TYPE OF INFRASTRUCTURES AND DESCRIPTION	REFERENCE	ORIGIN/CITY	TARGETED INDIVIDUALS	AIM / OBJECTIVES / HYPOTHESES	JUSTIFICATION	STUDY DESIGN	VARIABLES AND INDICATORS STUDIED	SPECIFICATIONS ON THE FEATURES AND INFRASTRUCTURES	QUALITY
Sidewalk, pedestrian crossing	**Duncan-Jones**, B. (2001). Modern road crossing designs and visually impaired people. *Municipal Engineer*. 145 (2): 185-190.	**London, United Kingdom**	**Visually impaired**	Describe and discuss the most suitable features and the best practices in order to achieve accessible urban environments for visually impaired and blind people.	Many visually impaired people withdraw from going out because they feel they cannot cope with the level of difficulties they encounter when out alone, especially at road crossings and obstacles on the footway.	Descriptive study	Sidewalk kerbs	They must be on both sides of the tactile paving and should have a detectable height (not specified) to delimitate the sidewalk from the pedestrian crossing.	7
							Sidewalk delineation and pedestrian crossing	Street corners that have lowered kerbs are hazardous. If the tactile paving is not provided and the crossing area is made flat and flush with the footway, a blind person who comes across such a crossing cannot tell if they have stepped onto the road or if they are still on the footway.	
							Sidewalk pavement treatment	The tactile paving should be correctly delimitated by the kerb. The most dangerous junctions are the ones where a side road joins a main road at a point where the main road bends: visually impaired people are not able to realize the gradual change of direction. Some crossings have tactile paving correctly laid but the dropped kerb extends beyond the tactile surface so that the area on both sides of the crossing is level and flush with the road. Visually impaired people do not navigate in a perfect straight line. Color schemes that are easy to understand and are consistent with the national system of color-coded tactile paving will help such a person to locate the crossing.	
							Sidewalk urban furniture	Contrast on surfaces by different materials should be ensured, for tactile detection with a long cane and for visual detection by vision-impaired pedestrians. If there is no raised kerb separating granite blocks from the crossing point and the tactile paving then the danger is that the person may learn to perceive the granite blocks as tactile paving or be unable to distinguish between the surfaces.	
							Refurbishment	Low bollards are exceptionally hazardous and could cause people to trip and fall, whereas waist-height bollards would not. Litter bins should not invade the walkable portion of the sidewalk. These elements should not be positioned at a bus stop where people get on and off the bus, or at a street corner where it blocks the view of drivers. Obstacles protruding over the footpath at face level (signs attached to posts, trees, bushes, litter bins hung on lampposts) are very hazardous for blind pedestrians, both cane and guide dog users, as they cannot be warned of obstacles at face level.	
							Maintenance	Serious problems can occur when the design of one crossing interferes with the design of another. The existence of an island in the middle can determine whether it is a single or a double crossing. A blind pedestrian would be confused as the auditory message would give a signal to proceed across the road without stopping, while the tactile paving on the island would indicate the need to stop at the center of the road. Regular inspections of protruding objects should be carried out by highway departments responsible for potholes and the general condition of the carriageways. Also, traffic wardens, who already walk the pavements, could report on the state of the footway.	
								Tactile paving that indicates a controlled crossing should not be installed until the crossing is operational as it may encourage a blind person to use a site that is not ready.	
