Wayfinding design: logic, application and some thoughts on universality

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Wayfinding, presented as a major design issue, concerns the spatial organization of a setting, the circulation system and architectural as well as graphic communication. The layout and the circulation routes define the wayfinding problems people will have to solve while architectural and graphic communication provide the user with the information to solve the imposed problems. This paper gives an overview of the approach and the underlying logic of wayfinding design and reflects on the question of universality and its limits.

Keywords: architectural design, environmental design, graphic design, psychology of design

Disorientation and getting lost are commonly very frustrating experiences for travellers or visitors who are trying to reach a specific destination, be it for work, shopping, health care or recreation. Some users in such situations are plagued by a feeling of incompetence which they ascribe to a missing 'sense of orientation', others, blame the architects for designing confusing settings and the graphic designers for providing unintelligible signage. Whoever the target of accusation, the experience of getting lost is unpleasant, irritating and affects people's general attitude towards the setting. Nobody appreciates architectural and graphic niceties in settings marred with wayfinding difficulties.

It has been noted by some corporations that the frustration caused by wayfinding difficulties not only provokes a negative appreciation of the physical setting but that it also affects the perception of the corporation itself and the services offered in that setting. Not surprisingly, facilitated wayfinding has recently become a public relations and a promotional feature for shopping malls, museums and even health care centres[1].

Wayfinding also has functional importance in buildings. The ease of

1 Carpman, J R, Grant, M A and Simmons, D A *Design that cares*, American Hospital Association, Chicago, IL (1986)

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circulation within a building, the time saved by not having to consult confusing information displays and even the liberation from time consuming direction giving by staff, are issues of building efficiency and have financial impacts that, admittedly, are not easy to calculate.

Accessibility is another major issue related to wayfinding. People do not frequent settings in which they know they will get lost if they can help it. The idea of creating labyrinthine shopping centres so that people would spend more time wandering around and potentially shop more, has been rejected by contemporary planners thanks to numerous complaints and negative assessments of commercial productivity. Wayfinding difficulties tend to be exasperated for people with physical impairments and in particular, people with sensory impairments. These difficulties can amount to architectural barriers of a psychological nature which in terms of reducing accessibility are just as obstructive as physical barriers.

Building safety also has been associated with wayfinding. Emergency evacuations are much more difficult in confusing settings. Wayfinding decisions have to be made quickly and problem-solving behaviour may be confounded by anxiety induced stress. It has been repeatedly observed that people in emergencies tend to use familiar routes rather than rely on fire exits exclusively reserved for these situations[2].

Wayfinding has only recently been recognized as a design issue of importance. At the same time, some authors such as Carpenter[3], have warned designers of using wayfinding as a new buzz-word. In this paper we will introduce wayfinding as a distinct design issue, outline the logic of the design approach and illustrate that wayfinding design is essentially congruent with universal design.

1 *Wayfinding design*

Wayfinding design concerns all features of the built environment which are related to the purposeful circulation of people and their ability to mentally situate themselves in a setting. These design features include spatial layouts, architectural features related to circulation and graphic displays including audible and tactile supports.

1.1 *The premise of wayfinding design*

People do get lost in complex public settings, in fact, many people regularly get lost. Some designers, be they architects or graphic designers, will blame the users for not having a sense of orientation, for not paying enough attention to signs, for not seeing things when they are evidently there and for not understanding the most simple messages, not to mention

2 Canter, D *Fires and human behaviour*, Wiley, Chichester, UK (1980)

3 Carpenter, E 'Wayfinding: design breakthrough or trendy buzzword?' *Print* Vol 43 No 1 (1989) 92–163

people's inability to read map displays. This rather common attitude is a futile way to think about wayfinding design.

We subscribe to the principle that people are not here for designers but rather designers are here for people. A French cabaret artist had a rather illustrative sketch in which a client goes to his tailor in order to try on a newly made jacket. Looking in the mirror, he notices a fold just below the left shoulder blade. The tailor tells him 'Oh, if you move your left shoulder forward a bit the fold will disappear, see . . .', 'yes', says the client 'by moving my shoulder forward, the fold does disappear, but . . . there is a new fold further down on the right side . . .', the tailor replies 'now, move your right hip up a little bit . . .', 'yes', observes the client, 'if I move my right hip up that fold disappers . . ., but there is now a slight unevenness in the lower centre . . .', 'you just have to twist your body a little bit to the left . . ., see, that unevenness is also gone'. The client, who could not see any more faults, paid the tailor and left. On his way home, wearing the new jacket, he just happened to overhear one fellow whispering to his friend 'did you see that poor misshapen guy . . .', 'yes' replied the other, 'but did you observe how well his clothes fit, he must have an excellent tailor'. To apply this to wayfinding, we have excellent designers, but who has not turned out mentally 'twisted' after trying to follow signs, to read upside-down maps or trying to understand the organization of complex settings.

