time for setting up and removing schemes should be allowed.

### Summary list of suggested presentation information

- Site Plans
- Development Control Plans
- Site and Building Sections
- Existing & Proposed Floor Plans
- Elevations
- Exemplar Room Plans

This list is not in any way exhaustive and will frequently need to be augmented as circumstances dictate.

# Scoring system

AEDET Evolution has 3 main areas – **Impact, Build Quality** and **Functionality** – split into 10 sections each of which will produce a score. The 10 sections summarise how well a healthcare building complies with best practice. The sections have several statements that taken together build up a score for that section. Section C, Staff and patient environment, can also be handled in a more thorough way by the more detailed ASPECT toolkit. NEAT should also be used alongside AEDET to ensure a design meets all the NHS targets on energy and the environment.

## HOW TO USE AEDET EVOLUTION

The scoring and guidance layers are available as a Microsoft Excel spreadsheet. The instructions below assume the spreadsheet is being used for the AEDET design evaluation.

## SCORING STATEMENTS

You should try to respond to every statement on the scoring layer. However it is not the scores of individual statements that matter so much as the score for each section overall. The statements are there primarily in order to break that section down into manageable and limited sets of issues that may be much easier to consider than simply trying to arrive directly at a score for the section overall.

### Scoring

Work on the scoring layer responding to the statements by giving each a score on the 6 point scoring scale.

The guidance layer gives a more detailed explanation of the statements and help on the criteria for achieving good scores. The guidance layer also helps to interpret the statements in relation to specific building types such as for example primary care or mental health. The evidence layer summarises the research evidence that supports each section and, where possible, points to the primary published sources.

Once you have scored each statement in a section the tool will calculate an average score for the whole section. The tool will take into account any weighting you may have used. (See Weighting).

### Guidance layer

You can view the guidance layer for any statement by using the expander in the margin to the left of the statement. Using the expander when the guidance is visible will hide the layer.

### Weighting

On the scoring layer each statement may be given a weighting of High (2), Normal (1) or Zero (0). This can be used to determine the effect of the statement in arriving at an overall score for that section. By default, the statements have a weighting of Normal (1).

Alternatively in some cases a statement may have a greater than usual importance and may be given a weighting of 2 to double its effect in arriving at the score for the section.

You may decide for yourself when to use these weightings, perhaps to reflect the care model applying to the building under examination. The guidance layer also gives some hints as to circumstances or building types where you might consider using double weighting.

### Using the 6 point scoring scale

The best score is 6 and the poorest score is 1. Make full use of all 6 points on the scale. Do not 'save' 1 for an impossibly bad scheme or 6 for a perfect scheme. A score of 6 should be used for the best it is reasonable to expect. Be realistic.

The 6 point scoring scale is used to express a level of agreement with the statement. In this case the scores should be used as follows:

- Virtually complete agreement (6)
- Strong agreement (5)
- Fair agreement (4)
- Little agreement (3)
- Hardly any agreement (2)
- Virtually no agreement (1)

### Unable to score

You may find you are more confident about your scores for some sections than others. You may find some statements are difficult to respond to due either to lack of knowledge or a lack of available information. In these cases a score of 'unable to score' can be used.

### Notes

A notes field is used to record optional additional comments regarding the weighting and scoring values for each statement. The note field should always be completed when a score of 'unable to score' is given.

### MANUALLY SCORING OVERALL HEADINGS

The Excel spreadsheet and standalone versions of the AEDET toolkit calculate the section average scores automatically.

If you have completed paper-based scoring you may want to calculate the average score for all the statements under a section. The correct way to do this is as follows:

- Statements weighted Zero (0) are excluded from the calculations
- Statements weighted Normal (1) have their score added in once
- Statements weighted High (2) have their score added in twice

This gives a total score for the heading.

Next calculate the number of statements used. Add in 1 for every normally weighted statement and 2 for every double weighted statement. (Do not add anything for statements weighted 0).

Finally divide the total section score by this number of statements to give an average.

It is strongly recommended that this average number is not used mechanistically but as a guide to suggest the overall score you arrive at for the section using your judgement and local knowledge.