Sidewalk, ramp, public space, lighting	**York**, S.L. (2009). Residential design and outdoor area accessibility. *NeuroRehabilitation*. 25 (3): 201-208.	**Bloomington, Indiana, United States**	**Neurological impairments**	Describe the characteristics of outdoor environments for them to be accessible to people with complex neurological conditions. Propose technical features related to the infrastructures that make up outdoor environments.	Whether a person lives at home or in a residential facility, access to the outdoor environment can have many positive and therapeutic effects. Opportunities to experience the outdoors provide exposure to fresh air and sunlight, facilitate improved function through physical activities such as walking and gardening, foster socialization, and enable leisure pursuits.	Descriptive study. The technical issues are based on "Accessibility Guidelines for Outdoor Developed Areas" and the seven Principles of Universal Design	Sidewalk design. Running slope, cross slope, width	Running slope should not be greater than 5%, and cross slope should not be greater than 2% (if the running slope is greater than 5%, the sidewalk becomes a ramp); width between 3 and 5ft. A width of 3 ft is the minimum but a 5-ft-wide sidewalk allows wheelchair U-turn. Level walkways reduce the risk of falls and should provide enough slope for drainage.	23
							Sidewalk pavement treatment	Firm, stable and slip resistant. Unitary surfaces, such as asphalt and concrete, are considered accessible surfaces, and paving brick is also compliant with accessibility standards if appropriately applied and maintained. Recycled plastic lumber is colored and designed to have the look of natural wood without the long term maintenance needs of real wood. The edges of the pathway should be flush with the surrounding grade to accommodate use of a wheelchair, scooter or crutches on the path. Depending on the grade and drainage of the pathway, edge protection may be needed to reduce surface material washout. For people with low vision or who are blind, the use of materials with different textures or contrasting colors placed across pathways are used to indicate the presence of entrances, exits, seating, or other key points of information along the route. **Accessible surfaces:** asphalt, concrete, brick, wood, plastic. **Inaccessible surfaces:** sand, gravel. Wood can provide a hard, stable surface but it is subject to the effects of environmental stress. Sand particles are too fine to give support, mulch and woodchips create an unstable surface as they are easily pushed aside by crutches and wheelchairs. Large gravel rocks create an extremely difficult surface on which to maneuver wheelchair tires and crutches.	
							Ramp design. Running slope, cross slope, handrails	Running slope should be 1:12 maximum, cross slope should not be greater than 2% or 1/20 (least possible running slope), handrails must provide a 3-ft-wide clearance. A ramp designed with the least possible running slope will accommodate the widest range of users.	
							Public space. Sitting on benches	If benches are provided they should have backrests along the entire length and at least one armrest. Seating should have adjacent space that allows shoulder-to-shoulder seating for someone using a wheelchair. Seat heights should be adequate to allow easy standing (17-19 inches form the ground). Finishes on seating should be nonabrasive. Seating areas should provide opportunities for shade, be it seating under trees, an overhang, or an umbrella thus offering protection from the sun and shelter from precipitation.	
							Lighting	Floodlights, spotlights, landscape lighting, and the use of full spectrum bulbs will enhance nighttime visibility and safety. Automatic sensor lights can also be installed for security.	
Sidewalk, ramp, curb cuts, pedestrian crossings, street signage	**Tomic**, S. (2003). Hamilton Urban Braille System: Urban design for an Aging Society. *Plan* Spring/Printemps 2003: 41-43.	**Hamilton, ON, Canada**	**Visually impaired, elderly, infirm and users of a variety of mobility devices**	Discuss the features of the "Made in Hamilton" Urban Braille System developed collaboratively by the City of Hamilton, McMaster University and the Canadian National Institute for the Blind through three projects (1996-2002). One of them was the reconstruction of Hamilton's Parkdale Street.	Although great progress has been achieved with respect to accessibility in barrier-free design of buildings, sidewalks and open spaces between buildings are still not designed, constructed and maintained to ensure free movement, safety and comfort for people with special needs. Public spaces are the living rooms of our communities.	Descriptive study	Planning and general design requirements	Should be in harmony with the local climate (four-season design) and use of strategies such as direct and reflected sun, shade control, wind control, wind screens, protection against weather elements and construction of sun pits.	9
							Sidewalk width	It must insure freedom of movement.	
								Major pathway: unobstructed paths for wheelchair and scooter users. All obstructions must be outside the limits of the main pathway. The wheelchair path must be a minimum of 1.5m wide when measured inside the shorelines.	
								Minor pathway: must be conceived as an alternate route and as an opportunity to accent areas containing obstacles.	
							Sidewalk delineation (shore lines)	Highly contrasting lines marking wheelchair paths, 23cm wide and constructed of dark grey stamped concrete, granite or other suitable material	
							Tactile information	Tactile information can be located within a wheelchair path that is **1.5m wide**. The blind and visually impaired can be trained to distinguish 4 or 5 materials and a variety of textures with their hand or cane. In fact, it requires only 2 textures (smooth and grooved) on sidewalks and other horizontal surfaces to produce up to 10 distinct clues or letters of urban braille. Urban Braille System communicates the following information: directional change (compass N-S-E-W), hierarchy of pathways (major vs minor), entrances to buildings, sidewalk and road boundaries, ramps vs raised pedestrian crossings/intersections, signage/way-finding, other information (e.g. underpasses, social activities, building information, business information, addresses, etc.).	