The premise of wayfinding design is to plan for people's behaviour in the real setting, that is, to design for their ability to perceive, select and understand information when faced with dense and stimulus rich environments, to design for their ability to understand the spatial characteristics of settings and their movements through them and finally, to design for their ability to develop decisions in order to reach destinations. The logic of the design approach is derived from the logic of wayfinding behaviour.

Wayfinding design is not about the creation of simple, not to say simplistic buildings, but about the design of architecturally interesting, wayfinding efficient buildings that are well articulated. Wayfinding criteria are not constraints but incentives to innovative design solutions.

1.2 Conceptualizing wayfinding in terms of spatial problem solving

The concept of wayfinding was developed in the late 1970s[4,5]. It was preceded by the notion of spatial orientation, which referred to a person's ability to mentally represent the spatial characteristics of a setting and the ability to situate him or herself within that representation. The psycholo-

4 **Downs, R and Stea, D** *Maps in mind*, Harper and Row, New York (1977)
5 **Passini, R** 'Wayfinding: a study of spatial problem solving' Ph.D Dissertation, Pennsylvania State University (1977)

ability to situate him or herself within that representation. The psychological term used to describe the spatial understanding of settings is the cognitive map. The synonym 'spatial cognition' is also used by psychologists and 'image' is most commonly used by planners.

Wayfinding does not limit itself to the person's representation of space (cognitive map) but includes all the mental processes which are involved in purposeful mobility. Wayfinding is a generic concept which incorporates the notion of spatial representations. Defined in terms of spatial problem solving, wayfinding is composed of three interrelated processes: 1) decision making and the development of decision plans also called action plans; 2) decision execution, transforming decision plans into behaviour at the right time and place along a route; and 3) information processing, comprising environmental perception and cognition which provide the person with the information necessary for the two decision-related processes[6].

People engage in decision making when they travel on nonfamiliar routes. Each behaviour can be associated with a decision and each decision is based on information which can be directly perceived within the environment or which can be obtained from memories of previous experiences, including cognitive maps.

If all decisions for a given trip are recorded and if their logical 'in order to' relations are established- 'in order to do A, I have to do B'—one finds that decisions are structured into hierarchies. At the top of the hierarchy is the original task to reach a desired destination. At the bottom of the hierarchy are the decisions leading directly to behavioural actions like 'opening the door', 'entering a hall', 'following a corridor'. In between are the higher-order decisions linking the original task (the objective) and the behaviours. The structured representation of decisions associated with a given wayfinding task is called a decision plan: it represents all the decisions necessary to solve a wayfinding problem and it also indicates why decisions were made. In other words, it expresses the logic of the wayfinding solution.

A familiar route only requires decision execution. Decision plans, because of their hierarchical structure, are easily retained. The execution process can be conceptualized in terms of a perception-action feedback model. Each decision is composed of a behaviour (i.e. to go up, to look at, to turn right at) and a place characteristic (i.e. the stairs, the map display, the intersection). If the place characteristic is perceived in the real setting the behaviour is executed, if the person perceives no equivalent, the be-

6 Passini, R *Wayfinding in architecture* Van Nostrand Reinhold, New York (1984)

haviour cannot be executed and the decision becomes a task for which a new plan must be developed.

1.3 Posing the question of universality in general terms: idiosyncrasy in problem solving (decision making)

Decision making is notoriously difficult to model when it applies to choices based on many criteria and especially when personal values are involved[7]. Choosing from among different types of residences or cars are examples of decisions in which idiosyncrasy plans a major role. In general terms, this is not the case for wayfinding. The issue of choosing among various routes, in which subjective factors may play a part, is not central to wayfinding design. Each major route to a destination should be wayfinding efficient and should display appropriate information.

