Chapter 2

Evaluation of visitability of public urban places

Henk Voogd

2.1 Introduction

People are different with different abilities and with different perceptions of difference. It is increasingly recognised in geography and planning that this must have consequences for the way urban spaces are considered (e.g. Butler and Parr, 1999; Imrie and Hall, 2001). Accessibility is for many disabled persons, who otherwise fear social exclusion, a human rights issue (Young, 1990). When a built environment is accessible and hence visitable by all people, it benefits everyone – not only disabled persons but also people with buggies, children, and elderly with or without luggage, shopping trolleys, and walkers. By visitability is meant here the availability of a continuous accessible path of travel for all people between public areas. Individual access to the built environment without the assistance of someone else is a basic civil right of all individuals. Evidently, urban planners and all others who help in shaping the built environment should have people of all abilities in mind.

Basic elements of a visitable site, i.e. a place accessible for all people, include the following (e.g. Wijk et al., 2001):

- Accessible parking spaces (including some that are van accessible), with spaces of appropriate aisle widths to enable a person with a wheelchair or scooter to move into and out of a van or car;
- Accessible parking spaces provided closest to the entrance of a building or buildings;
- Appropriately sized kerb cuts and ramps;
- Appropriately marked crosswalks and signage;
- Exterior routes, with appropriate surfaces, which must provide unobstructed circulation to all relevant areas;
- Connections between all relevant areas, including connections to adjacent sites.

How can the ‘visitability’ principle be implemented? The basic elements

mentioned above suggest that it is a simple matter of applying the right technical norms and standards, of evaluating the city areas by means of such a checklist and then by correcting the undesirable situations. However, practice in many cities teaches us that this is not yet, or seldom, happening because of conflicting interests.

Cities can be seen as a conglomerate of public and private spaces with different access to different people. Some people have access to all public spaces; others have only limited access, due to the fact that they cannot overcome the barriers that surround these spaces. An example is given in Figure 2.1 (source: Venice Tourist Office).

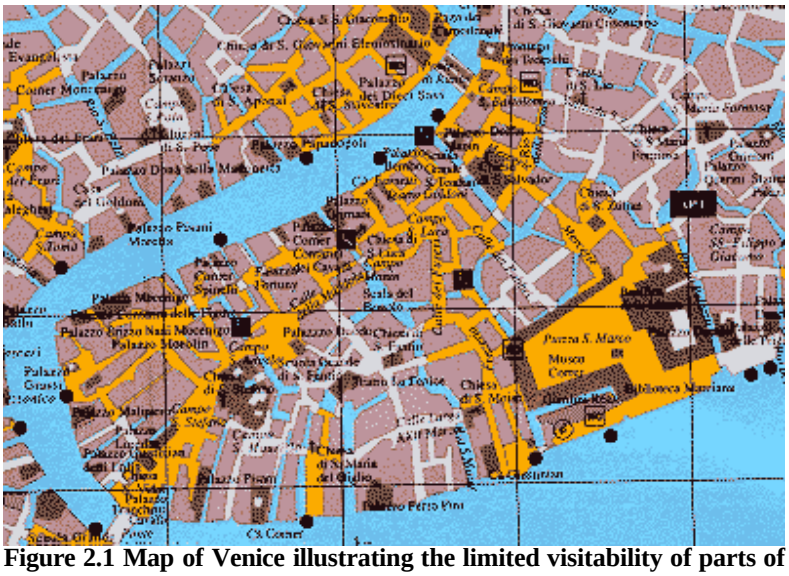

Figure 2.1 Map of Venice illustrating the limited visitability of parts of the city for wheelchair visitors, denoted by light streets.

This chapter analyses some approaches for evaluating visitability. Although many more people may benefit from a good accessibility of places, e.g. people with buggies or heavy luggage, disability activists and their supporters have set the tone of this discussion. In the next section their argument will be briefly outlined. In addition, attention is paid to the criteria by which visitability can be evaluated if a checklist approach is followed. Currently available technologies, like GIS, make it possible to arrive at 'tailor-made' spatial evaluations whereby different impairments can be taken into account. However, such an approach also has some drawbacks.

There is general agreement nowadays that a proper evaluation of the visitability of a site can only be done in an 'inclusive' way, i.e. by using the expertise of those who have one or more impairments. However, little is known about the most effective way of using this expertise. In this paper a proposal is made for increasing our professional

knowledge about this problem by applying a 'cluster evaluation' (e.g. Barley & Jenness, 1993) of experiences in many different cities.

