

Design management systems

Part 4. Guide to managing design in construction

Committees responsible for this British Standard

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- Association of Consulting Engineers
- Association of Project Managers
- BEAMA Ltd.
- British Photographic Association
- British Standards Society
- Cambridge University
- Chartered Society of Designers
- Consumers' Association
- Defence Manufacturers' Association
- Design Council
- Department of Trade and Industry (Enterprise Initiative Division)
- Electricity Association
- Federation of Small Businesses
- Health and Safety Executive
- Institute of Quality Assurance
- Institution of Civil Engineers
- Institution of Electrical Engineers
- Institution of Engineering Designers
- Institution of Mechanical Engineers
- Ministry of Defence
- Royal Institute of British Architects
- University of Leeds
- University of Westminster
- Coopted members

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Foreword

In October 1993, BS 7000 *Guide to managing product design* was renumbered BS 7000 : Part 1 to accommodate further Parts. It is intended that BS 7000 *Design management systems*, will comprise initially the following Parts.

- Part 1: *Guide to managing product design*
- Part 2: *Guide to managing the design of manufactured products¹⁾*
- Part 3: *Guide to managing service design*
- Part 4: *Guide to managing design in construction*
- Part 10: *Glossary of terms used in design management*

Other parts may be added.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

¹⁾In preparation.

Introduction

This Part of BS 7000 gives guidance on managing the design process within the construction industry. This design process should enable sufficient information to be produced to satisfy client requirements.

The client may be a user, owner occupier, investor or contractor.

A basic design process should be followed irrespective of the method of design or construction procurement, although the method selected will affect the divisions of responsibility and the form of communication network required.

Three aspects of design procurement are common to all methods of procurement as follows.

- 1) A clientele having an ongoing need for construction work involving an element of design; this leads to the setting up of a project management structure within which design management operates.
- 2) A design capability, established by the construction industry, that is distributed among many organizations in the form of managed design facilities.
- 3) The design content of a project that has been created by a client and defined in an agreed brief.

A design team is selected from the available design facilities that has the ability to satisfy both the technical and design management needs of the project.

The clientele and the design capability are permanent features of the construction industry,

whereas the execution of a particular design project is transitory. The relationship between the client and the construction industry is shown in figure 1.

These three aspects of design procurement are covered in sections **2**, **3** and **4** respectively.