# Scoring layer

Example score sheets, taken from the Microsoft Excel spreadsheet version, for the 10 sections in the AEDET toolkit:

IMPACT: Character and innovation				
<p>The four IMPACT sections deal with the extent to which the building creates a sense of place and contributes positively to the lives of those who use it and are its neighbours.</p> <p>Section A deals with the overall feeling of the building. It asks whether the building has clarity of design intention, and whether this is appropriate to its purpose. A building that scores well under this heading is likely to lift the spirits and to be seen as an exemplar of good architecture of its kind.</p>				
ID	Description	Weighting	Score	Notes
A.01	There are clear ideas behind the design of the building	<input type="text"/>	<input type="text"/>	<input type="text"/>
A.02	The building is interesting to look at and move around in	<input type="text"/>	<input type="text"/>	<input type="text"/>
A.03	The building projects a caring and reassuring atmosphere	<input type="text"/>	<input type="text"/>	<input type="text"/>
A.04	The building appropriately expresses the values of the NHS	<input type="text"/>	<input type="text"/>	<input type="text"/>
A.05	The building is likely to influence future designs	<input type="text"/>	<input type="text"/>	<input type="text"/>

IMPACT: Form and materials				
<p>Section B deals with the nature of the building in terms of its overall form and materials. It is primarily concerned with how the building presents itself to the outside world in terms of its appearance and organisation. Although it deals with the materials from which the building is constructed it is not concerned with these in a technical sense but rather the way they will appear and feel throughout the life of the building.</p>				
ID	Description	Weighting	Score	Notes
B.01	The building has a human scale and feels welcoming	<input type="text"/>	<input type="text"/>	<input type="text"/>
B.02	The design takes advantage of available sunlight and provides shelter from prevailing winds	<input type="text"/>	<input type="text"/>	<input type="text"/>
B.03	Entrances are obvious and logically positioned in relation to likely points of arrival on site	<input type="text"/>	<input type="text"/>	<input type="text"/>
B.04	The external materials and detailing appear to be of high quality	<input type="text"/>	<input type="text"/>	<input type="text"/>
B.05	The external colours and textures seem appropriate and attractive	<input type="text"/>	<input type="text"/>	<input type="text"/>

**IMPACT: Staff and patient environment**

Section C deals with how well an environment complies with best practice as indicated by the research evidence.

ID	Description	Weighting	Score	Notes
C.01	The building respects the dignity of patients and allows for appropriate levels of privacy and dignity	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.02	There are good views inside and out of the building	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.03	Patients and staff have good access to outdoors	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.04	There are high levels of both comfort and control of comfort	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.05	The building is clearly understandable	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.06	The interior of the building is attractive in appearance	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.07	There are good bath/toilet and other facilities for patients	<input type="text"/>	<input type="text"/>	<input type="text"/>
C.08	There are good facilities for staff, including convenient places to work and relax without being on demand	<input type="text"/>	<input type="text"/>	<input type="text"/>

**IMPACT: Urban and social integration**

Section D deals with the way the building relates to its surroundings. It asks whether the building plays a positive role in the neighbourhood whether that is urban, suburban or rural. A building that scores well is likely to improve its neighbourhood rather than detract from it.

ID	Description	Weighting	Score	Notes
D.01	The height, volume and skyline of the building relate well to the surrounding environment	<input type="text"/>	<input type="text"/>	<input type="text"/>
D.02	The building contributes positively to its locality	<input type="text"/>	<input type="text"/>	<input type="text"/>
D.03	The hard and soft landscape around the building contribute positively to the locality	<input type="text"/>	<input type="text"/>	<input type="text"/>
D.04	The building is sensitive to neighbours and passers-by	<input type="text"/>	<input type="text"/>	<input type="text"/>

**BUILD QUALITY: Performance**

The three BUILD QUALITY sections deal with the physical components of the building rather than the spaces. This is therefore what might be thought of as the more technical and engineering aspects of the building. It asks whether the building is soundly built, will be reliable and easy to operate, last well and is sustainable. It is also concerned with the actual process of construction and the extent to which any disruption caused is minimised.

Section E is concerned with the technical performance of the building during its lifetime. It asks whether the components of the building are of high quality and fit for their purpose. However we are not concerned here with how well the building functions in relation to the human use of it which belongs in another section.

ID	Description	Weighting	Score	Notes
E.01	The building is easy to operate	<input type="text"/>	<input type="text"/>	<input type="text"/>
E.02	The building is easy to clean	<input type="text"/>	<input type="text"/>	<input type="text"/>
E.03	The building has appropriately durable finishes	<input type="text"/>	<input type="text"/>	<input type="text"/>
E.04	The building will weather and age well	<input type="text"/>	<input type="text"/>	<input type="text"/>

**BUILD QUALITY: Engineering**

Section F is concerned with those parts of the building that are engineering systems as opposed to the main architectural features. It asks whether the engineering systems are of high quality and fit for their purpose, will be easy to operate and if they are efficient and sustainable.

