INTERNATIONAL STANDARD

ISO 28564-1

First edition
2010-11-01

Public information guidance systems —

Part 1: Design principles and element requirements for location plans, maps and diagrams

Systèmes de guidage destinés à l'information du public —

Partie 1: Principes de conception et exigences pour éléments de plans, cartes et diagrammes de situation

Reference number
ISO 28564-1:2010(E)

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

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.

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 28564-1 was prepared by Technical Committee ISO/TC 145, *Graphical symbols*, Subcommittee SC 1, *Public information symbols*.

ISO 28564 consists of the following parts, under the general title *Public information guidance systems*:

— *Part 1: Design principles and element requirements for location plans, maps and diagrams*

— *Part 2: Design principles and element requirements for directional and location signs* (under preparation)

Additional parts will be developed in due course.

Introduction

Continued growth in travel and mobility within and between countries has generated a growing range of wayfinding sign systems and styles containing a wide variety of information. Such sign systems serve various purposes, such as enabling the users to

— understand the range of facilities and points of interest present,

— understand the physical relationship of those facilities and points of interest to each other, and

— determine the best way to reach a required facility or point of interest given their mobility circumstances.

This part of ISO 28564 is concerned with location plans, maps and diagrams used to support wayfinding.

The principle of this part of ISO 28564 is that users of location plans, maps and diagrams should be able to assimilate required information quickly and accurately. It is not the intention to limit design freedom unnecessarily, but to set guidelines and, where appropriate, specifications that reflect the considerable volume of research that has been carried out on their design and use.

Although location plans, maps and diagrams can provide comprehensive guidance information, some people have difficulty interpreting them. Where appropriate, they should therefore be used in support of directional and location signs as part of an integrated wayfinding system.

Public information guidance systems —

Part 1:
Design principles and element requirements for location plans, maps and diagrams

1 Scope

This part of ISO 28564 specifies requirements and principles for the design and application of location plans, maps and diagrams used in public areas and workplaces to assist users to understand the environment, locate facilities and determine appropriate routes to reach those facilities. These location plans, maps and diagrams are referred to as location plans in this part of ISO 28564.

Location plans are intended for use in, for example, shopping centres, stores, hospitals, bus and train stations, airports, sporting and entertainment complexes, urban areas, parks, gardens and countryside, public attractions, museums and office complexes.

This part of ISO 28564 is not applicable to the design of escape plans, nor does it cover the design of directional and location wayfinding signs.

NOTE The design of escape plans is covered in ISO 23601.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

ISO 3864-3, *Graphical symbols — Safety colours and safety signs — Part 3: Design principles for graphical symbols for use in safety signs*

ISO 7001:2007, *Graphical symbols — Public information symbols*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 9186-1, *Graphical symbols — Test methods — Part 1: Methods for testing comprehensibility*

ISO 17724, *Graphical symbols — Vocabulary*

ISO 22727, *Graphical symbols — Creation and design of public information symbols — Requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17724 and the following apply.

3.1
location plan
plan, map or diagram displayed in public areas and workplaces to assist users to understand the environment, locate facilities and determine appropriate routes to reach those facilities

NOTE 1 A location plan may include the physical display structure.

NOTE 2 The term diagram is included because, in some situations, a location plan can be schematic or exclude or distort physical arrangements.

3.2
series of plans
group of the same or similar location plans which may be provided at different locations within a given area

3.3
main body
area within a location plan where the information related to the purpose of the location plan is given

4 General

4.1 Purpose

The purpose of a location plan is to provide orientation within a building or defined geographical area and to enable users to reach destinations quickly and easily.

4.2 Conformity with existing standards

Symbols used on location plans shall be taken, where they exist, from ISO symbol standards, such as ISO 7001 and ISO 7010.

If a new graphical symbol is required, the relevant International Standard (ISO 22727 or ISO 3864-3) shall be used as part of the development process and consideration shall be given to comprehension testing in accordance with ISO 9186-1.