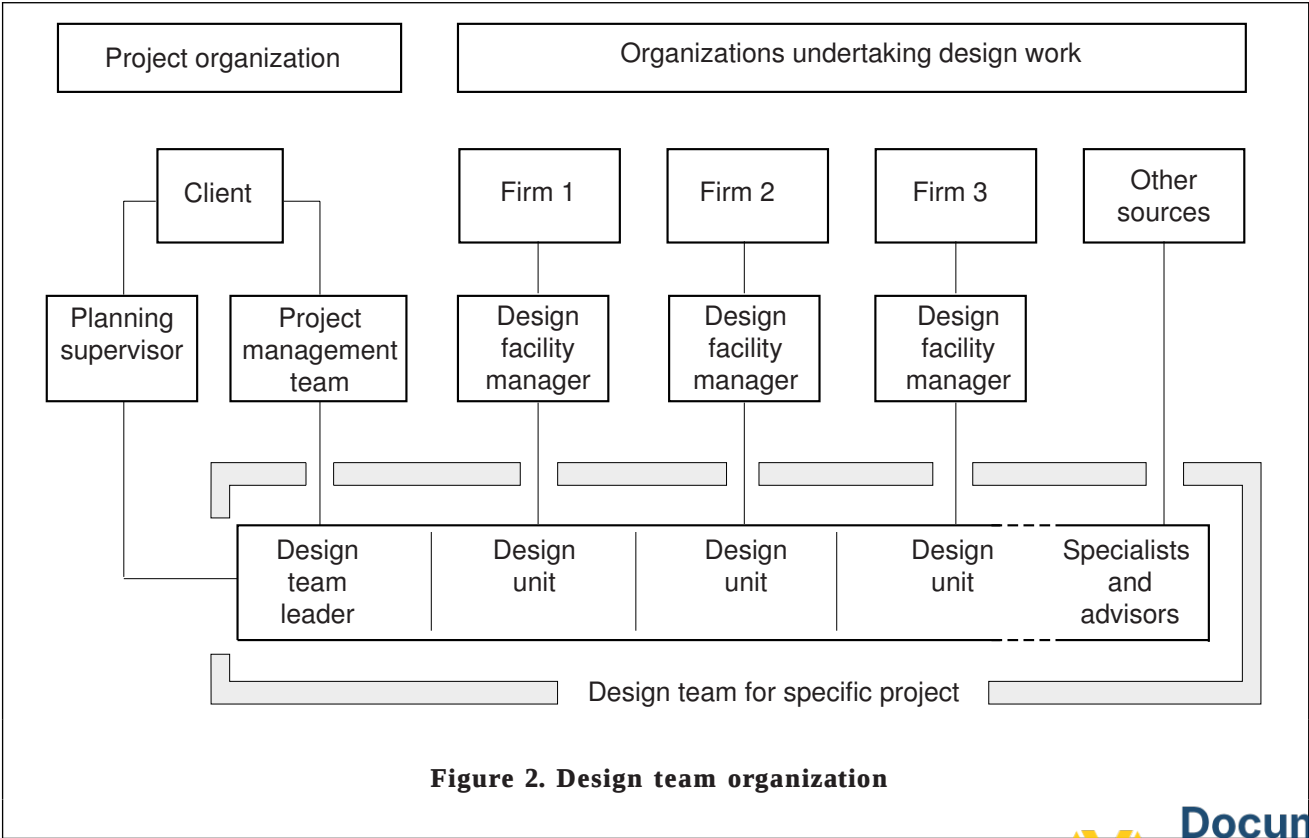
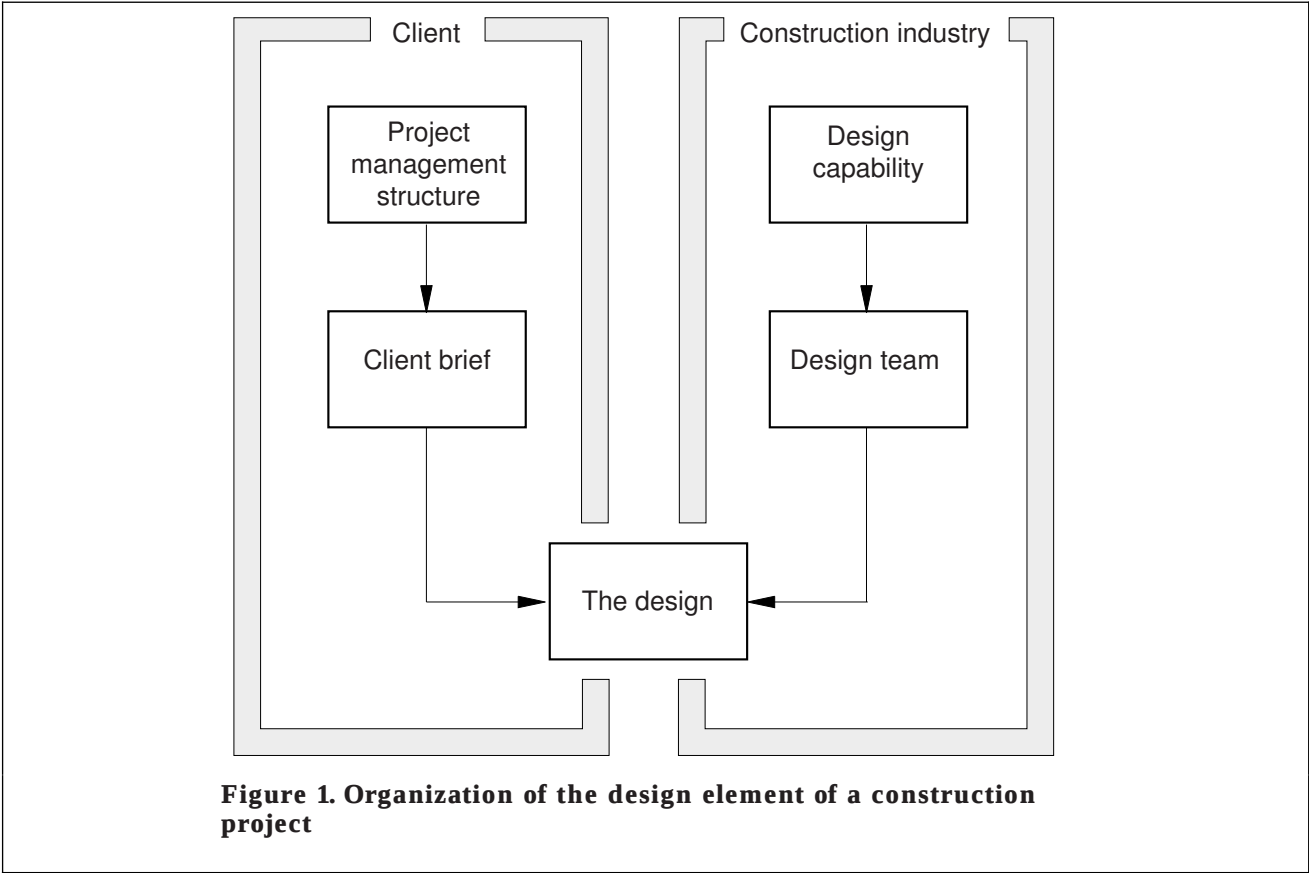
An hierarchy of management functional titles has been defined in **1.3**. These titles have been chosen as representing the functions identified in this standard and may not correspond with terms used for equivalent functions in any particular organization.