ID	Description	Weighting	Score	Notes
F.01	The engineering systems are well designed, flexible and efficient in use	<input type="text"/>	<input type="text"/>	<input type="text"/>
F.02	The engineering systems exploit any benefits from standardisation and prefabrication where relevant	<input type="text"/>	<input type="text"/>	<input type="text"/>
F.03	The engineering systems are energy efficient	<input type="text"/>	<input type="text"/>	<input type="text"/>
F.04	There are emergency backup systems that are designed to minimise disruption	<input type="text"/>	<input type="text"/>	<input type="text"/>
F.05	During construction disruption to essential services is minimised	<input type="text"/>	<input type="text"/>	<input type="text"/>

**BUILD QUALITY: Construction**

Section G is concerned with the technical issues of actually constructing the building and with the performance of the main components. A building that scores well is likely to be constructed as quickly and easily as possible under the circumstances of the site and to offer a robust and easily maintained solution.

ID	Description	Weighting	Score	Notes
G.01	If phased planning and construction are necessary the various stages are well organised	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.02	Temporary construction work is minimised	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.03	The impact of the building process on continuing healthcare provision is minimised	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.04	The building can be readily maintained	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.05	The construction is robust	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.06	The construction allows easy access to engineering systems for maintenance, replacement and expansion	<input type="text"/>	<input type="text"/>	<input type="text"/>
G.07	The construction exploits any benefits from standardisation and prefabrication where relevant	<input type="text"/>	<input type="text"/>	<input type="text"/>

**FUNCTIONALITY: Use**

The three FUNCTIONALITY sections deal with all those issues to do with the primary purpose or function of the building. It deals with how well the building serves these primary purposes and the extent to which it facilitates or inhibits the activities of the people who carry out the functions inside and around the building

Section H 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 the building will be highly functional and efficient, enabling people to have enough space for their activities and to move around economically and easily in a way that relates well to the policies and objective of the Trust. A high scoring building is also likely to have some flexibility in use.

ID	Description	Weighting	Score	Notes
H.01	The prime functional requirements of the brief are satisfied	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.02	The design facilitates the care model of the Trust	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.03	Overall the building is capable of handling the projected throughput	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.04	Work flows and logistics are arranged optimally	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.05	The building is sufficiently adaptable to respond to change and to enable expansion	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.06	Where possible spaces are standardised and flexible in use patterns	<input type="text"/>	<input type="text"/>	<input type="text"/>
H.07	The layout facilitates both security and supervision	<input type="text"/>	<input type="text"/>	<input type="text"/>

**FUNCTIONALITY: Access**

Section I focuses on the way the users of the building can come and go. It asks whether people can easily and efficiently get onto and off the site using a variety of means of transport and whether they can logically, easily and safely get into and out of the building.

ID	Description	Weighting	Score	Notes
I.01	There is good access from available public transport including any on-site roads	<input type="text"/>	<input type="text"/>	<input type="text"/>
I.02	There is adequate parking for visitors and staff cars with appropriate provision for disabled people	<input type="text"/>	<input type="text"/>	<input type="text"/>
I.03	The approach and access for ambulances is appropriately provided	<input type="text"/>	<input type="text"/>	<input type="text"/>
I.04	Goods and waste disposal vehicle circulation is good and segregated from public and staff access where appropriate	<input type="text"/>	<input type="text"/>	<input type="text"/>
I.05	Pedestrian access routes are obvious, pleasant and suitable for wheelchair users and people with other disabilities / impaired sight	<input type="text"/>	<input type="text"/>	<input type="text"/>
I.06	Outdoor spaces are provided with appropriate and safe lighting indicating paths, ramps and steps	<input type="text"/>	<input type="text"/>	<input type="text"/>

**FUNCTIONALITY: Space**

*Section J concentrates on the amount of space in the building in relation to its purpose. It asks if this space is well located and efficient and whether people can move around in it efficiently and with dignity.*

ID	Description	Weighting	Score	Notes
J.01	The design achieves appropriate space standards	<input type="text"/>	<input type="text"/>	<input type="text"/>
J.02	The ratio of usable space to the total area is good	<input type="text"/>	<input type="text"/>	<input type="text"/>
J.03	The circulation distances travelled by staff, patients and visitors are minimised by the layout	<input type="text"/>	<input type="text"/>	<input type="text"/>
J.04	Any necessary isolation and segregation of spaces is achieved	<input type="text"/>	<input type="text"/>	<input type="text"/>
J.05	The design makes appropriate provision for gender segregation	<input type="text"/>	<input type="text"/>	<input type="text"/>
J.06	There is adequate storage space	<input type="text"/>	<input type="text"/>	<input type="text"/>

# Guidance layer

## IMPACT

The four IMPACT sections deal with the extent to which the building creates a sense of place and contributes positively to the lives of those who use it and are its neighbours.