The public information symbols given in ISO 7001 may be reproduced in any colour. However, the combination of safety colours and shapes specified in ISO 3864-1 shall be avoided to ensure that there is no confusion between public information symbols and safety signs. This also applies to arrows where the use of green and white shall be avoided to ensure that there is no risk of confusion with the direction arrows or safe conditions, used for evacuation routes.

In addition, any colours used shall not conflict with the use of those colours within the location plan to indicate a safety function.

5 Preparation

5.1 Brief

Before design work is undertaken, the requirements and objectives of a location plan should be clearly understood and expressed in a brief. The brief should include the area to be covered, the information to be shown, as determined by the nature of the tasks that the expected users will wish to accomplish, and any special requirements concerning information presentation.

5.2 Gathering data

Sources of information will depend on whether the area to be shown is at the planning stage or already in use. Where the area is at the planning stage, information may be obtained from the facility client and from architects, interior/landscape designers, engineers and other professionals with knowledge relevant to the current task. Where the facility is already in use, additional information can be obtained by consulting with

a) potential users of a location plan,

b) local police, shopkeepers, reception/information desk staff and others who might have experience of wayfinding issues within the area to be covered, and

c) any existing location plans.

NOTE A site visit can be useful in gaining information regarding the site and its requirements, and, where possible, to observe and document relevant behavioural patterns.

At the conclusion, the data gathered should be reconciled with the brief.

5.3 Area to be covered

The area to be covered by a location plan will often have logical boundaries, for example as defined by a floor of a building or by a discrete local geographical area; however, in some circumstances this area may be large or complex. The area covered by an individual location plan should not be such that it becomes difficult for users to remember sufficient detail to reliably reach any location shown. In such circumstances, the area should be divided into smaller units, each with its own location plan. Design consistency should be such that users can easily recognize the family relationship.

5.4 Information to be shown

Examples of location-plan layouts are shown in Annex A.

Some considerations to determine the information to be shown are as follows.

a) The location of the users and the types and positions of the facilities about which they will require information. See Figure A.1.

b) The proportion of the expected users for whom the use of the official local language(s) might be insufficient.

c) Whether the location plan will need to show only specific information, for example, the locations of different transportation stops. See Figure A.2.

6 Design

6.1 Principles

The following should be taken into account in the design of a location plan.

a) The relevant information from sources described in Clause 5.

b) It shall consist at least of a title (see 6.2), main body (see 6.3) and, normally, a legend (see 6.4). It may also include an index (see 6.5), a scale (see 6.6) and a north designator.

c) The use of text on the main body should be kept to a minimum.

d) The use of the official local language(s) might be sufficient. It is recommended that, if an additional language is required, English should be used.

e) When using text, jargon should be avoided and specialized terms should only be used where the target audience is known to be familiar with them. Abbreviations should only be used where they are in common use and well understood.

f) Text should always use font(s) with high legibility. A single sans-serif font family is recommended.

g) The text should be designed so that all the information it contains is clear and legible for users in a standing or seated position to facilitate readability by those in wheelchairs.

h) Details should stand out clearly, including any appropriate designator showing the users' position.

i) In a series of plans, information should be illustrated and presented consistently, such as by using the same symbols, terms and graphic style.

j) The method of representing the relationship between the site shown on a location plan and the area beyond should be considered. For example, an overview plan may be needed and/or it may be important to show where entrances come from and where exits lead to.

k) The colour combination shown on a location plan should be considered to ensure legibility for all kinds of users, for example, users with colour-vision deficiency.

l) Additional methods should be considered to make it useful for all kinds of users, for example, users with vision impairment.

m) A three-dimensional view might be easier for users to understand than a two-dimensional view. However, caution should be taken to minimize complexity and to ensure that other important details are not obscured. It may be appropriate to show only selected landmarks in three dimensions. See Figure A.3.

n) Incorporating relevant architectural/environmental features may assist orientation and comprehension.

o) Wherever possible, the shape of the area covered should be reflected in a location plan.

p) High contrast and other graphic techniques, such as appropriate spacing and scaling, should be used to ensure legibility under all normal viewing conditions.

q) Where fine detail is required, it might be appropriate to incorporate an enlarged view of a specific area. See Figure A.4.

r) On smaller-scale location plans intended to show local detail, all routes accessible by those with mobility or other physical difficulty should be clearly shown. Where routes might not be fully accessible, such as where there are steps, this should be indicated and alternative routes, for example, via slopes or elevators/lifts, should be clearly shown.

s) Standardized graphical symbols should be used, where possible, to reduce the amount of text required.