The relationship between the principal management functions, shown in figure 2, is as follows.

- a) The design team leader is part of the project management structure and provides the primary link between project management and design management.
- b) The design team leader is responsible for co-ordinating the work of a design team that consists of one or more design units with the capacity to cover the scope of the project. The composition of this design team may vary during the project and may be supplemented by specialists.
- c) Each design unit should be formed from resources under the control of the design facility manager. A design unit should be supervised by a design unit leader.

For large projects such divisions of managerial responsibility may be apparent, but as projects reduce in size the distribution of responsibilities and functions simplifies to the point where all project and design management may be the responsibility of one person. Such simplification should not be allowed to obscure the range of management functions being undertaken and the managerial skills involved.

NOTE. The Construction (Design and Management) Regulations : 1994 [1] require the client to appoint a planning supervisor. These regulations place statutory duties on clients, designers and constructors to plan, co-ordinate and manage health and safety aspects throughout all stages of the construction project.



Section 1. General

1.1 Scope

This Part of BS 7000 gives guidance on management of the construction design process at all levels, for all organizations and for all types of construction projects. It is intended for those who work in, or interact with, the construction industry. Where general management principles are given, they may be adapted to suit any size of design organization or construction project.

The guidance given covers the management of design activities throughout the life-cycle of a construction project, from the point when the client initiates a project. It does not include any actions taken by the client in reaching a decision to initiate the project, or the factors considered by the client when selecting the most appropriate form of construction procurement.

The management process described in this Part of BS 7000 relates exclusively to purpose-built constructions, equipment and components and is intended to relate to catalogue items and services only in regard to their selection or adaptation to suit a particular purpose.

NOTE 1. Guidance on the design of manufactured products and services is given in BS 7000 : Part 2 and BS 7000 : Part 3 respectively.

NOTE 2. This Part of BS 7000 complements BS EN ISO 9001 : 1994, to which reference should be made.

1.2 References

1.2.1 Normative references

This Part of BS 7000 incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to, or revisions of the cited publication apply to this Part of BS 7000 only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

1.2.2 Informative references

This Part of BS 7000 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

1.3 Definitions

For the purposes of this Part of BS 7000, the definitions given in BS 7000 : Part 10 : 1995 and BS 4778 : 1991 apply together with the following.

1.3.1 acceptance criteria

The factors used to determine whether or not a design meets the stated and agreed requirements.

1.3.2 initial brief

A preliminary statement of the client's requirements.

1.3.3 project brief

A statement covering technical and managerial intentions derived from, and meeting the requirements of, the initial brief.

1.3.4 design brief (in construction)

A document, derived from and compatible with the project brief, that defines all design requirements. It may be sub-divided to identify the requirements relevant to each design unit and specialist.

1.3.5 consolidated brief

The brief resulting from the brief development process that will be used as the basis for detailed design.

1.3.6 design facility

The resources, equipment, procedures, management infrastructure and accommodation providing the capability to undertake design commissions.

1.3.7 design package

The documentation and associated material compiled in the course of a design process.

NOTE. The design package should be assembled and delivered in a form suitable for a defined purpose or identified recipient.

1.3.8 design process

All the activities necessary to convert design input into design output.

1.3.9 design team

The total capability required to undertake a design, comprising an appropriate mix of design units and specialists under the direction of a design team leader.

1.3.10 design team leader

A person responsible for overseeing and co-ordinating the work of the design team.

1.3.11 design unit

An individual or group of designers from one design facility appointed to fulfil some part, or the whole, of the design requirements of a particular project.

1.3.12 design unit leader

A person responsible for leading a design unit in producing such elements of design as are the responsibility of that unit.

1.3.13 planning supervisor

As defined in Clause 2 - (1) of The Construction (Design and Management) Regulations 1994 [1].

1.3.14 project

A unique process consisting of a set of co-ordinated and controlled activities, with start and finish dates, undertaken to supply a product conforming to specific requirements within the constraints of time, cost and resources.

NOTE. Within the construction industry a project encompasses the totality of the design and construction process.

1.3.15 project plan

A document setting out the specific practices, resources and sequences of activities required to meet the project objectives.

1.3.16 project team

A group responsible for executing a project, including both design and construction personnel.