Universal design presupposes a certain similarity of wayfinding decisions made by users on a given route when trying to reach a destination. Our recording of decision plans shows that people, indeed, tend to develop similar plans in settings in which adequate information is provided. The solution to a problem is mostly determined by the available information. Ambiguous settings also lead to more variance in decision plans. Variance between decision plans also seems to be greater for different settings than for different subjects in the same setting. Although this first principle of universality applies in general terms, it will have to be nuanced as we look at wayfinding design in more detail.

2 The spatial component of wayfinding design: spatial organization and the circulation system

In creating the spatial composition or organization of a setting and the ensuing circulation system, the architect also determines the nature of the wayfinding problems future users will have to solve. The impact of the first conceptualization of a building layout has major consequences on wayfinding and on all subsequent phases of wayfinding design. Wayfinding design, thus starts with the preliminary architectural sketches.

What are the criteria for wayfinding efficient building layouts? How does one establish the difficulty of a wayfinding task? One might think of calculating the number of decision points or intersections as a first measure of wayfinding difficulties. However, for the average gifted person the real difficulty is not so much in making a decision as in obtaining the relevant information. Part of this information relates to the spatial organization of the setting and the circulation system. If people fully understood how a setting was organized (what is where) and if they

7 **Sälsä, J and Gärling, T** 'Sequential spatial choices in the large scale environment' *Environment and Behavior* Vol 19 No 5 (1987) 614–635

fully understood the circulation system (how to get there), decision making difficulties would be greatly reduced.

A first wayfinding design issue at this stage is how to design a setting so that people can understand its spatial characteristics. In order to shed some light on this issue we need to introduce some cognitive aspects of spatial representation.

2.1 *Spatial representation: typology in cognitive mapping*

Two types of spatial representations ought to be distinguished: the representation of a space perceived from one vantage point and the representation of a space that cannot be seen from a vantage point alone but has to be composed of a number of views perceived at different points in a setting. Cognitive maps refer to the latter. Combining different views, they require a mental structuring process. The representation of a city or a complex building cannot usually be obtained from a single vantage point but it has to be structured into an ensemble from independent views.

Research, conducted mostly in the 1970s and early 1980s, explored map typology and proposed the existence of two types of cognitive maps: 1) a sequential egocentric map in which space is structured as a function of a person's movement through the setting; and 2) a coordinate or survey map in which space is structured according to an identified organization principle[8]. Young children typically operate on the basis of sequential maps. Only in middle to late childhood do they acquire the ability to structure coordinate maps[9]. The same rules apply with respect to microgenesis. People in unfamiliar settings will tend to develop sequential maps before coordinate maps, although personal differences are quite important in this respect. It has also been shown that certain settings, such as complex underground metro stations, only lead to sequential maps[10].

Basic cognitive structures are understood to be common to all human beings, although the level of performance with respect to cognitive operations will vary and people will have preferences in dealing with particular issues such as spatial representations (cognitive styles). Piaget's unitary theory of cognitive development[11] also presupposes invariable cognitive structures supporting the idea of universal design.

2.2 *Design features facilitating cognitive mapping*

Cognitive mapping, as we have indicated, is a mental structuring process. A first facilitating design feature is to assure that the units to be structured are distinctive. One of the main reasons why labyrinths are not spatially understood is the absence of distinctive units. Uniformity and repetition is

8 **Appleyard, D** 'Styles and methods of structuring a city' *Environment and Behavior*, Vol 2 No 1 (1970) 100–118

9 **Hart, R and Moore, G** 'The development of spatial cognition: a review' in *Image and Environment: Cognitive Mapping and Spatial Behavior*, **R Downs and D Stea** (eds), Aldine, Chicago, IL (1973) 246–288

10 **Proulx, G** 'Orientation spatiale dans un espace souterrain', *Proceedings of the Environmental Design and Research Association, EDRA 18* (1987) 68–73

11 **Piaget, J and Inhelder, B** *La psychologie de l'enfant*, Presses Universitaires de France, Paris (1966)

a sure recipe for disorientation. In his pioneering work, Lynch[12] identified five basic building blocks of cognitive mapping (landmarks, nodes, paths, edges and districts). He argued that if cities were legible in terms of these five blocks they could also be 'imageable', meaning that they would be easily mapped. The same argument can be made for buildings.