6.2 Title

The text in a title shall reflect the nature and purpose of the information covered by a location plan through the choice of a suitable name, for example, “Town-Centre Area Location Plan”, “Newtown Information”. Where the information is of a general nature, the standardized symbol for Information (ISO 7001:2007, symbol PI PF 001) should be used. Other graphical symbols may be incorporated where the information is specific. For example, a bus symbol may be appropriate to draw attention to a bus-stop location plan.

6.3 Main body

Considerations for the design of the main body are as follows.

a) The position of users viewing the location plan shall be indicated prominently by means of an appropriate designator. Text such as “You are here” or just “You” shall be used either with the designator or in the relevant entry in the legend. Care should be taken that this cannot be confused with anything else and that it does not obscure any required information.

NOTE The “You are here” designator is not standardized in this part of ISO 28564; the designator shown in Figure A.7 is indicative only.

b) For outdoor location plans, the main body shall include a “North” designator.

c) Where the main body shows many facilities of a particular type, such as public transport stations or car parking, consideration should be given to using a clearly identifiable graphic element, such as a specific colour, to highlight such facilities.

d) A two-dimensional location plan should normally be drawn to scale.

e) Where some other presentation is used, such as a three-dimensional drawing or a drawing whose scale is distorted (perhaps because one section of a location plan is much further away from the main part), the designer should pay sufficient attention to the comprehensibility of the drawing when testing the effectiveness of the location plan. See Clause 8 and Annex C.

f) Text shall be used in conjunction with a symbol only where necessary to identify a named location or facility, such as a named and/or numbered public-transport station. If a commercial name is necessary to identify a location, it may be given.

g) Symbols and text indicating facilities should be shown in the main body, in their correct position or in association with an appropriate arrow or other graphic linking the symbol/text to the actual location of the facility on a location plan.

h) The size of graphic elements should be consistent within a location plan and should be sufficient to provide legibility at the intended observation distance.

When a location plan is intended to cover a multi-storey facility, it can be appropriate to design it in three dimensions or to show a cross-section with a key leading to individual plans of each floor. These location plans should be designed so that the floor on which the location plan is positioned can be identified and so that routes to destinations, including those on other floors, can be easily determined.

6.4 Legend

The legend, if provided, should give the meaning of symbols, specific colours, and types of lines or other graphic details that are used within a location plan.

Text used in a legend may use generic names or commercial names, depending on the purpose of a location plan.

The legend shall be designed so that the meaning of any graphics used can be quickly and accurately identified.

6.5 Index

An index, for example an ordered list of street names, locations, shop names, etc., keyed to a grid or other reference method, may be included as part of a location plan. See Figure A.5.

6.6 Scale

A scale should be given to indicate the distances involved in reaching facilities. This may be achieved by using a scale bar and/or by showing typical walking times. See Figure A.6.

6.7 Example

Figure A.7 illustrates the key points described in 6.1 to 6.6.

7 Positioning and orientation of location plans

7.1 Positioning

Location plans should be placed where users of the area/facility will expect to find them. Usually, this will be near entrances, at positions where people assemble, or in complex spaces or at decision points, where people may need wayfinding assistance or reassurance. However, positions where there is a considerable amount of distracting visual information should be avoided. Wherever possible, priority should be given to the location plan and any conflicting advertisements or unrelated signs should be removed.

Location plans shall be placed where users, positioned in front of them, can easily see relevant wayfinding features. Where the environment is so complex that more than a few mental instructions are required to reach a desired location, additional location plans should be provided at regular intervals.

Location plans should be sited and made of materials to counteract glare and reflections.

In certain situations, location plans can be landmarks themselves, helping orientation within the area. This should be taken into account in their design and positioning.