### A: CHARACTER AND INNOVATION

Section A deals with the overall feeling of the building. It asks whether the building has clarity of design intention, and whether this is appropriate to its purpose. A building that scores well under this heading is likely to lift the spirits and to be seen as an exemplar of good architecture of its kind.

#### A.01 There are clear ideas behind the design of the building

The design should embody a clear and coherent vision confidently communicating its function and aspirations through its physical elements.

#### A.02 The building is interesting to look at and move around in

The design should have sufficient variety to create interest both in terms of the overall form and massing externally and the spaces internally. This should be achieved without losing the clear vision (see A.01) or becoming confusing. Art should be incorporated into the building both internally and externally.

#### A.03 The building projects a caring and reassuring atmosphere

Primarily a healthcare building should be about the people who it is there to care for. A civic presence may be appropriate for a healthcare building but an institutional or corporate image is unlikely to be appropriate. The detail of the image will need to depend both on the type of building and the location.

#### A.04 The building appropriately expresses the values of the NHS

The design of the building overall should lift the spirits of those who work in it and are being treated in it as well as those who visit. It should communicate a strong positive image of the NHS.

#### A.05 The building is likely to influence future healthcare designs

The design should be of its time. It should use and express the current best practice in terms of form and technology. The building should clearly reflect new and appropriate models of healthcare provision. It should be a building that clients, developers and designers would wish to visit to learn from when working on future projects.

### B: FORM AND MATERIALS

Section B deals with the nature of the building in terms of its overall form and materials. It is primarily concerned with how the building presents itself to the outside world in terms of its appearance and organisation. Although it deals with the materials from which the building is constructed it is not concerned with these in a technical sense but rather the way they will appear and feel throughout the life of the building.

#### B.01 The building has a human scale and feels welcoming

However large or small the building it should appear welcoming to staff, patients and visitors. The scale should be appropriate to a caring image. Scale is the result not just of the size of the building but of the way certain features are expressed. Windows, floor to floor heights and, in particular, doors and entrances all contribute significantly to our sense of the scale of a building.

#### B.02 The building is well orientated on the site

The building should be designed in relation to its orientation on the site. In particular it should be designed to capture sunlight appropriately. It should shelter people approaching it from the prevailing winds and poor weather. The way the building is orientated may also contribute to the potential for views out of the building.

#### B.03 Entrances are obvious and logically positioned in relation to likely points of arrival on site

**Consider using double weighting.** This item may be particularly important where there are likely to be large numbers of visitors on a daily basis, where there may be more than one entrance or where there may be

several routes onto the site. The form of the building should invite approach and entry and make the places where the public enter apparent, even without signs. The design should respond to the major expected points of arrival. The entrances should be obvious from these angles.

**B.04 The external materials and detailing appear to be of high quality**

Materials should be chosen to enhance the building as a whole. The form and materials should be well detailed. The building should be one that will age gracefully rather than show unsightly staining or weathering.

**B.05 The external colours and textures seem appropriate and attractive**

Colours and textures should articulate and enrich the building's form and enhance its enjoyment. As with interior colour schemes what feels appropriate will to some extent depend on the type of building. However in the case of the exterior, colours and textures should also be chosen to relate positively to adjacent buildings and other aspects of the setting.

**C: STAFF AND PATIENT ENVIRONMENT**

Section C deals with how well an environment complies with best practice as indicated by the research evidence.

The statements correspond to the sections in ASPECT (A Staff Patient Environment Calibration Tool).

**C.01 The building respects the dignity of patients and allows for appropriate levels of privacy and company**

**Consider using double weighting.** This item may be particularly important for space where patients spend significant amounts of time, or where sensitive consultations, treatments or discussions may take place. Both company and privacy are highly valued by patients and staff and the building should facilitate both. The spaces where patients are likely to be for lengthy periods should provide places where they can have both visual and acoustic privacy. Patients should be able to have private conversations and to be alone if they wish. However, it should also be easy for patients to find company and to be with others. Patients' dignity should be respected by the design. When being treated or examined they must be shielded from the gaze of others and should not be overheard. Toilets and bathrooms should be nearby but located discretely without being in full view of others.

**C.02 There are good views inside and out of the building**

**Consider using double weighting.** This item may be particularly important for space where patients and/or

staff spend significant amounts of time. Rooms where patients or staff spend significant amounts of time should have windows which afford good, pleasant and interesting views. This might be particularly important where patients may be in bed for long periods or having to wait. Preferably patients should be able to see the ground and the sky. In cases where patients may be concerned or under stress the view should be calming. The restorative effects of views of nature are proven.