A second facilitating design feature for cognitive mapping is the presence of an identifiable principle that organizes, not only individual floors, but the three-dimensional characteristics of a setting. In our recent work, we have proposed two basic formal organization principles[13]. A first principle is based on geometric laws establishing spatial relations such as symmetries, hierarchies, orthogonal networks etc. These laws, if they are understood, provide the user with a rule to mentally structure settings into coordinate maps. A second principle is based on geometric forms or Gestalt such as a T, L etc. Many buildings have such simple geometric forms. Given that they describe spatial relations independent of a person's movement along a route, they also lead to coordinate maps. The two principles are not exclusive. Settings organized according to a geometric law, often also express a strong geometric form. However, geometric forms have to be relatively simple in order to be effective. We found that interconnected buildings, typical of large hospitals and educational settings, are generally not understood as forms.

Some settings, by choice or chance, are not organized according to a principle. One might think that such settings cannot be mentally mapped. But this is not quite true. Even arbitrary paths can be mapped if the travellers encounter prominent landmarks. These landmarks serve as mental anchor points for near-by spatial features. The ensuing maps, if they are based on landmarks along a route, will necessarily be of a sequential nature.

People who tend to form sequential maps might have more difficulty organizing spaces in a coordinate fashion. Those who might not understand a geometric law underlying the organization of a layout might still perceive a geometric form. If they are not able to perceive such a form, they may map the setting according to anchor points as if it was composed of an arbitrary path. This indicates the advantage of organizing settings according to multiple principles and the necessity of providing anchor points as a last resource, especially for people whose preferred wayfinding style is of a sequential nature.

The requirement for a clear and well expressed organization principle increases with the size and the complexity of a setting. We were able to

12 Lynch, K *The image of the city*, MIT Press, Cambridge, MA (1960)

13 Arthur, P and Passini, R *Wayfinding, people, signs and architecture*, McGraw Hill, Toronto, Canada (1992)

show that people in complex layouts tried to find an organization principle even if that layout was ambiguous. When they thought they had identified a principle, they mentally organized the setting accordingly, even if it meant creating major distortions to fit the principle[14].

These observations do not contradict universal design, but they specify the conditions that have to be met in order to make it possible.

3 *The communication aspect of wayfinding design: architectural and graphic communication*

If the spatial organization of a setting and the circulation system determine the nature of the wayfinding problems future users will have to solve, environmental communication provides the information necessary to solve the problems.

Wayfinding difficulties are usually explained by inadequate signage. Quite often, though, the deficiency is architectural. As we have seen in the previous section, wayfinding difficulties might be due to a confusing layout that cannot be understood and no signage can fully remedy that shortcoming. Wayfinding difficulties might also be due to poor articulation of architectural features such as the indication of entrances, exits, horizontal paths, stairs, lifts and escalators, landmarks serving as anchor points and the circulation system. We feel that these architectural wayfinding cues are not only easy to convey, but that they are essential features of architectural composition and should not require signage support. Signs indicating lifts or entrances are manifestations of architectural inadequacies.

In terms of wayfinding communication, designers have to respond to three major questions: what information should be presented, where and in what form.

3.1 *The content of wayfinding information and its location determined by decision plans*

A key rule of environmental perception is that information is not seen because it is there but because it is needed. The built environment is complex and contains much more information than a person can absorb at a given moment. The person, in order to cope with complexity, has to select. During wayfinding, people will select that information which is relevant to their task. An analysis of decisions made by subjects who tried to find a destination, showed that they tended to perceive information when it was directly relevant to the behaviours associated with an immediate task and did not perceive information irrelevant to the immediate task even if it might be useful later on.

14 **Passini, R** 'Spatial representation: a wayfinding perspective' *Journal of Environmental Psychology* Vol 14 (1984) 153–164

The criterion of relevance is contextual; it always refers to the decision plans people develop to solve their wayfinding problems. This important observation can be illustrated by a study we conducted in a large hospital in Montreal that incorporates several interconnected pavilions built on a mountain slope. The access from the car park at the back of the 'Women's Pavilion' is considered by most people as being the main entrance although, because of the slope, it is four levels above the official ground floor. The maternity ward is on the second floor. Many people who use this entrance to go to the maternity ward go up when in fact they should go down. The hospital has tried all the tricks of the trade—signs with one foot high letters reading 'floor 4', coloured lines on the walls and on the floor pointing down to the maternity ward—but many visitors still went up. However ludicrous this seems, it makes wayfinding sense. In the decision-making process, people were looking for information to go to the second floor; thinking that they were on the ground floor, all they had to do was to find a staircase; the other information could be ignored. This way of functioning, which in this context might be deemed inadequate, is nevertheless fully appropriate in other contexts. Selective perception is in fact a functional necessity whenever people have to cope with an excess of information.