							Textured bands on intersections	Should be located perpendicular to and between the shore lines of a wheelchair path in areas such as the following: at the start and end of driveway approaches; at corners, parallel to and behind the curb within the limit of wheelchair ramps; perpendicular to roadways on either side of the grey portion of the nameplate; perpendicular to the roadway in front of decision node symbols.	
							Decision node symbols	Indication of locations in « clear-way » areas that offer more than one possible route of travel.	
							Street name sidewalk plate	Located at corners to indicate intersecting streets, show the name of the street that is perpendicular to the path of travel, in order to be read facing the street.	
							Street name signage	Located on traffic and streetlight poles. Larger plates allow for more traffic safety and easier way-finding.	
							Pedestrian crossing. Visual and audio timing	Located at most of the dangerous intersections adjacent to hospitals and to other land uses where seniors use the public spaces. Audio and visual timers are installed in conjunction with pedestrian traffic lights.	
							Bus stop / bus shelter detection strip	Must be approved by a public transportation agency.	
Street design, sidewalk, pedestrian crossings	**Norgate**, S. H. (2012). Accessibility of urban spaces for visually impaired pedestrians. *Proceedings of the Institution of Civil Engineers: municipal engineer*. 165 (4): 231-237.	**Manchester, United Kingdom**	**Visually impaired and elderly**	Present the results of 3 initiatives in the United Kingdom on accessibility of urban spaces to visually impaired pedestrians, focusing on elderlies. These initiatives are: "Age Friendly" Cities, Guide Dogs UK, and the Department of Transport's shared spaces local transportation note.	Visual impairment is an established risk factor for loss of independence, being one of the 4 most significant potential contributors to loss of independence among older people. People who are blind or visually impaired are known to report a fear of falling (Gallagher et al., 2011). People with a sight loss are 1-7 times more likely to have a fall (Legood et al., 2002).	Descriptive study of the 3 initiatives under 5 key themes: Pedestrian priority; Walkways and pedestrian routes; Pavements, kerbs and surface differentiation; Street crossings and intersections; and Access to transit systems, navigation and signage. **Analysis of documents** issued by the institutions that hosted the initiatives. It is supported on other studies addressing design features regarding the infrastructures analyzed.	Street design. Shared streets: non segregated space, "reducing dominance of motor vehicles and enabling all users to share the space".	Guide Dogs UK states that priority for pedestrians should take precedence over all other forms of transport on designated footways in traditional streets and also in shared space designs. Regarding the DfT local transport note, the shared space concept refers to "reducing the dominance of motor vehicles and enabling all users to share the space". When pedestrian density is high and includes children and elderly, drivers are less willing to share space; concerns by blind and partially sighted users that shared space would reduce independence; hybrid electric cars might become a new risk since they reduce the noise that alerts vision impaired people.	14
							Sidewalk delineation. Kerbs	When higher than 60mm, it prevents falls. It must have an appropriate height to avoid falls. Kerbs of lower height were not always detected in a study (Thomas, 2011). Used in conjunction with dropped kerbs and tactile paving, a minimum kerb height was viewed as a way to delineate the walkway for all pedestrians, especially vulnerable users. On a study, nearly a quarter of pedestrians were injured by a fall involving a kerb: painting of marking kerbs might be a solution.	
							Sidewalk delineation. Tactile guidance paths	It might be adverse for other users, some patterns may lead to some degree of change in balance and stability.	
							Sidewalk delineation. Visual contrast	Tonal (color) contrast enables partially sighted users to perceive boundaries such as the edge of the carriageway. On dark pavements like asphalt, lighter colored detectable warnings with a high reflectance index should be used. Complicated surface patterns can lead to disorientation.	
							Sidewalk demarcation. Bollards and street furniture	Level surfaces, especially in busier settings, can create significant problems for blind and partially sighted people who often use kerbs to define comfort space and to navigate by. It must be made depending of the circumstance and depending on the physical context of the street. Guide Dogs UK indicates that bollards and other furniture need to be out of the main pedestrian flow and their position identifiable to all users. Additional demarcators like tactile paving and visual contrast could be used to aid in this endeavor. Obstacles that are temporary or not consistent in their use or location (advertising A-boards, furniture) can be a problem for all users. Management and enforcement practices should be in place to ensure that all potential obstacles are either positioned in clearly defined ways away from pedestrian routes or removed. Where potential obstacles are incorporated, these should be clearly identifiable to all users by the use of visual contrast and surface level tactile indicators and/or tapping rails.	