2.2 Visitability by legal arrangements

If we define a 'disabled' person as somebody who needs auxiliary equipment in order to compensate for bodily shortcomings, it would fit to a majority of the population. Many people need glasses, contact lenses or false teeth to 'survive' in this modern society! Although they would be very handicapped without their equipment, we generally do not call them 'disabled'. However, there is no fundamental difference between spectacles and wheelchairs, provided that the environment allows the use of this equipment. Both wheelchair and spectacles attempt to reduce the consequences of impairment. This illustrates that the term 'disability' can have many different interpretations and is therefore hard to define in an unambiguous way (see also Oliver, 1996).

In practice very often a medical definition is given, i.e. referring to a defective limb, organism or mechanism of the body. The message generated from this definition is, according to sensitive disability activists, that the 'disabled' person is inferior to the 'abled' person, thereby neglecting that 'abled' persons also have many different capacities. Many authors therefore recognise that the term 'disability' is a social construct (e.g. Cleeson, 1998, 1999; Finder and Jacobs, 1998; Butler and Parr, 1999). For instance, dyslectic people would never have been judged as disabled in the 'paperless' Middle Ages, while in the same period smart people with 'two left hands' probably would have been considered as very handicapped. A disability is therefore often defined as the disadvantage or restriction of activity caused by a contemporary social organisation which takes no or little account of people who have physical impairments and thus exclude them from the mainstream of social activities (cf. Buttler and Bowly, 1997, p. 411). This is called the social definition of disability, which has stimulated the thinking about visitable environments.

Disability activists in the United States have been very successful in the past in creating legislation that makes public spaces in cities accessible to disabled people. The ADA (*Americans with Disabilities Act*) of 1990 is seen by many as an example for the rest of the world. The same is true for the Australian DDA (*Disability Discrimination Act)* of 1992. However, so far there have hardly been proper follow-ups in other 'civilized' countries. The British DDA (*Disability Discrimination Act)* of 1995, for instance, has been criticized for its lack of 'teeth' (e.g. Gooding, 1996; Imri and Hall, 2001). In the Netherlands state concern is still largely focused on providing support for elderly and dependent citizens. The focus of the Dutch *Wet Voorzieningen Gehandicapten* (Disability Facilities Act) of 1994 is on providing free auxiliary equipment and mobility facilities such as cheap use of door-to-door taxis. However, no

special legal regulations exist yet with respect to the visitability of the built environment. It only takes the form of a handbook with recommendations and advice to developers and architects (i.e. Wijk et al., 2001). The implementation of access is left at their discretion.

The legal model of rights like ADA and DDA serves as a necessary framework for implementing some essential goals with respect to improving the lives of disabled persons. But it also has its limitations as Clear and Gleeson (2002) outline. They argue that rights-based legal frameworks have not significantly challenged the systems and practices that oppress disabled people and create exclusionary social spaces of work, community and home life. Without fundamental change in the material conditions of people's lives, oppressive systems are left largely untouched. Mental changes of the 'abled' population should be aimed at, which obviously needs time. Oppression of disabled is more the result of 'ignorance' of differences than 'unwillingness' to cope with differences. Communicative planning approaches may therefore be essential for an inclusive treatment of disability issues (see also Alaksen et al., 2002).

Table 2.1 Visitability barriers in urban areas, in rank order according to Matthews and Vujakovic (1995)

Rank	*Barrier*
1	High kerbs and/or lack of dropped kerbs
2	Steep gradients or ramps
3	Uneven paving slabs
4	Rough or cobbled surfaces
5	Slippery surfaces
6	Narrow pavements
7	Street furniture poorly placed, restricting access
8	Congested pavements
9	Steps without adjacent ramp
10	Dropped kerbs on roads not adjacent to each other
11	Difficult camber on pavement
12	Deep gutters along roadside, impeding crossing
13	Busy roads
14	Lack of resting places on slopes and ramps
15	Handrails not provided on ramps
16	Insufficient designated road-crossing places
17	Drains near to dropped kerbs
18	Cars parked adjacent to dropped kerbs
19	Raised manhole covers at road-crossing points
20	Poor pathway maintenance leading to problems of fouling by dogs and litter

2.3 Visitability by checklist evaluation

The legal model is especially applicable to national policy-making. At the local level the visitability of sites can be improved by adopting a planning approach based on checklist evaluation. Matthews and Vujakovic (1995) have studied the barriers of site access and mapped the experiences of wheelchair users. This resulted in a list of barriers ranked by importance (see Table 2.1).