General considerations for positioning location plans are as follows:

a) they are easily seen;

b) they do not create a physical hazard;

NOTE This applies, in particular, to the location and height of installations and to any possible dangerous protrusions.

c) they are located so that users do not obstruct adjacent circulation space, taking into account the potential for crowding to occur around the location plan;

d) they do not obscure the view of their surroundings;

e) the information shown, especially spatial cues and physical landmarks, should be readily identified by the users as being clearly related to the environment to which they refer;

f) wherever possible, they are fully accessible to all potential users.

NOTE In the design and positioning of location plans, attention is drawn to any national legislation with respect to accessibility.

Mounting heights and other aspects of the installation of location plans within a series should, where possible, be consistent.

When a location plan is associated with advertising, such as when it is commercially sponsored, care should be taken to ensure that any commercial elements do not interfere with the users' ability to easily understand the purpose of, and rapidly assimilate the information on, the location plan.

7.2 Orientation

An example of orientation is given in Annex B.

A single location plan should normally be designed to correspond with the viewing direction of the users at the prescribed installation position, unless practical considerations preclude this (for example, the shape of the site to be shown is difficult to accommodate in the space available).

In a series of plans, similar design principles apply (see Figure B.1) and positioning should be considered accordingly. However, consistent orientation, for example, using the same north-south axis with geographical north at the top of the location plan, may also be appropriate.

8 Testing

The effectiveness of location plans should be tested to determine whether users are able to find their present location and popular destinations, quickly and accurately. It is recommended that a prototype be constructed and an experienced professional be engaged to carry out the testing. Suitable laboratory and field tests are given in Annex C.

9 Construction and maintenance

9.1 Environmental harmony

In many environments (such as national parks and gardens, historic buildings or some modern buildings), it may be appropriate to incorporate, in a location plan, structures, materials or colours sympathetic with that environment. Such incorporation should not interfere with the users' rapid and accurate comprehension of the information within a location plan.

9.2 Sustainability

Location plans should be constructed of materials from sustainable resources and using equipment and techniques requiring minimum use of energy.

9.3 Illumination

There should be appropriate illumination provided for any location plan. This applies, in particular, where location plans will be viewed at night.

NOTE Excessive illumination can be an obstacle to the reading of location plans.

9.4 Durability and maintenance

Location plans should be constructed of durable materials, appropriate to their position and expected service life, and should be easy to clean, repair and update, as and when required.

The area covered by location plans can be subject to frequent changes and location plans should therefore be designed to allow for amendment to ensure that they are kept up to date.

9.5 Inspection and updating

Regular inspections of location plans should be conducted to ensure that they remain legible, conspicuous, comprehensible and accurate.

Any change of the information within the area covered by a location plan should lead to review and, when necessary, revision.

NOTE An inaccurate location plan might be less helpful to users than no location plan at all.

Annex A
(informative)

Examples of location-plan layouts

The seven example layouts in this annex are provided to illustrate various design considerations and are indicative only. They are given as an aid to designers in creating actual location plans and should not be presumed to be exhaustive.

The colours and designators used are similarly only illustrative, although the graphical symbols shown are all taken from ISO 7001:2007.

NOTE The colours and the designator are indicative only.

Figure A.1 — Location plan showing position of users and types and positions of facilities

