

CHAPTER V DESIGN GUIDELINE

5.1 Basic and Attribute of Urban Design

Urban design in short is an art of designing places for people and is one of the important elements in urban planning, especially for a compact and dynamic city like Naha City, Okinawa. It concerns about the total visual effect of building masses, connections with people and places, creation of spaces for movements, urban amenities and public realm, and the process for improving the overall townscape. Urban design sets the framework for the physical and spatial arrangement and composition of built-forms and their three-dimensional relationship with the spaces around them and the surrounding settings for achievement of aesthetic and socio-cultural qualities.

To create a high quality, sustainable built environment in Tsuboya, due considerations should be given to urban design concepts and principles in the planning and development process. This study surveyed the present state of Tsuboya-Yachimun Dori corridors in Naha City, aiming to find the type of management in the space usage which suits the production area of Japanese traditional craft. The following points became clear in this study:

1. The relationship between the conservation site and living space.
2. The problem facing the sightseeing and new resident space.
3. The spatial change in the usage of noborigama (climbing kilns) and their distribution in the history as important cultural properties.

5.2 General Urban Design Consideration

The following checklist could be used in assessing the urban design implications of planning and development proposals:

A. Objectives of Urban Design

Successful streets, spaces, villages, towns and cities tend to have characteristics in common. These factors have been analyzed to produce principles or objectives of good urban design. They help to remind us what should be sought to create a successful place. There is considerable overlap between the objectives and they are mutually re-inforcing.

THEORY	URBAN DESIGN GUIDELINE		
	ASPECTS	OBJECTIVES	IMPLICATIONS
Social-culture and Building character (Vernacular Architecture)	Character	A place with its own identity	To promote character in townscape and landscape by responding to and reinforcing locally distinctive patterns of development, landscape and culture.
Accessibility	Continuity and enclosure	A place where public and private spaces are clearly distinguished	To promote the continuity of street frontages and the enclosure of space by development which clearly defines private and public areas.
Serial vision and Townscape	Quality of the public realm	A place with attractive and successful outdoor areas	To promote public spaces and routes that are attractive, safe, uncluttered and work effectively for all in society, including disabled and elderly people.
Inclusive with Universal Design	Ease of movement	A place that is easy to get to	To promote accessibility and local permeability by making places that connect with each other and are easy to move

		and move through	through, putting people before traffic and integrating land uses and transport.
Signage and Landmark	Legibility	A place that has a clear image and is easy to understand	To promote legibility through development that provides recognisable routes, intersections and landmarks to help people find their way around.
Conservation Building	Adaptability	A place that can change easily	To promote adaptability through development that can respond to changing social, technological and economic conditions.
Land Use	Diversity	A place with variety and choice	To promote diversity and choice through a mix of compatible developments and uses that work together to create viable places that respond to local needs.

Table 5.1: Table of Objectives Urban Design

Source: <http://www.designcouncil.org.uk/sites/default/files/asset/document/by-design.pdf>.

B. Aspects of Development Form

The form of buildings, structures and spaces is the physical expression of urban design. It is what influences the pattern of uses, activity and movement in a place, and the experiences of those who visit, live or work there. This guide sets out the most important characteristics of the physical form of development by articulating eight aspects. Together, these define the overall layout of the place (in terms of its routes and building blocks); its scale (in terms of building height and massing); its appearance (as expressed in details and use of materials); and its landscape (including all the public realm, built and green spaces).

THEORY	PHYSICAL FORM OF URBAN DESIGN GUIDELINE		
	ASPECTS	STRATEGY DESIGN	IMPLICATIONS
Path and Pedestrian Ways	Layout: urban structure	The framework of routes and spaces that connect locally and more widely, and the way developments, routes and open spaces relate to one other.	The layout provides the basic plan on which all other aspects of the form and uses of a development depend.
Figure Ground	Layout: urban grain	The pattern of the arrangement of street blocks, plots and their buildings in a settlement.	The degree to which an area's pattern of blocks and plot subdivisions is respectively small and frequent (fine grain), or large and infrequent (coarse grain).
District and Open Space	Landscape	The character and appearance of land, including its shape, form, ecology, natural features, colours and elements, and the way these components combine.	This includes all open space, including its planting, boundaries and treatment.
Land Use and Nodes	Density and mix	The amount of development on a given piece of land and	The density of a development can be expressed in a number of

