

PD ISO/TR 11219:2012



BSI Standards Publication

Information and documentation — Qualitative conditions and basic statistics for library buildings — Space, function and design

bsi.

...making excellence a habit.
AVA Documents™
Document Sharing Hub

National foreword

This Published Document is the UK implementation of ISO/TR 11219:2012.

The UK participation in its preparation was entrusted by Technical Committee IDT/2, Information and documentation, to Subcommittee IDT/2/15, Library and publishing statistics.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2012

Published by BSI Standards Limited 2012

ISBN 978 0 580 60876 6

ICS 01.140.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 May 2012.

Amendments issued since publication

Amd. No.	Date	Text affected
----------	------	---------------

TECHNICAL REPORT

**ISO/TR
11219**

First edition
2012-05-01

Information and documentation — Qualitative conditions and basic statistics for library buildings — Space, function and design

*Information et documentation — Conditions qualitatives et statistiques
fondamentales pour bâtiments de bibliothèques — Espaces, fonctions
et conception*



Reference number
ISO/TR 11219:2012(E)

AVA Documents
Document Sharing Hub
© ISO 2012



COPYRIGHT PROTECTED DOCUMENT

© ISO 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	vi
Introduction.....	vii
1 Scope	1
2 Terms and definitions	1
3 Planning library buildings	13
3.1 First steps in planning	13
3.2 Factors affecting library space requirements	16
3.3 Special service areas	19
3.4 Joint facilities.....	27
4 Usable areas	28
4.1 General	28
4.2 Space for user places	29
4.3 Space for events and exhibitions	34
4.4 Space for lending	35
4.5 Space for reference and information.....	37
4.6 Space for other usage areas	38
4.7 Space for collections	40
4.8 Space for library staff.....	66
4.9 Other spaces for library management and technical services	69
5 Technical building issues.....	76
5.1 Storage conditions	76
5.2 Load assumption.....	81
5.3 Conveyor systems.....	85
5.4 Security and safety systems	88
5.5 Light and lighting	91
5.6 Acoustic conditions	98
5.7 Floor construction and covering	102
5.8 Wiring.....	110
5.9 Sign system	114
6 Outdoor space	116
6.1 General	116
6.2 Access	116
6.3 Open spaces	117
7 Barrier free construction	118
7.1 General	118
7.2 Measures for barrier free design	118
7.3 Sign system	119
7.4 Overview.....	119
8 Sustainable building	120
8.1 General	120
8.2 Energy efficiency.....	120
8.3 Conservation of natural resources.....	121
Annex A (informative) Reconstruction and reorganisation of old buildings.....	122
Annex B (informative) List of functional areas and rooms.....	125
Bibliography.....	129

Figures

Figure 1 — Access to shelving sections	51
--	----

Tables

Table 1 — Shelf depth recommended for types of media and types of shelving	42
Table 2 — Shelf depth for special media furniture	42
Table 3 — Recommended length of shelving ranges	43
Table 4 — Shelf frame height and number of shelf boards on top of each other for books	44
Table 5 — Number of shelf boards on top of each other for non-book media	45
Table 6 — Shelf capacity for books (standing, spine-out)	46
Table 7 — Shelf capacity for unbound periodicals and newspapers	47
Table 8 — Required compartments for the yearly issues of one periodical or newspaper	47
Table 9 — Shelf capacity for non-book media	48
Table 10 — Shelf capacity of cabinets for non-book media	48
Table 11 — Stack aisle width and axis centre distance for shelves of 0,25 m to 0,35 m depth in different functional areas	49
Table 12 — Space needed for access to shelving sections	53
Table 13 — Required space for books and bound periodicals with standard conditions	57
Table 14 — Required space for one year of one unbound periodical title with standard conditions	57
Table 15 — Required space for one newspaper title (issues of 1 month) with standard conditions	58
Table 16 — Required space for printed music documents with standard conditions	58
Table 17 — Required space for maps and plans (folded) with standard conditions	59
Table 18 — Required space for maps and plans in cabinets for A0 maps with standard conditions	59
Table 19 — Required space for files with standard conditions	60
Table 20 — Required space for phonograph records with standard conditions	61
Table 21 — Required space for CDs and CD-ROMs with standard conditions	62
Table 22 — Required space for audio cassettes with standard conditions	63
Table 23 — Required space for DVDs with standard conditions	64
Table 24 — Required space for video cassettes with standard conditions	65
Table 25 — Space requirements for staff	69

Table 26 — Overview of live load (rounded)	85
Table 27 — Fire extinguishing systems	91
Table 28 — Recommended lighting levels for specified areas	92
Table 29 — Advantages and disadvantages of the light sources most used in libraries	97
Table 30 — Recommended acoustic comfort levels for functional areas	100
Table 31 — Types of flooring	104

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 11219 was prepared by Technical Committee ISO/TC 46, *Information and documentation*, Subcommittee SC 8, *Quality — Statistics and performance evaluation*.

Introduction

This Technical Report provides guidance for the planning of library buildings by identifying requirements of space and technical equipment. It supports decision making for librarians, architects and financing institutions.

This Technical Report considers planning, both for new buildings and for the reconstruction of existing library buildings or the conversion of other buildings for library use.

In order to plan new or reconstructed buildings, libraries need reliable data that can help them to calculate their space requirements and to define the respective technical building equipment for housing the collections, as well as for offering adequate user areas and background areas for the internal library operations. Such data are not yet available in International Standards.

This Technical Report includes data and specifications for all types of libraries, but especially for academic and public libraries. Its main topics are space requirements for:

- user areas (user places, reference and information services, lending services, user training, recreation and communication areas, meeting and exhibition areas);
- collection storage areas (including non-book materials);
- library operations (media processing, bindery, computing and management).

This Technical Report also covers technical aspects like security and safety systems, floor loading, transport systems, acoustic conditions, lighting systems and wiring and the issues of barrier-free construction and sustainability.

Annex A gives an overview of issues to consider when planning to reconstruct or reorganize existing buildings for library purposes. Annex B provides a list of functional areas and rooms to be used when checking the completeness of the plans.

Several clauses of this Technical Report are partly based on References [13] and [18].

Information and documentation — Qualitative conditions and basic statistics for library buildings — Space, function and design

1 Scope

This Technical Report specifies data for the planning of library buildings. It also provides guidance on the selection of technical building equipment for the different functional areas of libraries.

This Technical Report is applicable to all types of libraries in all countries, but especially to academic and public libraries.

It does not include details on national, regional or local regulations that can affect the planning of library buildings.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

academic library

library whose primary function is to cover the information needs of learning and research

Note 1 to entry: This includes libraries of institutions of higher education and general research libraries.

2.2

accession order

arrangement of books or other documents on shelves in the chronological and numerical order of their addition to a specific category or class, as opposed to an arrangement based entirely on a classification system

Note 1 to entry: Antonym: classified shelving.

2.3

area for events

floor space for events and exhibitions with special technical requirements as to acoustics, lighting, darkening, climate and catering

2.4

art lending library

department of a public library with collections of art books, works of art (e.g. pictures, sculptures) and reproductions, commissioned to lend those books and objects for a specified time period to users

2.5

audiovisual media

documents in which sound and/or pictures are prominent, and which require the use of special equipment to be viewed and/or heard

Note 1 to entry: This includes audio documents, pictures and films on different physical carriers.

Note 2 to entry: Adapted from ISO 2789:2006.

2.6

automated storage

ASRS

high-density storage facility with retrieving function of library materials, generally called Automated Storage and Retrieval System (ASRS)

Note 1 to entry: Advantages of this kind of storage are the efficient use of space and the speed of retrieving and returning of materials.

2.7

axis centre distance

distance between centres of repeated or similar objects

Note 1 to entry: Such objects can be constructional elements or furniture in a row. For shelves, the axis centre distance is the distance from centre post to centre post of two parallel single-sided (single-faced) or double-sided (double-faced) shelves.

2.8

barrier-free access

universal access

accessibility of the library to users with physical requirements other than those of the average user, e.g. as to the height of shelves, tables and equipment or as to working places for visually impaired persons

2.9

bindery

book binding studio

in-house workshop in a library that performs binding and repair of physical media, especially the daily work such as repairs, binding in urgent cases, production of brochures for the institution's own publications, etc.

2.10

book drop

slot, chute, bin or box with a collection container to which materials borrowed from a library can be returned, especially during hours when the library is closed

Note 1 to entry: Book drops can be free-standing (usually outside the walls of the library) or built into the circulation desk or an exterior wall.

Note 2 to entry: Book drops are often linked to the library system and/or a transport system.

2.11

book transport system

conveyor transporting media from closed stacks to the check-out or user area and back again after check-in

2.12

carrel

work space for information users in the reader area which is shielded against its surroundings but not completely closed

Note 1 to entry: In a carrel, working papers can be kept for continuous research.

Note 2 to entry: Adapted from ISO 5127:2001.

2.13

cartographic document map

conventional representation, on a reduced scale, of concrete or abstract phenomena which can be localized in space and time

Note 1 to entry: This includes documents such as two- and three-dimensional maps, globes, plans, topographic models, tactile maps and aerial representations, but excludes atlases and any other cartographic documents in codex, micro, audiovisual and electronic form.

Note 2 to entry: Adapted from ISO 2789:2006.

2.14

catalogue

ordered list or bibliographic retrieval system allowing access to data and addresses of documents in one or several collections

Note 1 to entry: Catalogues are for the most part offered in the form of online catalogues accessible via terminal or workstation. Older forms are catalogues in book form on shelves and card catalogues sorted in drawers of catalogue cabinets.