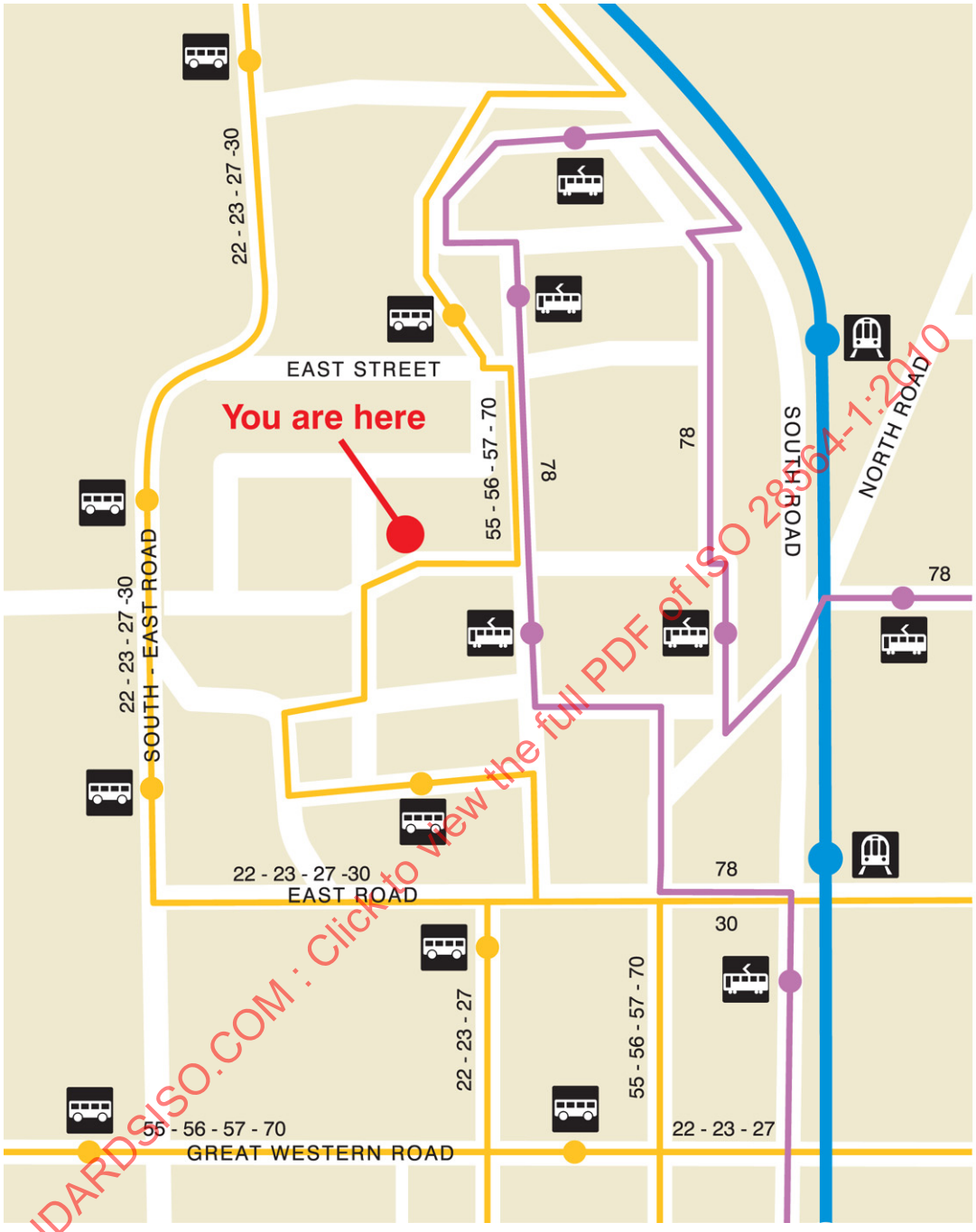


Figure A.2 — Location plan showing only the positions of transportation stops and routes

Figure A.3 — Location plan showing only selected landmarks in a three-dimensional view