		the range of uses. Density influences the intensity of development, and in combination with the mix of uses can affect a place's vitality and viability.	ways. This could be in terms of plot ratio (particularly for commercial developments), number of dwellings, or the number of habitable rooms (for residential developments).
Building Form	Scale: height	Scale is the size of a building in relation to its surroundings, or the size of parts of a building or its details, particularly in relation to the size of a person. Height determines the impact of development on views, vistas and skylines.	Height can be expressed in terms of the number of floors; height of parapet or ridge; overall height; any of these in combination; a ratio of building height to street or space width; height relative to particular landmarks or background buildings; or strategic views.
Building Massing	Scale: massing	The combined effect of the arrangement, volume and shape of a building or group of buildings in relation to other buildings and spaces.	Massing is the three-dimensional expression of the amount of development on a given piece of land.
Building Character	Appearance : materials (Architectural Aspect)	The texture, colour, pattern and durability of materials, and how they are used.	The richness of a building lies in its use of materials which contribute to the attractiveness of its appearance and the character of an area.

Table 5.2: Table of Aspects of Development Form

Source: <http://www.designcouncil.org.uk/sites/default/files/asset/document/by-design.pdf>.

5.3 Guideline for Specific Major Land Use

The urban design guidelines established in this chapter promote urban design and air ventilation in the planning and design process among other considerations. To improve the quality of their life, the community should be encouraged to appreciate the benefits of urban design as well as the broader environmental, economic and social implications so as to lend their support. In effect, the success in making Naha City an international city of world prominence not only requires Government's initiatives in public projects, but also relies on support from the industry stakeholders and community throughout the development process.

Urban design guidelines are presented in the subsequent sub-sections for the following specific urban design issues.

SEGMENTS	OBJECTIVE	GUIDELINES
A (ENTRANCE SEGMENT: 180 M)	<ul style="list-style-type: none"> • Create attractive entrance gate to encourage the visitors interest 	<ul style="list-style-type: none"> • Need landmark for entrance gate which is has traditional characteristic of the early history of the tsuboya pottery • Redevelopment should orient towards the street and contribute to a pedestrian-friendly public realm by:

		<ul style="list-style-type: none"> ✓ situating buildings close to the street line or transit station so that they frame the street and contribute to ground-level pedestrian activity; ✓ orienting primary entrance points and street level uses to support higher levels of activity along key pedestrian routes, stop or station locations and at waiting areas; and ✓ designing building facades to actively address public streets and open spaces through the “active” architectural treatments
	<ul style="list-style-type: none"> • Considering the interesting points 	<ul style="list-style-type: none"> • Attractive design for the interesting points through the guidance of the characteristic road for the signage.
	<ul style="list-style-type: none"> • Create “Arayachi (unglazed Tsuboya ware)” as the entrance segment characteristic 	<ul style="list-style-type: none"> • Protect the Tsuboya historic value. • Significant historical structures and landmarks should always preserve or conserve. • New developments or major improvement works should complement with the old urban fabric and the street identity and special characteristic should preserve or retain.
<p style="text-align: center;">B (SHOPING CENTER SEGMEN: 201 M)</p>	<ul style="list-style-type: none"> • Learning and feeling the history of Okinawan pottery by experiences of the process making based on traditional glazed and technique. 	<ul style="list-style-type: none"> • Maximize the amenity value of sites with good natural settings. • Promote mixed use development with public oriented activity. • Create focal points and activities nodes. • Promote retailing and leisure activities to the promenade. • Parking policies may require coordination amongst adjacent districts to ensure community concerns of overflow parking are addressed
	<ul style="list-style-type: none"> • Develop the street as tourist attraction of townscape by remain the traditional shops along the corridors. 	<ul style="list-style-type: none"> • Avoid mismatched development in terms of street view, form and scale. • Promote land (use continuity by improving linkage system. • Promote harmony in the visual relationships and transition between the new and existing development. • Promote integration of shopping recreation areas with adjoining land uses