Note 2 to entry: Adapted from ISO 5127:2001.

2.15

children's library

public library area offering special collections and services for children up to 13 years

2.16

circulation space

space needed for access to the rooms, in-house traffic and evacuation of the building in case of need

Note to entry 1: This includes, for example, floor space of corridors, stairway space, lift shafts and traffic area for vehicles.

Note to entry 2: Movement areas in rooms that belong to the usable area are excluded.

[DIN 277-1:2005-02]

2.17

citizens' service

service point of the local administration offering easy access for citizens to administrative services (e.g. renewing passports or driving licences, paying dog licence fees)

Note 1 to entry: The service point can be located in a library.

2.18

classified shelving

storage of media in the order of a subject classification

Note 1 to entry: Classified shelving is usually applied in open-access stacks.

Note 2 to entry: Antonym: **accession order** (2.2).

2.19

closed stacks

stacks that are not accessible to users

Note 1 to entry: Antonym: **open stacks** (2.58).

2.20

compact shelving

shelves or cupboards which are movable on rails with manual or electric steerage and which can be moved close to each other, thus maximizing the storage capacity of a given space

2.21

conservation

intervention techniques applied to prevent, arrest or delay deterioration

[ISO 5127:2001, definition 6.1.03]

2.22

cross-aisle

corridor or passageway that intersects at a 90-degree angle the shelving ranges and stack aisles in the stack area of a library, allowing staff and users to move from one range to another without walking to the end of the range

2.23

delivery entrance

entrance for the receipt or dispatch of library materials or other goods or for the pick-up of waste materials

2.24

desk sharing

policy for minimizing the floor space required for office rooms by which two or more persons share a desk and equipment, especially useful when allocating background space for staff mainly working in contact with users

2.25

double-faced shelf

double-sided shelf

shelving unit with shelf boards on both long sides

2.26

ductwork

system of ducts for ventilation or the conveyance of liquids, gases, electricity, etc.

2.27

electronic collection

all resources in electronic form in the library collection

Note 1 to entry: The electronic collection includes databases, electronic serials and digital documents such as eBooks, electronic patents and networked audiovisual documents.

Note 2 to entry: Adapted from ISO 2789:2006.

2.28

exhibition

time-limited display of objects, organized or co-organized by the library

Note 1 to entry: Exhibitions can take place inside or outside the library premises.

2.29

file

dossier

organized unit of documents grouped together either for current use by the creator or in the process of archival arrangement, because they relate to the same subject, activity or transaction

Note 1 to entry: Adapted from ISO 5127:2001.

2.30

frontal display

face-out

method of displaying media face forward, especially in public libraries, which requires considerably more shelf area

Note 1 to entry: Antonym: **spine-out** (2.87).

2.31

functional space

part of the gross floor area that houses the central operational equipment of a building

Note 1 to entry: This includes, for instance, sewage disposal, heating, conveyor technique.

2.32

gross floor area

sum of all floor areas of all levels of a building

Note 1 to entry: This includes the usable area, circulation space, functional space and space occupied by the constructional elements of the building (pillars, walls, etc.).

2.33

group study place

workplace for joint studying by several users

Note 1 to entry: These places are usually constructed in a way that their use does not materially affect the other users.

2.34

inside width

distance between the inside margins of an object, without taking account of the marginal parts themselves

2.35

interactive spaces

spaces in buildings where ICT (Information and Communication Technology) is integrated in the furniture (e.g. tables) and in the walls

2.36

interlibrary lending

loan of a document in its physical form or delivery of a document, or part of it, in copied form, from one library to another which is not under the same administration

Note 1 to entry: Adapted from ISO 2789:2006.

2.37

IT-workplace

workplace equipped with information technology (personal computer, terminal or multimedia equipment, etc.)

2.38

kinderbox

special furniture for presenting large books (picture books, comics) or other media in frontal display

2.39

learning centre

information commons

library service area specially dedicated to learning purposes

Note 1 to entry: Usually, a learning centre integrates library and computer application services, in most cases with a wireless network, equipment for multimedia use and support services for users by librarians and/or IT specialists.

Note 2 to entry: A learning centre can be a separate facility, inside or outside the library, or an integral part of the library.

2.40

lending area

library service area for supplying and returning books and other media for loan

2.41

lending library

circulating library

library that offers collections for loan outside the library

2.42

library

organization, or part of an organization, the main aim of which is to facilitate the use of such information resources, services and facilities as are required to meet the informational, research, educational, cultural or recreational needs of its users

Note 1 to entry: The supply of the required information resources can be accomplished by building and maintaining a collection and/or by organizing access to information resources.

Note 2 to entry: These are the basic requirements for a library and do not exclude any additional resources and services incidental to its main purpose.

Note 3 to entry: Adapted from ISO 2789:2006.

2.43

linear metre

measure of shelf space for the net space on a shelf, without supporting construction

2.44

live load

variable or movable load of a building unit

Note 1 to entry: This includes persons, equipment (e.g. shelving or compact shelving, inclusive of books and other media), light partition panels without load, machines and snow.

2.45

loading bay

area at the side of a building where goods are loaded on and off delivery vehicles

2.46

loading ramp

inclined plane between two levels for the passage of delivery vehicles

2.47

loan desk

circulation desk

service point at which media are checked in and out of a library, usually a long counter located near the entrance or exit with one or more working places for staff

2.48

lounge

meeting and waiting space for users, offering relaxed seating

Note 1 to entry: See also **staff lounge** (2.91).

2.49

main aisle

stack aisle that serves as access to a larger unit or shelving section, in a room

Note 1 to entry: A stack aisle does not necessarily meet the requirements for a traffic route.

2.50

media centre

library service area providing audiovisual and multimedia documents, equipment and services, staffed to assist users in using these collections

2.51

microform

photographic document requiring magnification when used

Note 1 to entry: Microforms are to be used with adequate reading devices. Special reader printers allow re-magnifying of minimized texts and printing on paper.

Note 2 to entry: Adapted from ISO 5127:2001.

2.52

movement area

free area between storage areas or walls

Note 1 to entry: This includes the space which is necessary for usage or operation in front of equipment and functional areas. Additionally, it includes space for doors that open into the room. Mandatory safety clearance is not included.

2.53

multimedia document

document combining different information media, text, graphics, photos, video, audio for interactive use, in digital format

Note 1 to entry: Multimedia documents can be available on physical carriers such as CDs (compact disks) or DVDs (digital versatile disks) or as networked publications.

Note 2 to entry: Adapted from ISO 2789:2006.

2.54

multimedia workplace

workstation with special hardware and software for using multimedia documents

Note 1 to entry: The characteristics of such workplaces are high capacity computers and large screens, as a result of the contents, presentation and combination of electronic media (e.g. moving pictures simultaneously with text and audio). Where appropriate, these places can also be equipped with headphones.

2.55

multi-touch technology

type of interface allowing interactive data processing by touch or motion, equipped either with a touch-sensitive surface and/or with motion sensors.

Note 1 to entry: Multi-touch interfaces can be small, as used in smartphones, or large, as used in multi-touch collaboration walls.

2.56

music library

department of a public library with collections of materials on music and musicians, including sheet music, recorded music (CDs, audiocassettes, records, etc.), discographies and music reference material, offering lending services and user places for listening to music

2.57

non-book material

library materials that have physical form but are not bound in codex form like a book, e.g. autographs, maps, plans, microforms, audiovisual documents, games or pictures

Note 1 to entry: Electronic media are excluded.

Note 2 to entry: Some of these media need special furniture for presentation or special equipment for using them, e.g. tables for consulting maps, a reader printer, etc.

2.58

open stacks

stacks that are accessible to users

Note 1 to entry: Antonym: **closed stacks** (2.19).

2.59

pay machine

machine for the paying of fees and fines that should, if possible, be linked with the automated library system

2.60

periodical stand

piece of display furniture, often with sloping shelves, used in libraries to display current issues of periodicals face out

Note 1 to entry: This is not as compact as conventional shelving but it is more accessible to users for browsing.

Note 2 to entry: The shelves or cupboards usually have separate compartments for each periodical; the cases can be hinged to allow a limited number of back issues to be stored on a flat shelf behind it.

2.61

plan cabinet

plan case

cabinet for flat storage, where the items are stored horizontally

Note 1 to entry: Plan cabinets are usually metallic.

2.62

population to be served

number of individuals for whom the library is set up to provide its services and materials

Note 1 to entry: For public libraries, this will normally be the population of the legal service area (authority); for libraries of an institution of higher education, this will normally be the total of academic and professional staff plus students.

Note 2 to entry: Adapted from ISO 11620:2008.

2.63

presentation area

user area that serves for presenting media in a user-friendly way, e.g. by frontal display

Note 1 to entry: This type of media presentation requires more floor space than conventional methods.

2.64

preservation

all measures taken, including financial and strategic decisions, to maintain the integrity and extend the life of documents or collections

[ISO 5127:2001, definition 6.1.01]

2.65

printed music document

document, the essential content of which is a representation of music, normally by means of notes

Note 1 to entry: Printed music documents can be in sheet or codex form.

[ISO 2789:2006, definition 3.2.35]

2.66

public library

library that offers collections and services for the general public

Note 1 to entry: Public libraries serve the information needs of the whole population of a local or regional community, with emphasis on both formal and individual education, literacy, life-long learning, creative development, cultural and recreational activities.