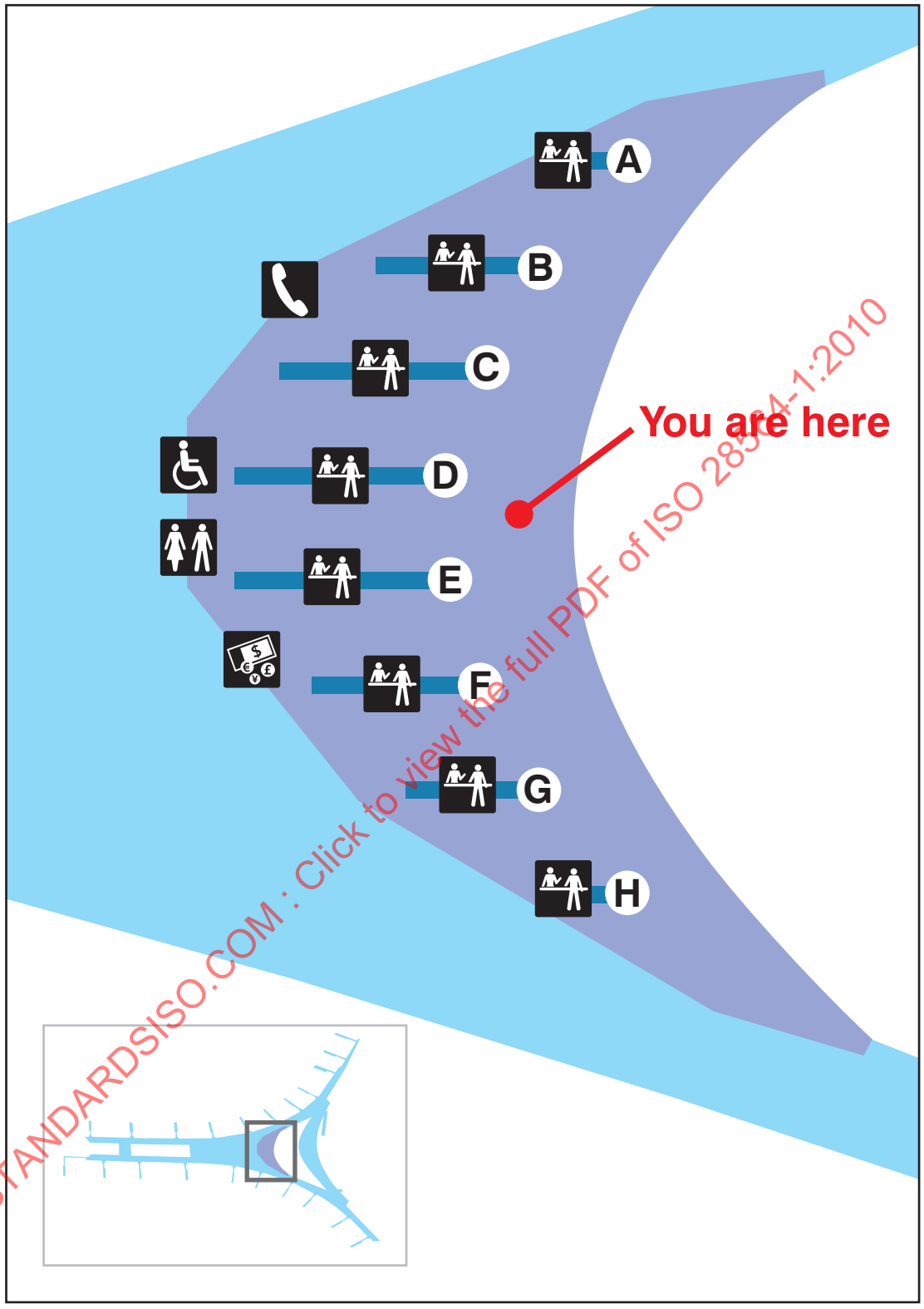