The list of barriers in Table 2.1 can be used as criteria for evaluating the quality of a site or route for wheelchair users and for developing an urban visitability improvement programme. A very interesting example of such an approach is the MAGUS project of the University College Northampton (see Beale et al., 2000, 2001). Here the abbreviation MAGUS stands for 'Access with GIS in Urban Systems'. Also in this project wheelchair users were asked to mention the most important barriers: see Table 2.2.

Table 2.2 Barriers and the impedance scores by type of wheelchair user in MAGUS model, low scores represent high levels of impedance.

Rank	Barrier	Manually Assisted	Self Propelled	Motorised
1	Steps	1	1.17	1
2	High kerbs	2	2.25	2
3	Deep gutters	3.42	3.83	6
4	Gravel surfaces	5.71	3.75	4
5	Lack of dropped kerbs	5.14	5	4
6	Narrow pavements (< 1 m)	7.28	6.83	8
7	Steep gradients	6.57	6	7.5
8	Adverse cambers	6.57	8.08	7.5
9	Poor pathway maintenance	8.14	8.41	7
10	Cobbled surfaces	9.14	9.67	8

Source: Beale et al. (2001).

In the MAGUS project the barriers of Table 3.2 are used as mapping criteria in a Geographical Information System (GIS). This results in so-called access surfaces. By

means of an opinion poll among 400 wheelchair users, the researchers of MAGUS used the average rankings of the importance of barriers as weights. In addition, six types of surfaces were tested and also given an impedance score: concrete (1), paving (1.2), tarmac (1.3), brick (1.6), grass (6), gravel (8). The quality of a kerb has been determined by regression analysis of the appreciation of wheelchair users and nine variables of a kerb, i.e. height, surface, slope, camber, orientation, width, bull nose, brick runner and curvature. By using network analysis tools from the GIS ARC/INFO programme, 'least impedance' routes are calculated based on minimizing barrier weightings associated with a route. The following formulae have been used (cf. Beale et al., 2001):

$$Impedance = 35m(10 - i) + Frl$$
$$Uphill = mlTanT + Frl$$
$$Downhill = mlTanT - Frl$$

where: m is the wheelchair users' weight (on average 75 kg)
l is arc length
$TanT$ is slope in decimal degrees
i is barrier impedance.

In this way GIS enabled access surfaces to be transposed into routes that both advised about levels of impedance and which offered the capability for informed decision-making by wheelchair users and urban planners.

By comparing Table 2.1 and Table 2.2 the conclusion can be drawn that a number of aspects are dominant in the evaluation of visitability of sites for wheelchair users. All barriers mentioned in Table 2.2 also appear in Table 2.1. However, the rankings differ. For instance, a comparison shows that in the MAGUS survey 'steps' were seen as the most important barrier, whereas the earlier investigation of Matthews and Vujakovic (1995) ranked this at the 9th position. This is remarkable and it illustrates once again that rankings based on opinion polls are strongly timeand place dependent , and thus difficult to generalize. From a theoretical point of view, this is a critical element in the MAGUS model, that is calibrated by means of average rankings of opinions.

Another assumption behind MAGUS, however, seems more important. The quality of routes is defined as the aggregate of the impedance scores. This means that a so-called compensatory evaluation model is used, i.e. a low score in a route - implying high impedance - can be compensated by a few high scores further on the route. Thus a route with scores of 9 + 8 + 1 = 18 can be recommended as better that a route with scores of 5 + 5 + 5 = 15, while the first route, because of steps, is inaccessible while the second route is accessible but with great difficulties. It is unclear how MAGUS is solving this theoretical problem.

A similar problem exists with respect to the length of a route. Because the quality

of a route is determined by an additive relationship between impedance scores, long routes are 'by definition' less attractive than short routes. As an illustration: 9 + 8 + 1 = 18 is more attractive than a route consisting of 4 + 4 + 4 + 4 = 16, whereas a wheelchair user may consider the second route as the *only possibility* to visit a site if he or she is unable to climb steps (denoted by impedance score 1).