2.67

reading room

room for using books and other media in the library, which can also contain open stacks

2.68

record

phonograph record

thin, flat disk, usually made of vinyl, impressed on one or both sides with a continuous spiral groove in which audible sound is recorded

Note 1 to entry: As the disk revolves on a playback machine, called a record player, the groove causes a stylus to vibrate, producing electrical impulses in a cartridge that can be amplified as sound. The most common playing speed is 33 1/3 rpm (long-playing).

2.69

reference and information area

library space for reference and information services, generally including a reference desk, a reference library and workstations

2.70

restoration

actions taken to return a document which has suffered deterioration or damage as closely as practicable to its original state

Note 1 to entry: In archival restoration, no attempt is made to recreate missing text, etc., and all restoration work is kept clearly evident.

[ISO 5127:2001, definition 6.1.04]

2.71

RFID

radio-frequency identification

electrical transponder which stores information that can then be used to identify an item to which the transponder is attached, similar to the way in which a bar code on a label stores information that can be used to identify the item to which the label is attached

Note 1 to entry: In libraries, RFID techniques are used for the identification of media and library cards, especially for checking loans. Using RFID for self-service checking requires exit gates with adequate equipment.

Note 2 to entry: Adapted from ISO 18185-4:2007.

2.72

security case

frame in which videos, CDs and cassettes are presented in their original cover in free-access areas, but are protected by the frame, preventing usage

Note 1 to entry: The frame can only be opened by means of mechanic or electronic equipment at the circulation desk.

2.73

security system for media

system that, by electromagnetic or RFID-controlled protection, secures media against theft

Note 1 to entry: The media are each equipped with an adequate RFID chip or magnetic strip. An electronic alarm system is installed at the exit of a library to detect the unauthorized removal of media.

2.74

self-service terminal

self-service machine for users that automatically registers the check-out or check-in of media in the automated system via scanner or RFID technique

2.75

sheet music

printed music issued without covers, whether actually printed on single sheets (pages) or not

[ISO 5127:2001, definition 2.4.18]

2.76

shelf

set of thin, flat pieces of rigid material placed horizontally at right angles into a frame or wall, to hold books and similar items

2.77

shelf board

single board in a shelf

2.78

shelf capacity

average number of media that will fit on a shelf board, depending on the width of the shelf from upright to upright, the average depth (thickness) per item, and the portion of each shelf left empty to facilitate re-shelving

2.79

shelf depth

depth of a single shelf (board), but also depth of shelving in a rack or range of shelving

Note 1 to entry: Shelf depth can vary depending on the formats of the media to be stored.

2.80

shelf height

vertical distance between two shelves

Note 1 to entry: Adjustable shelving allows the distance to be altered to accommodate items of varying height.

Note 2 to entry: Average shelf height is one of the factors determining stack capacity.

2.81

shelving range

component of a library stack, consisting of a row of two or more sections of single- or double-faced fixed or adjustable shelving, with common uprights or shelf supports between sections

Note 1 to entry: The row can be free-standing or assembled against a wall.

2.82

shelving section

block of several shelving ranges with stack aisles between the ranges

2.83

sign system

signage

signposting for the users' orientation in the building, showing the way to the individual service areas of the library

2.84

single-faced shelf

single-sided shelf

shelving unit with shelf boards only on one long side and therefore accessible only from one aisle face

2.85

sorting system

machine for automatic sorting of returned media, whose number of sorting categories depends on the capacity of the sorting system

2.86

special library

independent library covering one discipline or particular field of knowledge or a special regional interest

Note 1 to entry: The term “special library” includes libraries primarily serving a specific category of users, or primarily devoted to a specific form of document, or libraries sponsored by an organization to serve its own work-related objectives.

Note 2 to entry: Adapted from ISO 2789:2006.

2.87

spine-out

books displayed on a shelf with their spines facing the front, usually one alongside the other with a bookend at the end of the row to keep them upright

Note 1 to entry: The shelving method is used in the stacks of most libraries because it allows the spine title and call number on each volume to be seen at a glance.

Note 2 to entry: Antonym: **frontal display** (2.30).

2.88

stack aisle

path between two shelf ranges for the retrieving and shelving of library materials, trafficable for book trolleys

2.89

stack capacity

amount of material that can be contained in the stack area of a library, expressed as the total linear metres or metres squared of available shelving, or the maximum number of volumes or other physical units that can be accommodated, sometimes calculated by means of a formula

2.90

stacks

areas in a library that serve for storing books and other media

2.91

staff lounge

room or area in a library usually equipped with comfortable furniture and a kitchenette, where staff members can go when they are not on duty to eat, relax on a break, or meet informally

2.92

storage library

library whose primary function is to store less-used material from other administrative units

Note 1 to entry: Storage libraries that are part of, or administrated by, another library (e.g. national or regional library) are excluded.

Note 2 to entry: Libraries whose stock remains the possession of the storing libraries are excluded. The collections and their use are counted with the proprietary libraries.

Note 3 to entry: Adapted from ISO 2789:2006.

2.93

storage space

space requirement of facilities in the floor plan

2.94

study booth

lockable room, usually with one user workplace and shelves

2.95

sustainability

state in which components of the ecosystem and their functions are maintained for the present and future generations

Note 1 to entry: Sustainability is the goal of sustainable development and can result from the application of the concept of sustainable development.

Note 2 to entry: In building construction, it relates to how the attributes of the activities, products or services used in the construction work, or the use of the construction works, contribute to the maintenance of ecosystem components and functions for future generations.

Note 3 to entry: While the challenge of sustainability is global, the strategies for sustainability in building construction are local and differ in context and content from region to region.

Note 4 to entry: "Components of the ecosystem" includes plants and animals, as well as humans and their physical environment. For humans, this includes a balancing of key elements of human needs: the economic, environmental, social and cultural conditions for societies' existence.

[ISO 15392:2008, definition 3.20]

2.96

training room classroom

room with workstations or laptops and presentation technology, where a group supported by a moderator can work practically (hands-on use) on a specified topic

2.97

undergraduate library

libraries that are established, supported and maintained by institutions of higher education to serve the information and research needs of undergraduate students and the instructional requirements of the undergraduate curriculum

Note 1 to entry: Undergraduate libraries are either operated as branch libraries or as independent administrative units.

2.98

usable area

part of the gross floor area which serves the main purpose of the building

Note 1 to entry: This includes space for user services (including areas for recreation and communication), materials storage, library management and technical services, events, exhibitions and meetings, equipment areas, aisles, toilets and janitorial areas, and all other space used for library resources and services.

Note 2 to entry: This excludes circulation areas (corridors, stairway space, lift shafts and traffic area for vehicles).

Note 3 to entry: This excludes the functional space that houses the central operational equipment of a building (e.g. sewage disposal, heating, conveyor technique).

2.99

user place

place provided for users for reading or studying, whether with or without seating or equipment

Note 1 to entry: This includes places in carrels, in seminar and study rooms and the audiovisual and children's departments of the library, also places for relaxed seating of various types.

Note 2 to entry: This excludes seats in halls, lecture and auditory theatres intended for audiences of special events. It also excludes floor space and cushions on which users can sit.

Note 3 to entry: Adapted from ISO 2789:2006

2.100

user service area

part of the library that is accessible to users

Note 1 to entry: This includes space for reading, studying, information delivery, and any other services delivered to users, as well as open-access storage areas as integrated parts of user service areas, media centres, workplaces for staff in these areas, and exhibition areas.

2.101

visually impaired

person whose sight makes using library materials in conventional formats difficult, if not impossible

2.102

workplace for blind and visually impaired persons

workplace with special equipment that allows persons with reading difficulties to understand print materials, e.g. via a computer where Braille function or a screen reader with loudspeaker/earphone are available

2.103

young adults' library

public library area offering special collections and services for young persons (aged between approximately 14 to 18 years)

2.104

zones

breakdown of the user area into spaces for specific user activities or user interests, especially in open-plan libraries

Note 1 to entry: Examples of zones are the entrance and lounge area, children's areas, fiction and non-fiction areas with face-to-face guidance, reading and working areas, etc. The "zoning" concept is also used to indicate acceptable noise levels, e.g. quiet or group study area.

3 Planning library buildings

3.1 First steps in planning

3.1.1 Reasons for new planning

Whether a community or institution determines to establish and build a library will depend on political developments. The definition of the library's mission and the assignment of specified tasks will influence the size and structure of the new building.

A planning process for replacing an old library building usually originates from the following causes:

- a) a growing number of users;
- b) a growing physical collection;
- c) new service areas of the library;
- d) organisational changes in the library;
- e) a conceptual change of the library's mission and goals;
- f) structural damage or contamination in the old building.

Traditionally, the usual reason for building a new library was the need for more space as collections expanded. Today, with a growing percentage of library acquisitions being available electronically, that reason will only be valid in libraries whose mission includes preserving their physical collections. In many countries, new library

building projects are trying to respond to the needs of the changing media context and new ways of user behaviour. Structural changes in the community or on the campus can also give reasons for planning a new location for the library.

3.1.2 Definition of purposes

Whether a community or institution determines to establish and build a library will depend on political developments. The definition of the library's mission and the assignment of specified tasks will influence the size and structure of the new building.

The road to planning a successful new library building includes a set of internal preparatory steps before going into the actual architectural specification:

- a) re-evaluation of existing service areas through user surveys and evaluation projects;
- b) evaluation of user activities in the library and the spread of such activities over the day/week/year;
- c) definition of the services the library will offer in the new building (e.g. training sessions, events, automated services);
- d) definition of future opening hours;
- e) definition of the population the library is going to serve, of the different user groups and their expected changes;
- f) analyses of future collection types and collection development, including analyses of weeding possibilities;
- g) development of new strategies for information delivery to the user, particularly electronic delivery, whether carried out in-house or remotely, taking into account changes in usage patterns, changing technology and general information seeking behaviour.