**C.03 Patients and staff have good easy access to outdoors**

Patients should be able to go outside easily and have access to well landscaped gardens. Both staff and patients should be able to see nature especially vegetation. This might be in the form of interior planting or external gardens. Restorative green spaces are shown to be helpful to those recovering from short-term treatments, to comfort visitors and provide respite for harried staff. Being able to walk or sit in such places can reduce blood pressure, relieve stress, encourage healing and restore hope.

**C.04 There are high levels both of comfort and control of comfort**

**Consider using double weighting.** This item may be particularly important for space where patients and/or staff spend significant amounts of time. Patients and staff should be comfortable. The temperature should be comfortable all year round and be capable of easy local control. Patients and staff should be able to exclude sunlight and darken spaces when patients wish to sleep. Artificial light should be easily controllable offering patterns suitable for day and night and for winter and summer. Patients and staff should be able to open windows and doors easily for fresh air. The places where staff work or patients spend time should be quiet and free from unwanted levels of background noise. Stress and heart rates have been proved to rise in noisy hospitals.

**C.05 The building is clearly understandable**

**Consider using double weighting.** This item may be particularly important for large or complex buildings or collections of buildings. The whole building should be easily understandable allowing for easy way-finding. The entrance should be obvious on arrival and the way out should also be clear. There should be a logical hierarchy of spaces in the building with varying scales appropriately indicating the public and private domain. It should be clear which are staff only areas and patients and visitors should easily be able to tell where to find a member of staff. Different parts of the building should have different characters in order to avoid an overall feeling of being nowhere. Distinctive landmarks, familiar artefacts from the past, self-contained looping paths are techniques for maximising legibility and orientation.

### **C.06 The interior of the building is attractive in appearance**

The interior should feel light and airy. Spaces where patients spend significant amounts of time should be made as homely as possible. There should be a stimulating variety of appropriate colours and textures. The interior should look tidy and well cared for as well as being clean. Ceilings should look interesting especially where patients are likely to be on beds or trolley for any length of time. Patients should be able to store and display their own personal items.

### **C.07 There are good bath /toilet and other facilities for patients**

Bath and toilet facilities are known to be important to patients. Ideally there should be a choice of bath or shower. These areas should have non-slip flooring, seats, handrails and shelves within easy reach so that patients are not 'disabled' by the design. Places for religious observance and live performances are also important. Having the option of a relative/friend being able to stay overnight very close by can make a big difference to patients. In their own spaces, patients should have access to a range of suitable furniture including comfortable seating and a table or desk. Patients who are able should have facilities to make drinks and snacks and vending machines should be conveniently available.

### **C.08 There are good facilities for staff including convenient places to work and relax without being on demand**

These facilities particularly impact on staff. It may be very important to be able to change into working clothes, to shower and to store clothes and belongings safely. Staff need to be able to get away from demand sometimes when working in order to concentrate, and also when taking a break. Places for this should be provided nearby. Staff who move around, should have easy access to IT. It is important to provide staff with basic banking and shopping facilities.

## **D: URBAN AND SOCIAL INTEGRATION**

Section D deals with the way the building relates to its surroundings. It asks whether the building plays a positive role in the neighbourhood whether that is urban, suburban or rural. A building that scores well under this section is likely to improve its neighbourhood rather than detract from it.

### **D.01 The height, volume and skyline of the building relate well to the surrounding environment**

**Consider using double weighting.** This item may be particularly important where the building is in either a tight urban environment or a very rural environment. The profile and skyline of the building as it is approached should fit in well with nearby buildings and landscape.

### **D.02 The building contributes positively to its locality**

Ideally the locality should be enhanced by the addition of the building. This might be through the way it opens up vistas, closes and contains urban space, or perhaps provides a landmark. The design should be sensitive to the setting, whether urban or rural, and sit comfortably within it. The building should feel as if it 'belongs' in this place. The spaces immediately outside the building should be pleasant. The relationship of interior and exterior space should be well thought out with appropriate connections between the levels of the building and landscape.

### **D.03 The hard and soft landscape around the building contribute positively to the locality**

The hard and soft landscape around the building should be appropriately therapeutic in their qualities. They must be designed to last and to minimise maintenance and be sustainable and not deteriorate. Ground materials and changes of levels should be safe and clear. Hard landscape should be provided where pedestrian routes are likely but this does not need to be in the form of straight edged paths, but should be composed into the landscape as a whole.

### **D.04 The building is sensitive to neighbours and passers-by**

**Consider using double weighting.** This item may be particularly important where the building or group of buildings are largely in the public domain for example in a town and many people may be passing by or through the site on a daily basis. The building should be a 'good neighbour'. Those approaching the building or passing by should feel safe as they do so. Neighbours may see the building every day and it should be designed to look attractive to them and not just for those who visit occasionally.