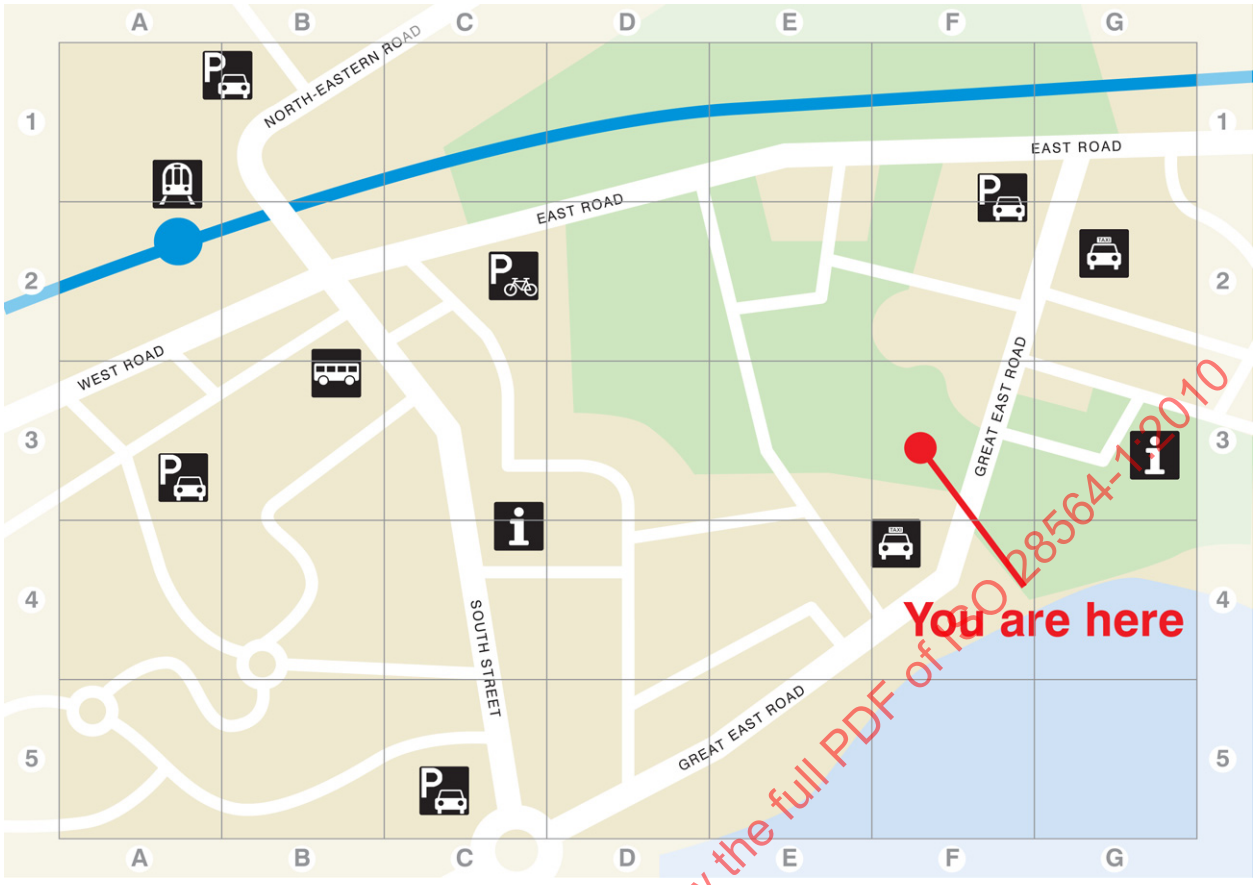