The following preparatory steps provide important information tools for architects and designers as well as library professionals:

- 1) a framework for an efficient and future-oriented library service, based on the detailed analysis of the context within which the library will have to operate in the near future and on a long-term basis;
- 2) a strategy – devised for updating the physical library as well as for implementing the new services.

These tasks should be carried out before starting the planning process for the building, so that there will be a comprehensive basis for investigating the space needs.

3.1.3 Definition of requirements

Based on the re-defined strategy of the library, the space requirements for the different areas can be calculated. This Technical Report describes the calculation of space for the following areas:

- a) user areas;
- b) collections;
- c) staff;
- d) library management and technical services.

Legal regulations or standards for special areas (e.g. for staff offices, meeting rooms or sickrooms), for safety issues (e.g. exits, fire doors), or for disabled persons have to be considered additionally. For planning facilities like toilets, cloakrooms or locker areas, loan and information desks, it is important to base the calculations on the number of visitors at peak times.

The time period for which space requirements should be calculated has been a vital question in times of print collections. A general rule was that stacks should be planned for housing at least 10 years of average additions to the collection. This has become less calculable but also less important in times of electronic collections. But as far as possible, foreseeable developments of the next ten years, e.g. of the population to be served and the services to be delivered should be incorporated into the space calculation.

3.1.4 Defining the location of areas in the building

The preparatory steps include assessing the processes and activities necessary for the library's services and defining their coherence. A detailed planning paper with diagrams will help the planning team and the architect to understand the workflows.

Traditionally, the floor plan follows the processing paths, as far as a transport of physical media is involved. In the case of electronic media or electronic delivery procedures, the location becomes more independent of workflows. It will be more important to follow the ways of users, e.g. to have short ways from the entrance hall to information desks and open stacks, or from open stacks to the loan desk or self-service terminal.

If possible, there should be separate entrances for staff and suppliers. The entrance for suppliers should have space for parking vehicles nearby.

3.1.5 Choosing the site

The librarians will in most cases be dependent on the funding authorities for the choice of a site, but they can influence the choice by showing the impact of a site on the effectiveness of the library. The site of a library can be even more important than the building itself, as the building can be remodelled, while disadvantages of a site will be permanent.

Choosing a site for a library should include the following considerations:

- a) the accessibility of the library to its population, e.g. by being located in walking distance, or by good transport connections;

This will usually mean that the library should be situated near public transport. Especially in urban centres, provision of parking space for private transport will be expensive.

- b) the proximity to institutions with which the library cooperates, e.g. civic facilities in a community or the centre for information technology in a university;
- c) the visibility of the library in a community, on a campus;
- d) the function of the library as local landmark or icon;
- e) the central location, either in the community or quarter, or in a campus;
- f) the acoustic characteristics of the surroundings (traffic, schools, industries, etc.);
- g) the adequacy of the site for the building as to soil, dimensions and the possibility of a later expansion of the building (poor quality soil or high groundwater levels can require special techniques for foundations that raise the cost of the building);
- h) regulations of building law in the prospected area, e.g. restricted height or dimension, prescribed distances, style of roofs, consideration of historic monuments nearby;
- i) environmental issues like angle of incidence of the sun's radiation, shadowing by larger buildings, a possible contamination of the site, problems of air pollution, especially in town centres, and fresh air supply;
- j) risk analysis of natural and man-made threats in the surroundings of the site.

Risk factors in the natural surroundings include the potential occurrence of earthquakes, seismic activities, hurricanes, storms or floods. The possibility of high water levels should be considered when planning to place stacks or other areas below ground level.

Man-made risks include danger from riot and civil commotion, terrorism, fires, or explosions, most of which cannot be foreseen when planning the building. But attention should be given to a possible contamination of the site and to problems of air pollution, especially in town centres.

3.2 Factors affecting library space requirements

3.2.1 General

Space requirements of an individual library are in the first place dependant on its mission, that is to say on the tasks the library is set up to perform and the population it is meant to serve. The specific mission and population to be served will require different services and products, and this will determine the amount of space that is required. A library that is open to the public, with heavy user traffic during opening hours, will have different space requirements than a special library serving a defined limited population.

The space requirements will also be influenced by the library's vision, its concept of service delivery, e.g. providing an inspiring atmosphere for learning and research as well as for recreation and communication.

In the recent decades, electronic media and electronic services have been added to the traditional library's physical collections and services, so that all types of libraries today have to consider space requirements for both types of media and for integrated services. While print and other physical media require storage space, the use of electronic media and services involves an adequate amount of technical equipment and, where appropriate, designated areas for visual display and dissemination in the physical library.

The main factors that influence space requirements in libraries are:

- a) type and size of collections, e.g. serials, audiovisual media, rare materials, electronic collection;
- b) type of shelving: open or closed stacks, accession order or classified shelving, presentation of media according to specified user interests;
- c) usage policy (loans, in-house use);
- d) type of services offered: user places, lending and delivery services, reference and information services, user training, learning centre, events, interactive services, citizens' services;
- e) types and coverage of self-service options;
- f) type of logistical facilities, e.g. transport systems or self-service terminals;
- g) user activities in the library: individual or group work, learning and research, browsing, reading and borrowing media, information and communication, meeting, listening, and "playing";
- h) special services for user groups, e.g. children's library, workplaces for visually impaired persons.

3.2.2 Types of libraries

Libraries can be roughly subdivided according to their mission and tasks into the following types.

- a) *Academic libraries*: libraries whose primary function is to cover the information needs of learning and research (libraries of institutions of higher education, general research libraries).
- b) *Public libraries*: general libraries that serve the information needs of the whole population of a local or regional community, with emphasis on both formal and individual education, literacy, life-long learning, personal creative development, cultural and recreational activities.

- c) *School libraries*: libraries attached to all types of schools below the third (tertiary) level of education whose primary function is to serve the pupils and teachers.
- d) *Special libraries*: libraries covering one discipline or particular field of knowledge or a special regional interest, or primarily serving a specific category of users. Special libraries can also be sponsored by an organisation to serve its own work-related objectives. Examples are industrial and commercial libraries, media libraries, government libraries, health service libraries, or libraries of professional and learned institutions and associations.
- e) *National libraries*: libraries which are responsible for acquiring and conserving copies of all relevant documents in the country in which the library is located, usually via legal deposit.

3.2.3 Functional areas

The net usable area of a library can be allocated to the following main functions (see ISO 2789:2006):

- a) *user services*: includes space for reading, studying, lending and delivery (including self-service), reference and information, user training, and any other services delivered to users, open-access storage areas as integrated parts of user service areas, lavatories, and areas for recreation and communication;
- b) *library operations*: includes media processing, bindery and reprography, computing and management, projects;
- c) *materials storage*: includes all areas devoted principally to storing materials, whether open access or closed;
- d) *events, exhibitions, etc.*: includes areas/rooms for meetings and events, auditoria, and formal exhibition space.

This differentiation of areas can be used both for academic and for public libraries, but the emphasis laid on each area is generally different.

In academic libraries, user places, especially for long time working, will in most cases be crucial. Sufficient space for storing the media is still an important issue, as research collections can keep their relevance for a considerable time, and rare or special collections will have to be stored even longer. Closed stacks with compact shelving can be an efficient way of storing such collections. Closed stacks can be necessary because of preservation reasons.

In public libraries, collections are commonly weeded regularly to prevent constant growth. Public libraries present their collections nearly exclusively in open access, arranged as to topics or user groups. In order to promote the collections, media are often singled out and presented in an eye-catching way, e.g. in special furniture or frontal display. This kind of presentation will need more space than normal shelving.

Areas for communication, recreation and events, though gaining in importance in all types of libraries, will be more relevant for public than for academic libraries.

The concept of “zones” is especially used in open-plan public libraries. Zones reflect user activities and user interests, e.g. entrance and lounge area, children’s areas, fiction and non-fiction areas with face-to-face guidance, reading and working areas etc. The ‘zoning’ concept is also used to indicate acceptable noise levels, e.g. zones for group work and communication and silent zones for individual reading and studying.

3.2.4 Open or closed stacks

An important issue affecting space requirements is the presentation of the physical collections. Collections can be shelved in open stacks, giving free access to users, or in closed stacks whence they should be fetched by library staff. Public libraries and most special libraries usually offer their collections in open access, Academic libraries in recent decades have been so constructed as to provide open access for the greater part of the collection. Older libraries have taken up this idea, if the building allowed opening the stacks. In libraries

with the task of preserving special or rare materials like national or regional libraries and certain academic and special libraries it will always be necessary to store certain parts of the collection in closed stacks.

Shelving in closed stacks is space saving, as the media can be arranged on the shelves in accession order and according to their formats, and the aisles need not provide for heavy traffic. In open access areas, media are shelved in classification order in order to support browsing, and space for additions should be reserved at each classification number. Generally, the media are not sorted as to format, and therefore there should be a larger distance between shelf boards. The aisles should be wide enough to allow for several users browsing simultaneously, and seats should be provided for short periods of reading.

3.2.5 User activities

The pattern of library use in the physical library is changing. Though still more electronic resources are available at all times via a library access from home, job or elsewhere, the physical library premises have a continuing attraction. Surveys illustrate that a growing number of users visit the library for purposes other than borrowing media or otherwise using the collections. The users come for face-to-face professional librarian guidance, to learn and study, to seek information or inspiration, to search on the Internet and more and more to use the library as a meeting place, either for relaxation or group working.