## BUILD QUALITY

The three BUILD QUALITY sections deal with the physical components of the building rather than the spaces. This is therefore what might be thought of as the more technical and engineering aspects of the building. It asks whether the building is soundly built, will be reliable and easy to operate, last well and is sustainable. It is also concerned with the actual process of construction and the extent to which any disruption caused is minimised.

## E: PERFORMANCE

Section E is concerned with the technical performance of the building during its lifetime. It asks whether the components of the building are of high quality and fit for their purpose. However we are not concerned here with how well the building functions in relation to the human use of it which belongs in another section.

### E.01 The building is easy to operate

The general organisation of the building makes the management of the facility as straightforward as possible.

### E.02 The building is easy to clean

The arrangement of the building and the materials make it easy to clean. Surfaces should have finishes that enable simple and quick methods of cleaning especially those that require to be clean for clinical reasons. Access to windows for cleaning both externally and internally should be as easy as possible given the nature of the building. In some cases this may require the provision of cradles or other specialised methods of access.

### E.03 The building has appropriately durable finishes

The materials both externally and internally should be able to last for their predicted lifespans. These lifespans should be as long as possible. Where for some reason this may be shorter than the predicted lifespan of the building overall then statement G.4 may be even more important.

### E.04 The building will weather and age well

The building should be able to age gracefully. The nature of the design, choice of materials and detailing of junctions all affect this together with the ease of maintenance and access as discussed in other Headings. Some materials such as stone often look better as they get older whereas some may quickly look dirty and uncared for. Junctions between materials (especially external horizontal ones) can cause staining unless carefully detailed.

## F: ENGINEERING

Section F is concerned with those parts of the building that are engineering systems as opposed to the main architectural features. It asks whether the engineering systems are of high quality and fit for their purpose, will be easy to operate and if they are efficient and sustainable.

### F.01 The engineering systems are well designed, flexible and effective

Engineering systems should be effective and flexible. Local controls should be provided for use by staff and patients. Engineering systems should operate quietly and respond rapidly. These systems should operate satisfactorily through all seasons of the year and be capable of adapting to reconfiguring of the building in future.

### F.02 The engineering systems exploit any benefits from standardisation and prefabrication where relevant

Standardisation is not good in its own right but may often be helpful not only during construction but in operating and maintaining a building. Unnecessary variation can be expensive. Again prefabrication is certainly not good in itself but may offer better value for money and may help to ensure easier and speedier construction which may cause less disruption on site and later maintenance.

### F.03 The engineering systems are energy efficient

The engineering systems should be designed to be efficient and economic in use and to meet or exceed all mandatory NHS targets.

### F.04 There are emergency backup systems that are designed to minimise disruption

The design should meet the emergency backup requirements of the brief and to meet any clinical requirements of the brief. In particular coverage should be considered for medical gases, emergency generators, batteries, nurse call systems, heating, theatre and other lighting, hot water, cold water storage, telephones. Clearly a judgment must be made as to which of these are vital depending on the kind of building.

### F.05 During construction disruption to essential services is minimised

The continuity of essential services in many healthcare buildings is vital. It may be necessary because of the design to modify or relocate some parts of existing essential services. Under these circumstances the potential for danger and serious harm may be considerable. Ideally existing services should be left untouched while they are in operation, however where some modifications or relocation is necessary the design should clearly show an assessment of risk and ways of counteracting all identified risks.

## G: CONSTRUCTION

Section G is concerned with the technical issues of actually constructing the building and with the performance of the main components. A building that scores well under this Heading is likely to be constructed as quickly and easily as possible under the circumstances of the site and to offer a robust and easily maintained solution.

### G.01 If phased planning and construction are necessary the various stages are well organised

**Consider using double weighting.** This item may be particularly important if it is necessary to phase the project either for financial reasons or to keep existing facilities operating while the construction is in progress. If the project needs to be built in phases this is made as easy as possible by the design. In gaining access to future phases, minimal disruption to any open facilities and neighbours should be minimised. Ideally each phase should be self-contained. Any future demolition should be clearly thought through. However it should be remembered that the construction phase is a very short one in the total lifespan of the building and it is therefore generally undesirable to allow considerations of phasing to dominate the design.

### G.02 Temporary construction is minimised

In order to satisfy the needs of phasing it may be necessary to construct some facilities which will then later be demolished or removed. This is obviously additional expenditure for which there is no long term benefit and yet further short-term potential disruption. This should be minimised. In particular the temporary provision of services may present risks to discontinuities in operation which may be expensive and hazardous. As with G.1 it is important to note that achieved quality of the long term permanent building is the most important consideration and on some occasions constructing temporary buildings may be the best way of achieving this.