							Surface	Pavements should be non-slip, wide enough for wheelchairs and have dropped kerbs to road level to take into account users with mobility needs. Artificial surfaces can but utilized to create detectable safety warnings (e.g. blister surface) of carriageway edges, act as hazard alerts (e.g. corduroy surface) for top/bottom steps and guidance (e.g. rib and sinusoidal) to indicate routes.	
							Pedestrian crossing. Underfoot bars	Commonly, a 4" misalignment can lead a pedestrian to finish outside the pedestrianized area. In a simulation study determining which cues, if any, facilitated alignment, the implementation of underfoot bars raised perpendicular to the desired walking direction aided staying on course (Scott et al., 2011). Non-slip markings, visual and audio cues and appropriate crossing time should be provided. It is important to provide dual modalities from audible and tactile signals (i.e. rotating cone) to enable safe crossings. Controlled crossings should be prioritized over informal ones, informal crossings should not replace controlled ones. Controlled crossings need to be sited at the beginning and end of pedestrian zones and shared spaces. Dropped kerbs and tactile paving should be provided at regular intervals, and particularly near bus stops and key destination points.	
							Access to transit systems, navigation and signage	Transport stops and stations are conveniently located, accessible, safe, clean, well-lit and well-marked with adequate seating and shelter. Complete and accessible information provided to users about routes, schedules and special needs facilities. The use of talking signs and emerging technologies as additional supplementary signage, and highlights the priority of promoting logical layout with consistent reference points.	
Street design, sidewalk, pedestrian crossings, bus stops	**Nodin**, Y. (2006). Faciliter la ville aux personnes à mobilité réduite. *Le Moniteur*. 16 juin 2006: 62-64.	**Marseille, France**	**Mobility impaired, visually impaired, elderly**	Describe urban infrastructures and features that allow the development of inclusive urban spaces. Using an obstacle-solution methodology, this project addresses the guidelines taken by the City of Marseille. This City, the Centre d'étude des techniques de l'équipement (CETE) and the DDE des Bouches-du-Rhône prepared a cartographic system. It contains the downtown open public spaces around the City Hall. All the obsolete features were identified and they received an intervention priority, with regards with the introduction of a tramway system.	5.2 million French adults declare having difficulties circulating outside their home. This situation negatively impacts the quality of urban infrastructures and the comfort of living in the city.	Descriptive study	Sidewalk width	1,40-m wide minimum. Accumulation of trashcans, bollards, trees with mold and signage limiting circulation are obstacles.	9
							Sidewalk pavement treatment	For all public markets, a tactile paving treatment is necessary 0,5m from the edge of the sidewalk. Immobile, no slip pavement, the use of different colors is recommended. Different colors can help guide people with visual impairments.	
							Sidewalk delineation. Tactile guidance paths	1,20-m wide minimum concrete pad should be created on irregularly-paved surfaces.	
							Sidewalk curb cuts	1,20-m wide minimum. Maximum height of the demarcation of the pavement with the sidewalk of 2cm.	
							Signage	Improvement of signals and codes to help people navigate within the open space, all items must have a different color in order to be recognized by vision impaired people. Harmonized signage favor orientation.	
							Ramp. Running slope (access to buildings)	Ramps having a grade of 5% or less are preferred. 12% slope on 0,50-m running length or less (entrance thresholds).	
							Steps design	1,20-m width minimum (without lateral walls). 16-cm high steps. A handrail (2 levels - one for tall people and the other one for short and mobility impaired people) is needed in staircases of 3 steps or more.	
							Pedestrian crossing. Audio guides	Necessary on all traffic light intersections.	
							Bus stop	The bus stop must be at the same level as the transportation vehicle.	