There is a general trend of users bringing their own books and other materials and their own mobile devices into the library. This entails that libraries are opened as long as possible, even without any staff present. Self-service devices help to maintain important services, and access to the library is made possible by library cards serving as keys. Opening a library without library staff requires special consideration of monitoring and security problems.

Traditionally the calculation of space for library buildings has been primarily based on requirements for the collections and the technical services. Such space is still necessary, but space for user activities in the library has gained in importance and should be included in the calculation. This does not only concern the floor space for lending and delivery services, reference and user training, or the traditional reading-rooms with individual places for users. New working practices in learning and research call for user places with a variety of equipment, ranging from simple seats for short periods of reading to specified multimedia places. Wireless access is increasingly offered in libraries, thus allowing users with own laptop or notebook to access digital materials and online resources from most areas in the library. The role of wireless access is however declining because many users have their own mobile web with flat rate fees.

Group work has become crucial for learning, especially in institutions of higher education, therefore group working areas with appropriate furniture and noise control should be considered. The number and type of user places will of course depend on the library's profile and population to be served and will also be affected by the library's lending policy. If the library does not offer its collections for loan outside the library premises, but allows only in-house use, e.g. in special libraries, more user places can be needed.

The library is an important meeting and communication centre, in many cases the main such centre, both in communities and in universities. Therefore, recreation and communication areas and space for events in the library have to be included in the space calculations.

Public and academic libraries have one trend in common: They tend to function increasingly as the meeting place and social hub of the local community; e.g. a municipality or a campus. This tendency is often emphasised by spectacular and landmark style architecture.

3.2.6 Learning and teaching areas

Libraries have always provided space for working inside the library, but this was mainly meant to accommodate individual users using media from the collections.

Today, use of the library has changed. There is a general trend toward studying and working in the library without using the physical library collections, but with need of Internet access. There is also a growing tendency for group work. Both developments make changes in equipment and seating necessary. Group working areas, wireless access in the whole user area, and informal spaces that allow for social interaction are now important issues.

Learning can occur in different areas of the library. But many libraries provide specially designed spaces that by their structure and equipment facilitate learning. Such learning spaces offer for instance collaborative equipment for group learning. Learning spaces can be organised jointly by libraries and centres of information technology, especially in institutions of higher education. In such spaces librarians and IT-specialists are in direct contact with the users and able to provide differentiated service.

Instructing users in the use of information is a new role in libraries. Traditionally, many libraries have restricted their “user education” to training in the use of their own services, either as guided library tours or as general introductory lessons about the library’s services. Since the information resources as well as the ways of information seeking have changed dramatically, the difficulty for users is how to find and select relevant information. Therefore, libraries have taken up the new task of teaching information literacy, as well in public as in academic libraries.

Teaching spaces are generally specially equipped rooms for interactive teaching, often with computers for hands-on training. Flexible furniture will help to adapt the room to various user groups and teaching methods.

3.3 Special service areas

3.3.1 Children’s library

3.3.1.1 General

Children (usually the age-group between 0 and up to and including 13 years) represent a high percentage of public library users. This group makes special demands on a library in terms of services, media, space and function. Therefore most public libraries offer a children’s library for this target group which can be organised as a separate room or at least as a special zone.

The core services of a children’s library are based on the concept of experience-based learning and literacy, including age-appropriate support of media and information competence, but considering also the recreational activities of children. This concept implies a close cooperation with schools and kindergartens; therefore the library will usually invite group visits from these institutions. The children’s library can also provide child-related services to parents, teachers and educators.

Children’s libraries provide space for browsing, reading and learning, for lending and returning media, for assistance with homework assignments, listening to music, viewing motion pictures, playing and gaming, and events like storytelling or puppet theatre.

In their collections, children’s libraries provide books, audiovisual documents, magazines and games for all ages, for the youngest children mostly picture books. Children’s libraries normally present their collection split up according to the children’s age, e.g.

- a) 0 to 3 years;
- b) 4 to 7 years;
- c) 8 to 13 years.

3.3.1.2 Required space and position in the building

The space needed for the children’s library depends on the structure of the library’s population to be served. Generally, it will occupy a considerable proportion of the overall space of the library. The children’s library should have barrier-free access, and there should preferably be natural light, at least in some parts of the area.

Children’s areas tend to be noisy. Therefore, they should be placed away from, or be insulated from areas that demand quietness.

There should be enough space for programmes with groups of kindergarten children or with school classes. A separate room for events or a sound-proof partition is beneficial.

3.3.1.3 Design and equipment

The interior design and the equipment of the children's library will be heterogeneous, as the interests and demands of different age groups – babies, smaller children and school children of different ages – have to be considered. The furniture should reflect the fact that there will very often be accompanying adults who also should feel welcomed in the area. The special safety issues of children as to furniture, stairs etc. should be kept in mind.

For schoolchildren reading places and tables for doing their homework should be offered (for required space see 4.2.2.7). The number of places necessary depends on the size and social structure of the library's population to be served. For classes and other groups there should be areas for group-working.

Places for computer games need at least 3,00 m². Depending on what type of games the library offers, a separate room should be considered.

The equipment should be flexible (e.g. shelves on castors) in order to accommodate different programmes and events, including reading nights with the possibility to sleep overnight in the library. Fixtures and furniture should incite creative imagination and help children to find their own corner in the area.

Shelves in children's libraries will be lower and need more space than for media in the adult section (see 4.7); the same applies to the special shelf elements for frontal display of the media. Special furniture for picture books and for toys also requires more space.

When the library offers self-service functions for lending the children's library should provide lending machines adapted for children.

Special equipment used for story-telling can require cabling and designated floor space. Story-telling areas can require special sound-insulation, or sound-muffling equipment.

EXAMPLE Story-telling lamps are sometimes installed over seats for small children. A story-telling or reading-lamp is a large, pendant lamp with built-in loud speakers, connected to a remote sound/music supply system, handled by the staff. This installation needs flexible cabling (floor and ceiling) and approximately 4 m² of floor.

Details for equipment and facilities in children's libraries:

- a) toilets and basins suitable for children;
- b) a place with a changing table (baby room);
- c) parking space for perambulators;
- d) separated cosy zones for lap-reading and story-telling;
- e) space(s) or rooms for reading promotion, events and programmes with adequate technology;
- f) walls with whiteboards, blackboards, panels to support programmes for groups;
- g) furniture or devices to present posters or children's works of art.

3.3.2 Young adults' library

3.3.2.1 General

Young adults (usually the age group between 14 and 18 years) are a special, but not at all homogeneous target group of public libraries. This age group needs services related to education and learning as well as services for leisure time and hobbies and should be attracted towards the library by tailor-made offers.

Young adults' demands on collections and services of the library are very diverse and definitely different from those of children or adults. Therefore the library for young adults should be a separate room or at least a separate area, providing space for reading and learning, individually and in groups, and for listening to music, viewing television or movies, gaming and talking. The young adults' area should provide the features of a meeting place for the intense communication demands and activities of this target group.

3.3.2.2 Required space and position in the building

The space needed for the young adults' library depends on the structure of the library's population to be served.

Areas for young adults can be noisy, especially as young adults tend to visit the library in groups. Therefore, these areas should be placed away from or insulated from areas that demand quietness, but they should also not be far from the areas for adults.

There should be enough space for programmes with groups. A separate room for events is beneficial.

3.3.2.3 Design and equipment

The young adults' library should be different in design and equipment from other parts of the library. It should be designed and decorated with elements which are in tune with the tastes of the current young adult generation in order to increase the visits of young adults to the library and to retain them as library users. The area should have casual furniture and might be illuminated with special effects in order to attract the target group.

The equipment should be flexible, so that it can be quickly adapted to changes in demand and services. There should be an area with terminals for Internet use or for computer games. There should also be enough seating capacity for groups, either classes or just several people wanting to work, play or communicate together.

The space needed for study places and seats in recreation areas will be the same as for seats in areas for adults (see 4.2.2). Shelves for media will need the same space as in areas for adults.

Details for equipment and facilities in young adults' libraries:

- a) cosy zones for relaxed use of media;
- b) highly durable floor covering;
- c) areas for programmes or a separate function room fitted with modern technology; at least an infrastructure for mobile technology;
- d) walls with whiteboards, blackboards, panels to support programmes for groups;
- e) technical and electric infrastructure to generate special effects with light and to install audio-visual features, like plasma screens.

3.3.3 Music library

3.3.3.1 General

Music libraries in the sense of this Technical Report are for the most part departments of public libraries, aiming to a large extent at leisure pursuits. In music libraries with a high number of users there can be special trained staff for information and help.

Collections in music libraries contain materials on music and musicians, including music scores, recorded music (CDs, audiocassettes, phonograph records etc.), discographies, and music reference materials. Where digital music is offered to users in the library, some space should be provided for marketing this service, e.g. via flat wall screens or by presenting examples at a specific user place.

The collections and services that music libraries offer differ according to their goals and population. Most music libraries lend out print documents and music on physical carriers (CDs, cassettes etc.) and provide places for listening to music in the library. A number of libraries provide downloading and streaming services on-site or via the library website. Some libraries also provide music production facilities.

Some libraries concentrate on music for children and young adults and on sheet music for young amateurs learning to play an instrument.

3.3.3.2 Space for collections

The collections are in most cases presented in open access. The materials (books, sheet music, CDs, cassettes, DVDs etc.) will generally be stored in classified order, but separately as to print and audio-visual materials.