Both, the content and the location of information have to be determined with respect to people's wayfinding decisions. However, designers must not only take into account individual decisions but the overall decision plan. The plan, as we have already indicated, contains the rationale as to how decisions are interconnected, that is, the plan expresses the strategy for solving wayfinding problems. The decision plan, thus, also contains the logic linking individual information units into a wayfinding support system.

In retrofitting buildings, the decision plans for efficient wayfinding are usually given by the major circulation routes. Design difficulties arise if the circulation system is ambiguous. The designer may then have to conceive an information support system favouring a wayfinding strategy that is most appropriate for the context. When planning new settings, the decision plans of the future users can actually be predetermined, which points again to the advantage of considering wayfinding issues from the initial design stages.

3.2 *The form of information displays determined by the users' perceptuocognitive behaviours in complex settings*

The form aspect of information displays has always interested graphic designers[15,16]. Much work has gone into the development of letter type,

15 McLendon, C B and Blackistone, M *Signage: graphic communications in the built world*, McGraw-Hill, New York (1982)
16 Wildbur, P *Information graphics*, Van Nostrand Reinhold, New York (1989)

spacing between letters, upper- and lower-case letters, proportions between letter ascenders and descenders etc. Probably more important for wayfinding are issues of legibility of typographic information with respect to criteria such as: distance, angular distortions and background contrast. The use of typographic versus pictographic signs, the use of orientation maps, panoramic views, interactive video displays and electronic directories have also been described by Arthur and Passini[13].

Less familiar to designers are criteria emerging from peoples' perceptuocognitive behaviours in the built environment. One particularly important issue is the notion of information overload, which may best be described as a mental state inhibiting the perception and treatment of information. This state is the ultimate coping device for reducing information input. This response is quite common, particularly in complex public settings, when one is exposed to dense stimulation during wayfinding. However, it is not so much the amount of stimulation that creates information overload—people have developed means to ignore what they do not need—but it is the necessity to check that stimulation in order to extract the relevant information for wayfinding, that results in overload.

Designers can significantly reduce symptoms of overload, if the form and the location of wayfinding information is consistent. People will learn what to look for and where to look for information. This possibility for directed perception reduces the need for scanning and reduces the chance of overload. Authors have proposed systematically reserving communication channels for the exclusive use of public wayfinding signs in buildings[13] and for wayfinding and traffic regulation signs in cities[17].

Information support systems, designed on the basis of perceptuocognitive characteristics favour all users, and again, agree with the principle of universal design.

4 *Special users and special wayfinding conditions*

The question of universal design is more critical when responding to users with physical, sensory and cognitive impairment.

4.1 *Physical, sensory and cognitive impairments*

The evaluation of buildings in terms of wayfinding performance has shown that people in wheelchairs may have physical problems accessing information such as map-displays and in operating lifts or simply opening doors. Major wayfinding difficulties, however, tend to occur in buildings which have a special entrance for wheelchair users. Quite apart from the discriminatory meaning associated with 'special entrances' we found that

17 Carr, S *City signs and lights: a policy study*, MIT Press, Cambridge, MA (1973)

those routes usually required many more decisions and contained less information[18]. Public buildings should be accessible by wheelchair users—in some countries this requirement is a law—and they should be accessible through the main entrances.

Sensory impaired, particularly visually impaired users do have wayfinding difficulties in public settings. An interesting issue was raised with respect to congenitally blind people. Do blind people who have never seen, and who can therefore not have a visual representation of space, still understand space and form cognitive maps. Much research has been directed at answering this question and most researchers agree that even congenitally blind people do have a spatial representation. We were able to show that they are capable not only of sequential but also coordinate cognitive maps and furthermore they are able to perform all spatiocognitive operations necessary for wayfinding[19]. Their difficulties derive not from their own cognitive limitations but from limited access to relevant information. Wayfinding ease can, therefore, be improved by appropriate means of environmental communication.