No doubt, the great strength of a GIS approach like MAGUS is that is forces people to think about urban barriers and the subject of visitability. It is an excellent tool for illustrating those aspects of the built environment that need improvement. However, apart from providing that kind of substantive information, it is also of crucial importance that factors are revealed that hinder or stimulate visitability. In other words, identifying design feature that facilitate access for those who must use wheelchairs can encourage actors with power in planning processes to arrive at more visitable cities.

2.4 Visitability by cluster evaluation

A GIS approach attempts to make a copy of the built environment. However, in order to improve the environment for planners it is more important to know how to cope with the processes that determine a built environment. As Imrie and Hall (2001) illustrate, there are many (often implicit) reasons why developers and others responsible for the built environment do not want to assist in making places visit-able for everyone. The cost is one of the most important arguments. Social opposition for other reasons is not unlikely. For example, Dear et al. (1997) conclude that:

> "One of our saddest professional experiences (…) is to encounter community opposition of such virulence that it prevents much-needed services from being provided to disabled people. (…) we understand that the establishment of a facility for people with disabilities is at base a form of boundary transgression, threatening to break down the symbolic and spatial barriers between normal and abnormal and eroding the social distance which supports the diametric opposition between self and Other." (Dear et al.,1997, p. 474).

However, in many civilized countries we see a growing attention among public decision-makers to include the disabled in their policymaking. For instance, each municipality in the Netherlands is obliged by law to have an advisory council on disability affairs. This council must give invited and uninvited advice to local authorities about all policies that may affect disabled persons. It would be very interesting to evaluate the results of these councils in terms of making cities more visit-able.

One way to approach this is to perform a so-called cluster evaluation (Barley and Jenness, 1993). This approach has been developed by the Kellogg Foundation for assessing its projects (Kellogg Foundation, 2001). The information collected through cluster evaluation is originally to enhance the effectiveness of grant making, clarify the strategies of major programming initiatives, and inform public policy debates. Cluster

evaluation deals with the evaluation of groups of projects. It is a means of determining how well the collection of projects fulfils the objective of systemic change. Stakeholder participation is seen as essential, which implies for disabled people that an inclusive approach is followed. The focus of cluster evaluation is on ascertaining lessons learned, not on judging individual projects. It is therefore different from ex post project evaluation.

The basic question to be answered by cluster evaluation could be 'how do disability councils affect public policy-making?' or 'how is the organisation of these councils – e.g. its position in local networks – affecting its effectiveness?' or 'which sectors of public policy have been influenced and how and why?' The advantage of cluster evaluation is that participants do not need to fear its results, which is a drawback of many other forms of evaluation (Worthen and Matsumoto, 1994).

A cluster evaluation of local visitability policy could also be usefully performed in an international setting, since its prime objective is to learn lessons about systemic change. It would be very interesting to start an international comparison of municipalities with respect to their disability policies, notably the visitability of their cities.

2.5 Some concluding comments

The population does not consist of 'the average person' but of different people with different functional abilities (see also Fincher and Jacobs, 1998). This should lead to a different way of developing and presenting planning proposals as well as consequential evaluations.

Generally the needs of people are changing when they grow older, leading to different consumption patterns with different implications for urban planning and land use. As our life expectancy increases, needs to be met by the built environment change. We are more likely to experience disability as a result of aging and live with it for many years to come. Our environment, however, may not be so easily or inexpensively modified to suit our changing needs.

Evaluation of visitability not only implies gaining insight into substantive urban barriers, but also into organisational barriers. It is therefore crucial to obtain a better understanding in processes and instruments that improve the quality of life of disabled persons. This paper has discussed three fundamentally different approaches to improve access of urban spaces, viz. the legal approach focussing on prescribing standards and norms for the built environment, the checklist approach focussing on mapping and physically avoiding urban barriers, and the cluster evaluation approach focussing on organisational learning and systemic change.

The examples in this paper, however, were mainly limited to one type of disability, viz. the wheelchair user. Obviously, there are other kinds of impairments that should

influence the built environment. People with visual impairments, for instance, may also benefit from the removal of the barriers mentioned in the previous section, but they additionally need other considerations such as a signage system that is adapted to their handicap (see also Golledge, et al., 1996; Imrie, 1996). It is therefore essential that not only wheelchair users are the subject of study, as has been the focus in this paper, but also that other minority groups with special environmental requirements are taken into consideration.

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