It is recommended that the audio materials be divided by genres and types of music. This will need more space, but will make it easier for the users to find their special interests.

CDs should be presented in special furniture in frontal display, so that the users can read the title and the names of the performers. There are different types of such furniture, but it is important to position the CDs at least 75 cm above the floor.

For security reasons the library can either display only the empty CD boxes, while storing the CDs behind the loan desk, or CDs can be shelved with security cases (special lockers for the boxes). Both ways will need more space than the simple shelving of CDs in their boxes.

Music DVDs are a growing market for all types of music, not only for operas, musicals and other music theatre. DVDs can be displayed in the same way as the CD collection.

Audio cassettes and phonograph records are no longer in high use. However, some music libraries have still considerable collections of these types of media. Records can be stored either in ordinary shelves or in special furniture; music cassettes should be stored in special furniture.

The space required for storing the collection can be calculated according to the tables in 4.7.

3.3.3.3 Other space

The music library will also need places for reading or listening. Space for reading and studying places can be calculated with the data given in 4.2.2.1 and 4.2.2.2. It will be useful to have a separate sound-proof room for listening. At places for listening, there should be headsets and equipment for downloading and streaming.

Libraries that provide music for downloading need a computer and screen for showing the collection that is available via the library.

The main loan desk of the public library can probably also handle the lending from the music library. In case of a large collection and high use a separate loan desk in the music library will be necessary. (For self-service see 4.4.3)

If the library provides information and reference services for music, it can be useful to have a separate desk for this, staffed by qualified librarians. If there is a loan desk in the music library, information and reference services could be provided there.

If music libraries provide rooms/areas for producing and publishing music, with special equipment adapted to the type of music (e.g. acoustic or electronic music), noise insulation will be especially important. For any type of music including electronic music, headphones will be used.

3.3.3.4 Space for exhibition and events

Generally, the music library will use the normal area for exhibitions and events (see 4.3). But when planning that area, sound protection for musical events has to be considered.

3.3.4 Art lending library

3.3.4.1 General

In this Technical Report, art lending libraries are departments of public libraries with collections of art books, works of art (e.g. pictures, sculptures) and reproductions, which lend those books and objects for a specified time period to users. Art lending libraries usually concentrate on modern art in order to promote it to the public. These libraries are often kept separate from other library areas.

Art lending libraries provide physical documents or objects of various formats and size. Most frequently, the collections consist of:

- a) art books and periodicals;
- b) lithographs, engravings, various prints;
- c) posters;
- d) paintings;
- e) films, videos;
- f) sculptures, 3-dimensional objects.

Depending on the materials in the collection and the number and type of users, a professional librarian can be employed in the art lending library.

The storage area for the collection, especially for the works of art, should have temperature/humidity control and appropriate lighting for the preservation of the art objects (see 5.1 and 5.5). Art lending libraries can also provide facilities for users to produce films.

3.3.4.2 Space requirements

Housing the objects and the packing material for lending needs more space than for other media and requires special furniture for storage and presentation. The shelving and other furniture should be adapted to the materials in the collection. Special requirements are:

- a) special drawers and large working-tables for flat files of unframed prints and other flat art material;
- b) special vertical storage for hanging art (like paintings and framed works of art).

For reference and lending activities there should be a combined reference and loan desk. User places will be needed for reading the print materials.

A number of libraries offer downloading and streaming services on-site or via library websites. If the services are offered on-site, there should be space for:

- computers, scanners, printers;
- screens, projectors, etc.

If the library provides films and videos for lending, a quiet area with user places for viewing the materials will be useful.

3.3.4.3 Space for exhibitions and events

Generally, the art lending library will use the normal area for exhibitions and events (see 5.3). As to requirements for exhibiting works of art, see 4.3.3.3.

3.3.5 Special services for users with reading difficulties

3.3.5.1 General

Users experiencing reading difficulties require special equipment to make printed material accessible, either by reading enlarged text or Braille documents and/or by listening to the content (talking books/newspapers) or both at the same time.

The same services as for visually impaired persons can be used for handicapped persons who cannot hold or handle a book. The audio services can also be useful for persons with dyslexia.

3.3.5.2 Required space and equipment

Usually this equipment is located in a special room with limited access, only users with reading difficulties being allowed to use the facilities. Usually staff will be present at specified hours to support the users in using the equipment. Face-to-face reading service might be offered to users.

The special technical support includes e.g.:

- a) computers with magnifying glass attached to the screen or with magnifier software;
- b) software and sometimes keyboard for translating text on the screen into Braille;
- c) speech synthesis software and software facilitating writing for dyslexic users;
- d) screen reader, reproducing a text via loudspeaker or earphone;
- e) scanner with OCR-software, translating text into audio documents;
- f) audio recorder;
- g) Braille printer.

The tables at the workplaces have to be large enough for a computer, a scanner and maybe other technical equipment as well as for print materials that the user needs. The tables should be adjustable in height. The size of the room depends on how many workplaces are provided. It can be necessary to provide shelves for audio documents on cassettes or CDs whose use is by copyright restricted to visually impaired persons.

Sound insulation of workplaces from each other has to be considered, as users listening to media or face-to-face reading can disturb others.

It can also be necessary to provide space for library staff where they can produce local copies of talking books.

3.3.6 Citizens' services

3.3.6.1 General

Citizens' services are service points of the local administration, offering easy access for citizens to administrative services (e.g. renewing passports or driving licences, paying dog licence fees). Such service points are often located at public libraries, taking advantage of the long opening hours of libraries, of a decentralized library infrastructure (branch libraries in the town districts) and of the library staff's competences in information supply.

Undertaking and/or housing citizens' services is a new task in public libraries. The new service can be established as part of the library service or as a specific service located inside or next to the library.

3.3.6.2 Required space and equipment

The required space for the service will depend on the type of information and help offered and on the number of persons expected to use the service. The service will probably need a special area with information desk plus waiting area. The area should have an un-bureaucratic atmosphere and should include space for more private consultations. There should also be space for displaying community information.

To ensure easy use of the service point's functions side by side with the library functions, the following issues should be considered:

- a) the sign system, inside and outside, should display all activities;
- b) the outdoor facilities and the entrance hall should reflect the needs of all visitor groups, e.g. children, elderly people, immigrants;
- c) if access outside library hours is planned for the service point, the security and safety systems have to be adapted accordingly;
- d) extra wardrobes and toilets may be needed.

3.3.7 Undergraduate library

3.3.7.1 General

Undergraduate libraries are established, supported, and maintained by institutions of higher education to serve the information and research needs of undergraduate students and the instructional requirements of the undergraduate curriculum. They are either operated as branch libraries or as independent administrative units. Not all institutions of higher education provide undergraduate libraries. In many cases, collections of textbooks and other materials for the curriculum are integrated into the general collection.

Undergraduate libraries provide the most-used current literature for the study courses in multiple copies, according to student numbers and needs. The collection is usually restricted to the basic recommended literature in all fields of study. Most frequently, this concerns books, which are increasingly replaced by collections of eBooks with free access for the students.

If the undergraduate library is maintained as independent unit, the collection can be widened to contain materials like periodicals, newspapers, audiovisual materials, maps, etc.

Independent undergraduate libraries can also offer user training, especially on information retrieval, or can serve as learning centres.

If the undergraduate library is located within the building of the central library, it should be placed near the entrance, so that students coming for quick lending and return of materials need not enter other library areas.

3.3.7.2 Space for collections

The collections are stored in open access, generally subdivided as to subjects and materials (books, CDs, DVDs, etc.).

The space required for storing the collection can be calculated according to the tables in 4.7. But as the collection turnover in undergraduate collections is extremely high, the full space as calculated for open access storage areas will usually not be necessary.

3.3.7.3 Other space

The number and type of user places in an undergraduate library depends on the services that are provided. For a loan collection of textbooks, places for quick browsing of the material or for consulting the online catalogue should be provided (see 4.2.2.3). If the undergraduate library provides areas for group work or user training or functions as learning centre, the required space for user places can be calculated according to 4.2.2.

Generally, space for a loan desk or self-service terminal will be needed. If the undergraduate library is housed in the same building as the central library, its lending could be handled in conjunction with the general lending service of the library, if this has been considered in the planning of the building.

For undergraduate libraries that function as independent administrative units, space will be needed for staff rooms, meeting rooms, toilets, etc.

3.3.8 Rare books and manuscripts department

3.3.8.1 General

Usually rare, valuable, unique and fragile materials like rare books and manuscripts will be separated from the rest of the collections, both as regards the stacks and the reading-rooms. The effects on construction and design of the building will differ from library to library, depending on the composition of the special collections.

Risk assessment is necessary; the precautions taken to protect the collections from theft, vandalism and accidents will differ according to the type of library and collection. The risk assessment will give further guidance for security systems, locks, fire protection, assault alarms etc. It is recommended that experts are consulted early in the planning process.

The specifications for strong rooms and stacks for rare books and manuscripts should follow national or international recommendations and rules.

For alarm systems, see 5.4.2.4.

3.3.8.2 Special reading-room

The special reading-room is the area where registered users work with rare materials out of the library's own collection or lent for a time from libraries or other institutions. Generally, the room contains a collection of literature dealing with rare materials, user places for working with the materials, staff places, safes for short storage of rare materials, cupboards for book rests and other equipment, and technical equipment like computers, microfilm readers etc.

If there is space, libraries often use glass cabinets for exhibiting special materials, e.g. their new acquisitions of rare books.