### G.03 The impact of the construction process on continuing healthcare provision is minimised

Ideally the site works should be laid out so that contractor's areas are entirely separate from operational areas. This may not always be possible but overlaps should be avoided if possible and minimised where not. Crossing points where contractors' site traffic crosses routes used by other traffic and pedestrians should be minimised.

### G.04 The building can be readily maintained

Components in the construction should be designed to require minimal maintenance. The life-cycles of components should be known and thought through. Access to components that are most likely to need

maintenance or replacement is easiest. In particular access to items that may need attention is available without disrupting the lives of patients and staff.

### G.05 The construction is robust

Junctions between materials and components should be well detailed. Components and finishes should have sufficient strength and integrity for their functions and locations.

### G.06 The construction allows easy access to engineering systems for maintenance, replacement and expansion

The design of the construction should be integrated with the design of the engineering systems. Access to engineering components that are most likely to need maintenance or replacement is easiest. In particular access to items which may need attention is available without disrupting the lives of patients and staff. Some items require more attention than others and disruption can be minimised by designing access routes, hatches and removal panels etc to enable this. (e.g. cisterns in en-suite bathrooms may be maintained without accessing the bedroom)

### G.07 The construction exploits any benefits from standardisation and prefabrication where relevant

Standardisation is not good in its own right but may often be helpful not only during construction but in operating and maintaining a building. Unnecessary variation can be expensive. Again prefabrication is certainly not good in itself but may offer better value for money and may help to ensure easier and speedier construction which may cause less disruption on site and later maintenance.

## FUNCTIONALITY

The three FUNCTIONALITY sections deal with all those issues to do with the primary purpose or function of the building. It deals with how well the building serves these primary purposes and the extent to which it facilitates or inhibits the activities of the people who carry out the functions inside and around the building.

### H: USE

Section H 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 economically and easily in a way that relates well to the policies and objective of the Trust. A high scoring building is also likely to have some flexibility in use.

#### H.01 The prime functional requirements of the brief are satisfied

The whole design must meet the needs of the core purposes which it serves. Clearly this is one of the most central and important considerations.

#### H.02 The design facilitates the care model of the Trust

The design should express and facilitate the healthcare philosophy of the Trust. Design inevitably involves trade-offs, so the relative values in terms of efficiency of healthcare delivery that are in the care model should be reflected in the design.

#### H.03 Overall the building is capable of handling the projected throughput

The sizes of spaces, circulation and access must be adequate to meet the demands made at peak times and feel comfortable throughout the operating period.

#### H.04 Workflows and logistics are arranged optimally

All the appropriate adjacencies for human circulation and the flow of facilities and services are arranged in order to minimise distances travelled and lines crossed.

#### H.05 The building is sufficiently adaptable to respond to change and to enable expansion

**Consider using double weighting.** This item may be particularly important where forecasts already suggest future expansion that is not funded as part of the current project. The design should be adaptable where possible. The building is likely to last longer than the current models of care and patterns of treatment. Where changes or expansion can be predicted the design should show how it can be adapted to meet these.

Therapeutic, technological, organisational innovations will take place and the building should be able to accommodate these without losing its coherence.

#### H.06 Where possible spaces are standardised and flexible in use patterns

Some spaces are so technically demanding that they must be very tightly designed on a functional basis. However it is highly likely that throughout the life of the building the pattern of use will change. Where possible similar kinds of spaces should be the same size and shape and be capable of changing their use as needs change. Over precise design can lead to an inflexibility that in the life of the building can cost considerably more than some small addition of initial floor area to enable future changes. It can often be the case that relatively small additions of floor space can be the most economical way of creating valuable flexibility.

#### H.7 The layout facilitates both security and supervision

**Consider using double weighting.** This item may be particularly important if the site is in an area with historically high crime rates. The layout should include suitable supervision and control points. Entrances and departments should be designed to enable ready supervision and security. The layout should maximise passive supervision and overlooking so that all parts of the building internally and the site externally feel supervised and safe.

### I: ACCESS

Section I focuses on the way the users of the building can come and go. It asks whether people can easily and efficiently get onto and off the site using a variety of means of transport and whether they can logically, easily and safely get into and out of the building.

#### I.01 There is good access from available public transport including any on-site roads

Access requirements for staff, patients and visitors arriving at the building using public transport should be thought through. Any on-site roads should be adequate and sensitively designed. Road widths and turning circles should be safe and convenient. Consideration should be given to bringing public transport onto the site where possible and appropriate. Pedestrian routes from public transport points should be clear, safe and sensitively designed. Cars and other vehicles should not dominate the external public areas.