Street design, sidewalk, curb cuts, cross-slope, crosswalk, steps, pedestrian crossings, public transportation stop, lighting	**Laakso**, M., Sarjakoski, T., & Sarjakoski, L. T. (2011). Improving accessibility information in pedestrian maps and databases. *Cartographica*. 46(2), 101-108.	**Masala, Finland**	**Mobility impaired, vision impaired**	1) To identify the extent to which the content of spatial information meets the requirements of mobility-impaired pedestrians. 2) To study what spatial information and map data content is appropriate for different kinds of user groups and their special needs. 3) To collect knowledge about what kinds of geographic information currently exist and what are the information content requirements to enable mobility-impaired users to resolve whether or not they can take a particular route. 4) to create a set of guidelines for developing geospatial databases in terms of accessibility and Design for All. This research is part of the project Haptic, Audio and Visual Interfaces for Maps and Location Based Services (HaptiMap), which is supported by the European Commission. The HaptiMap project aims to develop multimodal location-based services (LBS) that are also accessible by special user groups, such as elderly and visually impaired people, and that support their use of spatial information.	In order to satisfy the various needs of different users, geospatial databases for pedestrian route planning should also contain detailed information on accessibility, such as pavement surfaces, steep slopes, and stairs. A comprehensive spatial database for pedestrians with special needs would increase their spatial awareness and help them to orient themselves more easily and to find their way in unfamiliar environments. Pedestrians with mobility restrictions still face obstacles and difficulties while moving around in their everyday lives. In order to increase the potential for mobility-impaired persons to move around, the accessibility aspect of various routes and paths should be integrated with the mainstream map services, so that users can get comprehensive information on routes and paths and their characteristics for the entire route that they intend to take. With comprehensive route information, users can plan the most suitable route for their current needs and judge for themselves whether they can manage to walk the route alone or whether they will need assistance.	Descriptive study: Researchers scrutinized a wide range of map services, geospatial databases, different kinds of hiking and outdoor route services, city maps, and journey planners. In all, they examined approximately 25 map sites and services, some of them covering broad areas. They also included Web maps and map services of special accessible paths and routes in the survey, as well as available guidelines for considering pedestrian accessibility. Map services that do not support pedestrian navigation were not included in the survey.	Surface	Surface of the road and tactile paving	23
							Height profiles	Height profiles of roads, or at least indications whereslopes are >5%	
							Lateral inclinaison of roads	<2%	
							Width of walkways/gateways	<2 m	
							Stairs, escalators, lifts/elevators		
							Crossings and traffic lights with audible pedestrian signals		
							Pedestrian subways and overpasses		
							Squares and parks		
							Public transportation stops and stations		
							Landmarks: visible and sonic		
							Benches and other places to rest		
							Streetlights		
							Obstacles	Obstacles, high curbs, construction sites	
							Current information on maintenance	Especially in winter	
								Warning surfaces	

TYPE OF INFRASTRUCTURES AND DESCRIPTION	REFERENCE	ORIGIN/CITY	TARGETED INDIVIDUALS	AIM / OBJECTIVES / HYPOTHESES	JUSTIFICATION	STUDY DESIGN	VARIABLES AND INDICATORS STUDIED	SPECIFICATIONS ON THE FEATURES AND INFRASTRUCTURES	QUALITY
Sidewalk	**Sharp**, S. & Savill, T. (1998). The pedestrian *environment – user* friendly or 'no-go' for blind and partially *sighted people? 8th International conference on transport and mobility for elderly and disabled people.* Perth, Western Australia, September, Vol 1: 267-72.	**United Kingdom**	**Visually impaired**	When moving around the pedestrian environment, visually impaired people will actively seek and make use of changes in footway surfaces. Tactile paving surfaces can therefore be used to convey important information to visually impaired pedestrians about their immediate environment. They may have raised shapes or may be made of materials which feel different to the surrounding footway surface. The United Kingdom has been carrying out research into tactile surfaces since the early 1980's. The research has aimed to identify tactile surfaces that are: 1) readily detectable both underfoot and with a cane by the majority of visually impaired people. 2) distinguishable from each other and from other paving surfaces. 3) capable of being learned and remembered. Recognising that the needs of people with physical and sensory disabilities could create potential conflicts, the research that led to the development of the tactile paving surfaces involved not only the target group, i.e. visually impaired people, but also others with a wide range of other disabilities including wheelchair users and people with walking difficulties.	There are approximately one million blind and partially sighted adults in the United Kingdom. Approximately 5% of these have no sight at all. Walking is a vital mode of transport for visually impaired people either on its won or in combination with the use of public transport and many either need or want to make journeys by foot on their own. Those who walk around on their own may do so by using their residual sight or by using a mobility aid. In a survey, half of the people stated that they had gone out the last week and 82% of them did it on their own (Bruce et al., 1991). However, many of those interviewed did not feel confident in their ability to walk alone either in their immediate neighbourhood or outside it.	The research programme resulted in the selection of seven tactile surfaces which fulfill the criteria stated in the aim. Five of the surfaces are warning surfaces and two indicate amenities.	Capacity to be detected underfoot and with a cane	**Blister surface.** It is used where the kerb is dropped, to inform visually impaired pedestrians that they are about to step off the footway into the carriageway. At light controlled crossings, those are called "Pelicans" in the UK, the surface is installed in an "L" shape so that people can walk down the stem of the "L" to the pedestrian control box from where they can press a push button to request the walk phase. An "L" shape is also used at "Zebra" crossings where drivers are required to give way to pedestrians to allow them to walk across the carriageway. All other crossings are considered to be uncontrolled crossings, i.e. pedestrian does not have priority over vehicular traffic and must make a decision about whether it is safe to cross. In most of these situations, the blister surface is installed across the full width of the dropped kerb and to a depth of 400mm. At these types of crossings, the surface is normally buff coloured. Traffic calming measure are now widespread in the UK and some schemes result in sections of the carriageway being raised to the height of the footway so as to create speed reducing kerb to kerb flat topped humps in the road. This can cause problems for visually impaired people who would normally rely on the presence of the kerb upstand and so it is recommended that the blister surface is also installed in situations where there is no level difference between the carriageway and the footway.	14
								Hazard warning surface. It was developed to convey the message "hazard, proceed with caution". It is most commonly used to indicate steps where it extends across the full width of the stairs and is set back slightly from the first step, at both the top and bottom of the flight. The same surface is now used to indicate to a visually impaired person that they are walking onto an on-street light rapid transit platform.	