The reading-room needs special security arrangements. It should in principle be locked. There should be an entrance control area, where visitors pass a security checkpoint with registration when arriving or leaving. The desk or counter should be large enough for a registration book or library card scanner / RFID device for signing in and out, and also for a surface where personal belongings could be spread out. The security checkpoint should have an alarm button for cases of need. Lockers should be provided for users' personal belongings that cannot be taken into the special reading room.

The staff and/or guards need to have a good overview of the entrance area, controlling the locking/unlocking of the doors to the reading-room. Staff should also at any time have visual contact both with the users and with the library materials. The tables for users should be placed so that staff can see all the user places, even when working at their own places. Video surveillance can be helpful (see 5.4.2.3). The type and size of user places in the special reading-room should take into account the materials that have to be handled (see 4.2.2.1.4.).

It is recommended that building constructions like pillars, additional walls, built-in shelves etc. be avoided so that they do not hinder surveillance nor give opportunities for undisturbed illegal actions. The required reference collection for the reading-room should be placed so that surveillance is not interfered with.

Windows and doors are weak points, and special care has to be taken to limit opportunities of removing library material outside the reading-room. In some cases it might be advisable to use a room without windows.

Depending on the number of visitors, it can be useful to divide the reading room into two parts, one for quiet work and another where conversation is allowed, for instance when a librarian is consulted by a user, or during group visits.

3.3.8.3 Secure storage units/strong rooms

While the material is not used by the visitors, it has to be kept secure. There are generally two solutions:

- a) the stacks for rare materials are placed as near as possible to the rare books and manuscripts department, so that the material can be fetched directly from its permanent location each time a user requests it;
- b) a strong room adjacent to the reading-room temporarily houses the materials that have been requested during the times when the users are not using them.

The general requirements for storing library collections are described in 5.1.

For the rare books and manuscripts department, the following issues are especially important:

- a secure route from the permanent location of materials to the reading-room or strong room;
- adequate protection against fire, water, theft and other damaging actions (see 5.4);
- permanent control of temperature and humidity (see 5.1);
- lighting adapted to the materials stored (see 5.5.2);
- a safe locking system including a system for logging staff passing in and out.

The shelves and other furniture should be robust and of fire resistant material. Redundant equipment, trolleys etc. should be removed. All electric equipment and wiring should be easy to check for malfunction and to replace frequently.

The shelf boards should be deep enough for the materials to be stored and should be smooth in order to avoid damage. There should be enough space for keeping good order. A good overview over the shelves is a safety precaution.

For some types of materials storage in cupboards, lying flat, will give extra protection against fire or water damage. Compact shelves can give extra protection against fire and water if the mobile units leave no aisles when they are closed. If the stacks or the strong room are large, partitioning will give extra protection.

3.4 Joint facilities

3.4.1 General

The merging of libraries with other public or commercial institutions in one building influences building interiors and layout in various ways and should be considered when planning new buildings or when organizing joint facilities in existing constructions. Libraries can be housed together with cafés, cinemas, community services, galleries, internet cafés, malls, museums, media and news houses, sport and gym facilities, school and learning centres, tourist information offices, or other institutions. Academic libraries are often housed together with the IT-centre or the student advisory service of their institution.

In a number of cases there is only a loose contact between the library and the institution sharing the building. In other cases there can be an effective cooperation, enhancing the number and value of services and furthering cost-efficiency by sharing rooms, facilities and even staff.

Partnerships and cooperation between different local institutions and activities are established for several reasons: to attract more users, to further social inclusion, to better utilize staff competences, to share meeting facilities, and to provide cost-efficient services without administrative overlapping.

3.4.2 Required space and equipment

Space, design and equipment of the jointly used areas are dependent on the type of services and activities offered.

To support effective cooperation a set of planning rules should be kept in mind:

- a) the sign system, in- and outside, should display all institutions and their services;
- b) the outdoor space and the entrance hall should reflect the needs of all visitor groups (e.g. children, young adults, elderly people) and should offer facilities for the different institutions (e.g. book drops for libraries, ramps for galleries and museums, etc.);
- c) if access outside the library opening hours is planned for the other institution(s), the locking and safety systems have to be adapted accordingly;
- d) joint facilities for exhibitions, meetings and workshops should have a lock-up depot for each of the partners' specific materials;
- e) there should be a central janitor's space.

Presumably two or more institutions joined in the same building will attract more visitors than a single institution. Resistance and durability of the flooring should be considered (see 5.7). Entrance area and entrance hall, wardrobes and toilets, meeting rooms and recreation areas should be adapted to the higher numbers.

4 Usable areas

4.1 General

The gross floor area is defined in this Technical Report as the sum of all floor areas of all levels of a building. It is divided into the following spaces:

- a) the functional space that houses the central operational equipment of a building, for instance sewage disposal, heating, conveyor technique;
- b) the circulation space that is needed for access to the rooms, in-house traffic and for evacuation of the building in case of need; This includes for instance floor space of corridors, stairway space, lift shafts and traffic area for vehicles, but not movement areas in rooms that belong to the usable area;
- c) the space occupied by the constructional elements of the building (pillars, walls, etc.);
- d) the usable area, which serves the main purpose of the building. This includes space for user services (including areas for recreation and communication), materials storage, library management and technical services, events, exhibitions and meetings, equipment areas, aisles, toilets and janitorial areas, and all other space used for library resources and services.

For a number of service areas in libraries usable areas cannot be clearly separated from circulation space. Examples are stacks, reading-rooms, or lending areas. In these and other cases, the usable area includes

storage areas as well as movement areas and in addition the space in front of and beside facilities which is necessary for using them. In collection storage areas even the main aisles are defined as usable areas, not as circulation space.

4.2 Space for user places

4.2.1 Calculating the number of user places

4.2.1.1 General

Libraries are valued not only as places for reading, learning and working, but also as information and communication centres. In some libraries, numbers of physical library visits have decreased, due to a high proportion of the library's services and resources being available for remote use. In many libraries, numbers of physical visits remain constant or are even increasing, due to new library services like user training, cultural events, or group working areas. There is also a growing tendency for users working with their own material in libraries. Therefore, provision of an adequate number of user places, with or without equipment, will be one of the most important issues when planning the building.

In case of a re-construction or reorganisation of an existing library building, it will be less difficult to calculate an adequate number of user places. Measuring the occupancy rate of the seats at different times – including peak times – will give valuable information. But foreseeable future developments regarding user behaviour and technical equipment should be taken into consideration. New library buildings will generally cause a rise in user visits.

In the sense of this Technical Report, user places do not include seats in halls, lecture and auditory theatres intended for audiences of special events. Floor space and cushions on which users can sit are also excluded.

4.2.1.2 User places in public libraries

Public libraries are heavily used as information and communication centres. A large number of user places can be basic, as they will be rather used for short periods of reading or searching than for long-time studying. But as there is a growing tendency for using the public library as learning space, places should also be provided for this purpose. Another issue is the public library's role as social place for meeting and communication, which makes it expedient to offer groups of comfortable seats and informal seating. Lastly, the public library offers various types of cultural and educational events, which requires seats in lecture halls, auditory theatres and other such areas.

The number and type of user places in public libraries depends on the specific profile and tasks of the library, on the population to be served, and on the average number of visitors per hour. Small libraries should at least offer sufficient seats to house one school class, which would be about 30 pupils. A general rule is that there should be sufficient places for one third of the users in the building at any one time. This would include peak times, and therefore the number of user places should be calculated based on peak demand.

4.2.1.3 User places in libraries in institutions of higher education

In institutions of higher education the number of user places that the library should offer depends above all on the population to be served, especially the number of students. In several countries, models have been developed that determine what amount of user places could be considered as adequate. Usually, the models recommend a percentage of total students for which places should be provided. In these models, user places are defined as workplaces and do not include purely recreational seating.

Examples for such models are:

EXAMPLE 1 In the UK traditional rules for university libraries allowed 1,25 m² per student, based on one reader place per six FTE (full-time equivalent) students at 0,40 m² plus a book stack allowance of 0,62 m² and an addition for administration. This meant that for 16,7 % of students a workplace should be provided in the library (UK Higher Education Space Management Group 2006). Newer recommendations propose workplaces in the library for 20 % of total students (Edwards 2002).

EXAMPLE 2 Canadian recommendations claim that the library should provide workplaces for at least 14 % of the student population (University Libraries Committee 2005).

The recommendations can differ as to counting students in FTE (full-time equivalent) or as headcounts, considering also part-time students. Some models have taken the average occupancy of user places in libraries as basis for their estimate of an adequate number of places (Vogel and Cordes 2005), but this would not cover the daily peak times, e.g. between 11.00 a. m. to 13.00 p. m. and between 17.00 p. m. to 20.00 p. m. or later.

In some models, user places are calculated for individual faculties. This kind of calculation takes into consideration that library use can vary between students of different subjects. For sciences, technology and medicine, the assumption is that usage of library resources concentrates on electronic textbooks and journals that can be used by remote access. For humanities and social sciences, the assumption is that print materials are still important and that more time will be spent in the library. In such calculations, the number of places per student varies according to the faculty.

Such differentiation as to faculties is becoming less relevant. Though for many subjects resources are increasingly offered in electronic form and though many library services are now available online, the library remains attractive as place for learning and research for students of all faculties. Users discover the advantage of using both print and electronic resources together with the library's help and training services. Additionally, there is a growing tendency for group work in libraries or for users working with their own material in libraries. This tendency is re-enforced by the introduction of study courses with strict time schedules.