#### I.02 There is adequate parking for visitors and staff cars with appropriate provision for disabled people.

In particular the design should accommodate the forecast demand in terms of staff, patients and visitors' cars. Consideration should be given to the extra

demand at major staff shift handover periods. Any points of access to the existing road system should be able to cope with peak demand. Drop off points for less able people should be provided appropriately near entrances.

**I.03 The approach and access for ambulances is appropriately provided**

Adequate segregation and demarcation of ambulance access and drop off points should be clear. Alternative routes should be considered for emergencies.

**I.04 Goods and waste disposal vehicle circulation is good and segregated from public and staff access where appropriate.**

Particular attention should be given to ensure unsightly, large or noisy vehicles are kept away from pedestrian areas.

**I.05 Pedestrian access routes are obvious, pleasant and suitable for wheelchair users and people with other disabilities / impaired sight**

The major and minor routes should be obvious with continuity of line and materials. They should be well signposted. They should be safe from vehicles and with safe crossings where they cross roads or other vehicular access. They should be free from obstacles and changes of levels. In particular isolated steps should be avoided and appropriately shallow ramps provided where changes of level are necessary.

**I.06 Outdoor spaces are provided with appropriate and safe lighting indicating paths, ramps and steps**

They should be pleasantly landscaped and well lit at night. Safe lighting is of course a requirement of Health and Safety regulations. Compliance with legislation is not generally the main purpose of this AEDET evaluation.

**I.07 The fire planning strategy allows for ready access and egress**

The fire planning strategy should be integrated with the design in order to allow easy access and egress in emergency as well as in normal use. The design must comply with Firecode and have provision for safe horizontal escape routes. These must be easy, direct, free and unhindered access for fire fighting appliances to the whole of the building perimeter. The same comments about compliance with legislation apply as those found in I.06.

**J: SPACE**

Section J concentrates on the amount of space in the building in relation to its purpose. It asks if this space is well located and efficient and whether people can move around in it efficiently and with dignity.

**J.01 The design achieves appropriate space standards**

In addition to the technical spaces, all general spaces must be adequate to meet normal demand comfortably and peak demand at least adequately. In particular entrance areas should be uncluttered and spacious as must all circulation and social spaces. Provision for special areas for children should be considered. Space for external franchises and other add-ons should be thought about. The design must clearly follow and at least satisfy all the minimum requirements of the relevant HBNs and HTNs. A good design strategy will have listed all the relevant specific notes and shown how the design meets these as opposed to making general statements.

**J.02 The ratio of usable space to the total area is good**

The net to gross ratios should be calculated and show high figures. Where possible spaces should be capable of being shared to maximise utilisation. The design strategy and the brief should see space as a resource not personal territory. Dual use of circulation space should be exploited where this can be effective. For example to create informal social and gathering spaces. The overall proportion of space devoted exclusively to circulation should be kept to a minimum.

**J.03 The circulation distances travelled by staff, patients and visitors are minimised by the layout**

**Consider using double weighting.** This item may be particularly important where emergency treatments are common. It is also likely to be particularly important for those groups of staff who need to move around as a normal part of their job. Clinical adjacencies as determined by the care model are minimised. Patients and visitors are faced with journeys that are as logical and short as possible.

**J.04 Any necessary isolation and segregation of spaces is achieved**

Any required clinical isolation should be achieved. In addition inherently noisy areas should be kept away from quiet ones. Similarly inherently messy or unpleasant visual areas should be isolated. Inappropriate adjacencies that might offend sensibilities should be avoided. The design should naturally isolate and screen areas, which patients and visitors may not wish to see.

**J.05 The design makes appropriate provision for gender segregation**

**Consider using double weighting.** This item may be particularly important where there are in-patients. The care model should be clear about the location and extent of desired gender segregation. The design should reflect and provide this. Areas where the boundaries between genders may need to change in use should be clearly identified and solutions for providing this made apparent.

**J.06 There is adequate storage space**

It is very easy to underestimate the amount of storage space required. This frequently leads to other major failures in the use of buildings. Common results are to see materials stored in public areas causing restrictions, and giving a sense of clutter. In particular storage needs to be adjacent to places where it will be needed to ensure items are appropriately stored in actual use. The design should avoid creating storage spaces which can easily be eliminated. Storage may be required at several stages in the various supply/use/disposal systems.



# Evidence layer

---

The evidence layer is currently available for download from the NHS Estates Knowledge & Information Portal at:

<http://knowledge.nhsestates.gov.uk>