Given that perception in blind people is essentially proximal, they will typically make more wayfinding decisions than their sighted counterparts. They will require more units of information on a given route. They will also prefer to plan a route in more detail. These requirements are not in contradiction with the requirements for the general population. They simply indicate the necessity for a more articulate architectural expression including textures and sounds.

A building that functions well for the general population will also improve wayfinding for the visually impaired population, however, there remain some special considerations. The crossing of large open spaces is particularly difficult for blind travellers and requires some directional guidance. Special care should also be taken to ensure that the key architectural wayfinding features such as entrances, landmarks, horizontal and vertical circulation can be perceived by nonvisual means.

Our work with dementia has shown the boundaries of universal design[20]. Patients diagnosed at early and intermediate stages of dementia of the Alzheimer type, show marked cognitive wayfinding deficiencies. They tend to have significantly reduced cognitive mapping abilities. They are also restricted in the type of decisions they can master. Decisions requiring memory or inferences are no longer possible while they may still be able to make decisions based on explicit architectural information and directional signs. Maybe the most striking observation is that they can no

18 **Passini, R and Shiels, G** 'Wayfinding performance evaluation of four public buildings' Internal report, *Public Works Canada*, Ottawa, Canada (1986)

19 **Passini, R and Proulx, G** 'The spatio cognitive abilities of the visually impaired population' *Environment and Behavior* Vol 22 No 1 (1990) 91–118

20 **Passini, R, Rainville, C, Marchand, N and Joanette, Y** 'Wayfinding in dementia: an experiment and a new look at design' *Journal of Architectural and Planning Research* (in press)

longer develop decision plans, and can only operate from one decision point to the next. They also have distinct deficiencies in treating information. Among the most striking is their inability to distinguish relevant from irrelevant information which leads to a servile reading of everything along their path. The behaviour of some patients was furthermore determined by prominent stimuli; the opening of a lift door, for example, led some patients to enter the lift even when that decision was totally irrelevant to the wayfinding task. We believe that it is still possible to design appropriate settings so that patients with dementia can be as mobile and as autonomous as possible, however, this involves the creation of a special setting with special wayfinding supports.

The issue of universal design is much more applicable to the large group of situationally impaired users, of which we are all a part at one time or another. Emotional upheaval, anger, joy or stress, as well as fatigue can affect our cognitive abilities. Not wearing glasses, especially around a certain age (which I have approached) seriously reduces vision. Carrying heavy loads or pushing a pram reduces mobility. Nobody is always free of impairment. Universal design principles, by taking into account more exacting user requirements, increase design standards thus satisfying the needs of a larger group of people and situations.

Universal design has the great advantage of not creating artificial barriers between user groups and not ostracizing the impaired population. We believe that it is only for severe cognitive disabilities that specialized environments become necessary.

4.2 Special wayfinding conditions

Wayfinding may be affected in stressful conditions. Emergency evacuations are probably among the most characteristic. Research in this field has resulted in a number of interesting observations. People in emergency situations tend not to panic and do not behave as irrationally as is sometimes thought. They are therefore still in control of their wayfinding abilities. They tend to move towards the familiar, which, for the occasional visitor means that they try to exit a setting from where they entered[21]. In wayfinding language, they try to execute a decision plan they know functions rather than trying out a new route which implies developing a new one. This behaviour has a certain undeniable logic in cases of emergency, when no wayfinding chances should be taken.

Stress, nevertheless, can be an inhibiting factor. Wayfinding under stressful conditions should not require the development of complicated decision plans. Familiarity of routes, direct visual access to exits or

21 **Sime, J** 'Movement towards the familiar: person and place affiliation in a fire entrapment setting' *Environment and Behavior* Vol 17 No 6 (1985) 692–724

directional signage, which can be seen as a decision plan spaced out along a route, are required under these special conditions.

5 Wayfinding design: universality beyond disciplinary boundaries

Throughout this paper we have argued that wayfinding design is not the exclusive domain of graphic designers but also involves architects and, depending on the project, might involve urbanists and landscape architects. The unfortunate habit of consulting a graphic designer shortly before opening day to 'install some signs' should be vigorously denounced. On the contrary, it is suggested that the idea of universal design not only be understood with respect to the users but also with respect to the profession. It can thus be suggested that wayfinding efficient settings require design standards only possible in cases of close collaboration between the design disciplines.