Given these tendencies, it is recommended that libraries offer user places for at least 15 % of students. Students should be calculated as persons, not as FTE (full-time equivalent), as part-time students will need a place at much the same time as full-time students. This recommendation includes places for group work and carrels but excludes places that are exclusively designated for recreation and communication, e.g. in lounge areas or in a library-café. Such places should be calculated individually for each library.

4.2.2 Types of user places

In the planning of user places the different requirements of users should be considered. People have different needs depending on their age, information behaviour, cultural background and social relations. Therefore it is necessary to offer a great variety of user places in the library building. This is important for space planning as well as for the choice of furniture.

Types of user places:

- a) places for concentrated work;
- b) single places for reading and listening;
- c) places for information and quick consultation;
- d) group study places;
- e) places in training rooms;
- f) seats in recreation and communication areas;
- g) places in children's areas;
- h) seats in auditoria.

4.2.2.1 Places for concentrated work

4.2.2.1.1 Standard place

The standard-type desk should be minimum 120 cm in breadth and 80 cm in depth. These measurements are adapted for the temporary use of laptops and notebooks or other mobile devices as well.

For the use of laptops and notebooks the places need wired or wireless access, power-supply and a loop for theft protection.

This kind of workplace can be arranged individually or in groups. But it has to be considered that concentrated study requires privacy and an appropriate distance between adjacent places. Some areas should be designed especially for silent learning.

4.2.2.1.2 IT-workplace

If the workplace is equipped with IT (personal computer, terminal or multimedia equipment) it requires a minimum of 160 cm in breadth and 80 cm in depth. There has to be enough space on the desk for monitor, keypad and mouse as well as for additional equipment like scanner or printer and for visual materials like books and writing pad.

4.2.2.1.3 Space calculation

The distance of tables in a row should be minimum 95 cm to offer the necessary moving space. The axis centre distance between the tables is therefore 175 cm. Both the standard place and the IT-workplace need an addition of 0,90 m² per desk to cover the before mentioned distances.

The following formula is valid for the calculation of the single workplace:

$$S = b \times c + 0,90 \text{ m}^2$$

where

S = space required;

b = breadth of the table;

c = centre distance of tables in a row.

The space required for a standard place as described in 4.2.2.1.1 is then:

$$S = 1,20 \text{ m} \times (0,80 \text{ m} + 0,95 \text{ m}) + 0,90 \text{ m}^2$$

$$S = 3,00 \text{ m}^2$$

The space required for an IT- place described in 4.2.2.1.2 is then:

$$S = 1,60 \times (0,80 \text{ m} + 0,95 \text{ m}) + 0,90 \text{ m}^2$$

$$S = 3,70 \text{ m}^2$$

4.2.2.1.4 Places for rare materials

Places for the consultation of rare materials require more space than standard workplaces. The materials have to be handled with special care and sometimes a book rest is needed for vulnerable items. In the study area a desk is needed for the security staff or curator and additional shelves or bookcases to store the materials when not in use. There are different kinds of tables needed for the various materials and the tables should be arranged concerning safety needs. There should be an addition of at least 1,00 m² per place compared to the standard place.

4.2.2.1.5 Closed or screened user places (carrels)

Quiet reading places in academic libraries are often equipped with screens. Such carrels should allow the use of laptops or notebooks in the way described in 4.2.2.1.2. An optimal ergonomic design is necessary because of the heavy use of the places. Because of the screens these places require around 4,00 m² each.

For intensive studying, postgraduates or long term projects libraries offer closed study booths with additional shelves for study material. The minimum space for one booth should be 7,00 m².

4.2.2.2 Single places for reading and listening

Some areas of the library like newspaper or fiction reading areas or music libraries should offer quiet reading and listening places. Comfortable furniture is necessary for such spaces. These places can come with or without desks. Each place requires about 80 cm in breadth and 80 cm in depth. The distance between two places should be 95 cm. The result is an axis centre distance of 175 cm.

The space for one such place should be about 2.00 to 2.50 m².

4.2.2.3 Places for information and quick consultation

These special places for short time catalogue and online research can be standing desks or smaller working desks. They require a minimum of 60 cm in breadth and 60 cm in depth. The distance between the places should be 95 cm.

The space for one such place should be about 1,50 to 2,00 m².

4.2.2.4 Group study places

In academic and in public libraries the demand for group study areas is growing. Collaborative work in the library requires separate study rooms. Otherwise group working tables have to be separated by interior design. Such rooms and areas should offer enough space for 4 to 8 persons each. The tables should be around 160 cm in breadth and 80 cm in depth each and it should be possible to combine them in groups. Two of these tables can seat a group of eight people.

A group study place requires 3,00 m² to 3,50 m².

Multimedia booths offer a great variety of technical solutions for blended learning and multimedia experience. They can be equipped with multi-touch tools for collaborative working with 4 to 6 persons. In the case multi-touch wallpapers are used some space is needed for the movement of persons working at the wallpaper.

4.2.2.5 Places in training rooms

For library instruction and teaching groups, libraries need training rooms. If this is not possible, group study areas should offer the opportunity for teaching and instruction.

Each place in training rooms or areas requires 3,00 m² to 3,50 m². The additional space needed for the instruction place is 7,00 m².

4.2.2.6 Seats in recreation and communication areas

Inviting and comfortable areas for recreation and communication are important spaces in all types of libraries. They can be designed as comfortable lounge areas or as combinations of armchairs and tables for newspaper or magazine reading areas. Sometimes these places are situated close to the library café; sometimes they are comfort zones between the shelves. These social spaces have to be insulated acoustically from quieter areas of the library. Power-points and wireless access should be offered for the use of laptops and notebooks and other mobile devices. A small table with four armchairs requires 4,00 m² to 6,00 m², a lounge area with armchairs and sofas 5,00 m² to 8,00 m² to seat four people.

If areas are used for computer games of groups, there should be two or more flat screens, some shelves for games that are not online based and play stations with comfortable seating for two or four at a time. Some space for lookers-on will be useful.

These seats and spaces don't count in the total number of user places because their purpose is not to fulfil the requirements for studying materials in the library.

4.2.2.7 Places in children's areas

The children's library should offer an elaborated structure of different zones for the age groups and special requirements of children.

Bolsters should be offered for toddlers to snuggle in.

Children between three and six years of age require an area for reading, painting and playing. An armchair for reading aloud and places with chairs, tables and cushions for reading and listening are necessary. Tables should be combinable for group activities.

For schoolchildren reading places and tables for homework require a space of minimum 2,00 m². IT-workplaces and places with computer games should offer at least 3,00 m² and can require up to 6,00 m² for groups or multimedia spaces.

4.2.2.8 Seats in auditoria

Middle-size and larger libraries need an auditorium for lectures, presentations, entertainment, meetings and other public activities. Separated rooms are required for technical equipment and the storage for chairs and scenery-elements.

One seat in a row requires at least 1,00 m².

4.2.2.9 Overview of space requirements for user places

Type of place	Rounded m ²
Standard place for concentrated work	3,00
IT-workplace	3,70
Place for working with rare materials	4,00
Carrel	4,00
Study booth	7,00
Single place for reading or listening	2,00 to 2,50
Place for information and quick consultation	1,50 to 2,00
Group study place	3,00 to 3,50
Training room place	3,00 to 3,50 ¹
Table with four armchairs	4,00 to 6,00
Lounge space for four people	5,00 to 8,00
Place in children's areas	2,00
Multimedia or gaming place for schoolchildren	3,00 to 6,00
Seat in an auditorium	1,00

¹ Training room: Additional 7 m² for instruction place

4.3 Space for events and exhibitions

4.3.1 General

A great number of libraries of all types regularly provide events and/or exhibitions for their population to be served. For a varied range of events it will be useful to have one large hall or area and one or several smaller rooms or areas for specialised events. Having an area or room for events that can be separated from the library will make it easier to organise events, and a separate entrance will render it possible to open the area outside the normal opening times of the library and to rent the area to external organisers.

When planning heating and air conditioning, the potential number of visitors should be taken into consideration.

4.3.2 Required space and equipment

The area for events should include space for lavatories and for a cloakroom or coat racks, if the facilities in the entrance area of the library cannot be used. Wireless access areas should be available and if not, ICT plugs as power supply should be ample. In auditoria all seats should have plug-in facilities.

A kitchen can be needed if there is no cafeteria nearby. The kitchen should be spacious enough for catering, and tap water, dishwasher, cupboards, waste disposal, and power supply should be appropriate for the use of external caterers.

Storerooms for chairs and other equipment (see 4.9.3) should be available. A studio for the preparation of events, especially for exhibitions, will be useful (see 4.8.3.4). If the library presents events on a stage, space for stage technique should be considered.

For planning the space of seats in auditoria and conference halls, see 4.2.2.8.

4.3.3 Requirements for specific rooms/areas

4.3.3.1 Auditorium/conference hall

Auditoria or conference halls have often the shape of a theatre or arena with built-in seating for meetings, lectures, etc. Flexible seating is recommended. There should be a meeting and registration area in front of larger auditoria/halls.

The following equipment is recommended:

- a) a film screen and projector facilities;
- b) a speaker's rostrum that is easy to move and yet stable.

4.3.3.2 Multipurpose hall

The requirements are the same as in 4.3.3.1, but without built-in seating.

4.3.3.3 Exhibition area

Exhibition areas are spaces where information, products or services are displayed. They should be placed close to the entrance or the main traffic flow in the building. Special requirements are:

- a) flexible lighting (both daylight and artificial light) that can be easily adapted to the material exhibited;
- b) easy-to-use curtains;
- c) flexible spot lighting that is easy to mount;