Figure A.4 — Location plan showing a component area in a larger scale



Index

Bicycle parking	C2	North-Eastern Road	B2 - B1
Car parking	A3, B1, C5 and F1	South Street	B2 - C5
East Road	B2 - G1	Taxi	F4 and G2
Great East Road	D5 - G1	Underground	A1
Information	C4 and G3	West Road	A3 - B2
Bus station	B3		

Figure A.5 — Location plan showing index of facilities and street names keyed to a grid

Figure A.6 — Location plan showing a scale and typical walking times

Figure A.7 — Location plan of a typical urban area including main design elements

Annex B
(informative)

Example of orientation

The example shown in Figure B.1 is indicative only.

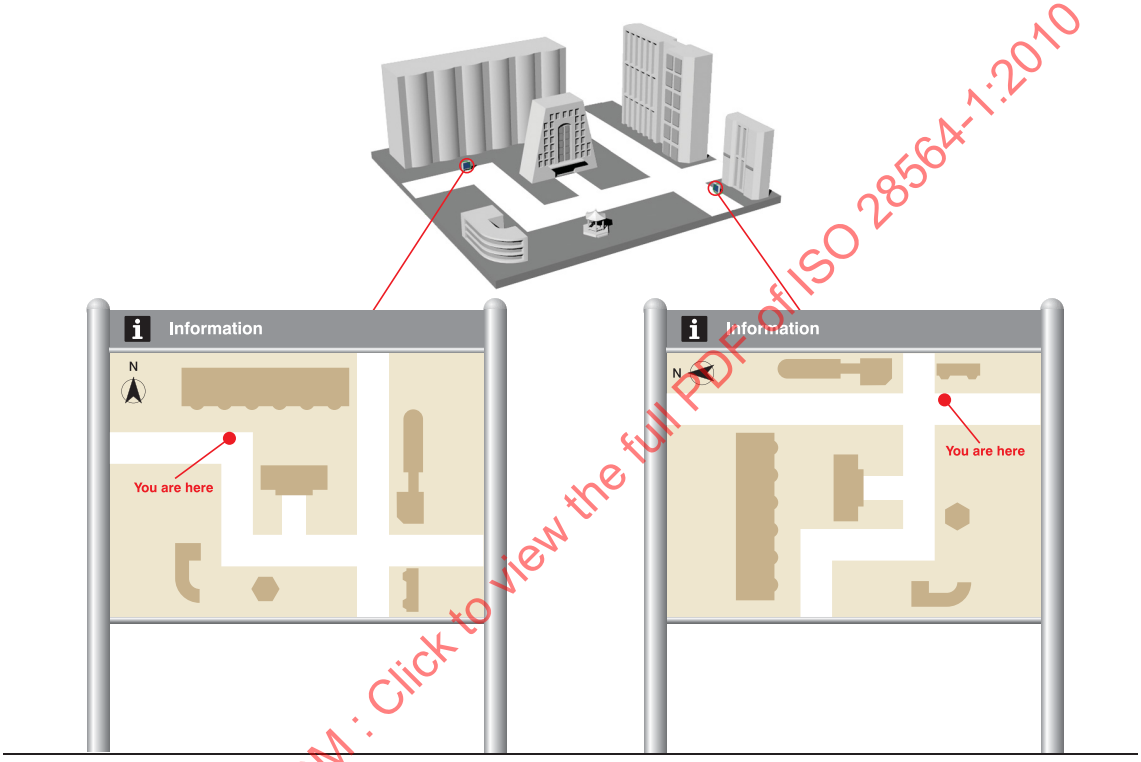


Figure B.1 — Newtown information

Annex C
(informative)

Performance tests for location plans

C.1 General

A laboratory test and a field test are outlined in C.2 and C.3. Interviews can also be used to obtain information about both the design and use of a location plan. Two procedures for carrying out interviews are suggested in C.4 and C.5. These cover

a) interviews conducted at the point of contact with a location plan to determine the users' perception of the design, and

b) interviews conducted elsewhere, especially at the point of exit from the area shown, to determine whether people saw a location plan, understood it, acted upon it, found it useful or not, or if they would have preferred an alternative.

C.2 Laboratory test

The following are the steps required for carrying out a simplified laboratory test of a location plan to determine whether participants can use it to find their present location and popular destinations, quickly and accurately.

a) Prepare a visual presentation of the location plan. This presentation may be paper or electronic, as resources permit. Position a chair and the display so that, for the viewer sitting in the chair, the size of the image subtends the same visual angle as the actual location plan would in its installed position. If it is required because of the size of the display, obtain a suitable pointer for use by the participants.

b) List as many common destinations within the location plan as possible. Carefully choose three or more of these to use in the testing. They should be destinations that are often used but possibly difficult to find. The number chosen will depend on the time available with each participant.

c) Obtain the cooperation of at least six people who are representative of potential users of the location plan but who have never seen the location plan before.

d) Seat each person in turn in front of the blank screen if the display is electronic, or in front of the covered paper display and say, “I'm going to show you a location plan and I want you to indicate where you are on the location plan. Is that clear?” Explain further, if necessary, and, if appropriate, show each person how to use the pointer.

e) Present the location plan and note any hesitation, comments, confusions or other difficulties in identifying the “You are here” designator.

f) For each of the three chosen destinations in turn, repeat the procedure, beginning with the blank screen or covered paper display. Each time say, “Now, please point to xxx” (where xxx is the desired destination). Note any hesitation, comments, confusion or other difficulties in identifying each of the destinations as they are presented.

On completion of the testing, the notes and observations should be used to guide revisions to the location plan.