							Capacity to be distinguished (among them and with other paving surfaces)	**Platform Edge (Off-Street) Warning Surface.** Visually impaired people can find it difficult to locate the edge of the platform at train stations, particularly where they do not have the long white cane. It was developed to help people who cannot see the white line denoting the platform edge. The surface is installed along the length of the platform, set back slightly to give the person time to stop walking before reaching the platform edge.	
								Platform Edge (On-Street) Warning Surface. Light rapid transit (LRT) is growing in number. With such schemes, trams run along streets and the footway is raised to create platforms from which people can board the tram. This surface was developed to run along the platform, set back slightly. It was developed because of the risk that the blister shape platform edge (off-street) warning surface could be confused in the street environment with the blister surface used to indicate the absence of a kerb upstand.	
							Capacity of learning and remembering their use	**Segregated shared cycle track/footway surface.** On a segregated shared cycle track/footway, the route is divided in 2 with cyclists cycling on one side of the facility and pedestrians walking along the other side. A white line is painted along the length of the facility and a painted logo of a bicycle is used, together with signing, to inform people as to which side they should use. Such a facility can create problems for visually impaired pedestrians who will neither be able to tell that they are entering such a facility, nor know on which side of the facility they are walking. The segregated shared cycle track/footway surface was developed to provide visually impaired people with tactile information to tell them that they are entering/leaving the facility and to help them distinguish between the pedestrian and cyclists' sides. It consists of a bar pattern, with the bars crossing the direction of pedestrian travel on the pedestrian side. The same surface is turned through ninety degrees on the cyclist side. Instead of a painted white line, a raised profile line is installed along the length of the route to help people with a vision impairment keep to the pedestrian side of the facility.	
								Amenity surfaces	
								Guidance path surface. Its purpose is to guide visually impaired people along a route when the traditional cues, such as a property line or a kerb edge, are not available. It can also be used to guide people around obstacles, like street furniture. The surface has been designed so that people can either maintain contact with it with their feet or with their cane.	
								Information surface. Its purpose is to help people locate amenities such as telephone boxes or ticket offices at bus and rail stations. The surface is helpful to people who are regular users of a particular area as they will become familiar with the type of amenity indicated. This surface does not have raised shapes but instead feels softer than conventional paving materials.	
								Guiding principles	
								The tactile surfaces outlined here were designed to address some of the problems experienced by visually impaired people in the pedestrian environment. It was agreed that certain criteria should be met: 1) Each type of tactile surface should be exclusively reserved for its intended use. 2) The surfaces should be consistently installed according to the nationally agreed layouts. 3) The surrounding footway should, where possible, contrast in colour with the tactile surface. 4) Visually impaired people should be made aware of the profiles and meanings of the surfaces and be able to distinguish between them. 5) Instruction in the use of the surfaces should be included in mobility training. 6) The warning surfaces should be used wherever practical but the amenity surfaces should be only installed after consultation with local visually impaired people. The amenity surfaces should be installed where visually impaired people are experiencing difficulties locating particular amenities or finding their way to cross an area. 7) The provision of tactile surfaces should be considered as part of a wider package of measures to assist visually impaired people. In particular, the condition of the surrounding footway should be inspected for uneven surfaces and badly positioned street furniture.	