		in terms of pedestrian, access and landscape design frameworks.
C (EXIT SEGMENT: 122 M)	<ul style="list-style-type: none"> • Create “Jouyachi (glazed Tsuboya ware)” characteristic to remain the Tsuboya Yachimun pottery history as the end of this street 	<ul style="list-style-type: none"> • Enhance physical access at various levels. • Promote visual accessibility. • Safe and pedestrian dominated street enhance the physical and psychological accessibility. • Multi functional pedestrian access is recommend with diverse variety of experiences.
	<ul style="list-style-type: none"> • Create visual quality to get tourist impressions and remain them about Tsuboya as pottery center in Naha City. 	<ul style="list-style-type: none"> • Maximize the amenity value of the street corridor. • Promote visual interest of promenade outlook in terms of land use, built form and landscape treatments. • Avoid objectionable views. • Pedestrian oriented promenade with look out points or view corridor should promote to be capitalized the beauty of Tsuboya ware. • Physical layout and build form should allow maximum street views. • Special location of vertical elements such as buildings or sculptures always has great visual impact and may act as points of reference or landmarks. • Horizontal elements such as special designed paving pattern may create visual interest. • A particular paving material throughout a series of spaces would provide continuity and sometimes used to define the direction and hierarchy of spaces.

Table 5.3: Guideline Design of Tsuboya Yachimun Dori
Source: Analysis by Author

5.4 Proposal Consideration

5.4.1 Functional Aspect

Functional aspect is a state of harmonious relationships between the area of planning systems and the area of activities and processes. The fundamental assumption here are the user and their activities.

User	Kind of Activities	Activity Analysis	Space and Facilities Requirements
Craftsman pottery	Main Activity	<ul style="list-style-type: none"> • Making pottery • Shelling pottery • Pottery Exhibition 	<ul style="list-style-type: none"> • Production Studios • Pottery Shops • Show Room

	Completing Activity	<ul style="list-style-type: none"> • Eating and Drinking • Take a rest • Parking • Have a vehicle 	<ul style="list-style-type: none"> • Food and Beverage • Rest Room • Private parking • Road and signage
	Supporting Activity	<ul style="list-style-type: none"> • Settle/ Reside • Gathering 	<ul style="list-style-type: none"> • Apartment or Housing • Community Space
	Service Activity	<ul style="list-style-type: none"> • Give an experience 	<ul style="list-style-type: none"> • Experience shops
Visitors/ Tourist	Main Activity	<ul style="list-style-type: none"> • Looking and Walking around • Visiting historical destinations 	<ul style="list-style-type: none"> • Pedestrian ways, signage, and shelter • Museum and historical buildings
	Completing Activity	<ul style="list-style-type: none"> • Eating and Drinking • Take a rest • Parking • Have a vehicle 	<ul style="list-style-type: none"> • Food Court • Sitting group and Rest Room • Parking Lots • Road and signage
Community/ Organizer	Main Activity	<ul style="list-style-type: none"> • Organizing Festival • Give Information • Remain history of Tsuboya-Yachimun Pottery 	<ul style="list-style-type: none"> • Meeting Room • Information center • Historical buildings conservation and vernacular architecture building
	Completing Activity	<ul style="list-style-type: none"> • Eating and Drinking • Take a rest • Parking • Have a vehicle 	<ul style="list-style-type: none"> • Food and Beverage • Rest Room • Private parking • Road and signage
	Supporting Activity	<ul style="list-style-type: none"> • Settle/ Reside • Gathering 	<ul style="list-style-type: none"> • Apartment or Housing • Community Space
	Service Activity	<ul style="list-style-type: none"> • Security service 	<ul style="list-style-type: none"> • Evacuation System

Table 5.4: Functional Aspect of Tsuboya Yachimun Dori
Source: Analysis by Author

5.4.2 Contextual Aspect

Contextual aspect is external elements that influence an object. These elements are physical and non-physical. Roads, buildings, and land contour are examples for physical elements while non-physical elements are weather condition, local culture, as well as political and economic constraints.

The context determines the architectural style, building material selection and site layout, which is very important in creating an effective design. All these promote continuity between the building and local circumstances.

SEGMENT	PHYSICAL ELEMENTS	NON-PHYSICAL ELEMENTS
A (180 M)	<ul style="list-style-type: none"> • Main entrance of the road • Pedestrian ways • Shops and Museum • Historical Building (<i>Fuenu Kama</i>) • Parking lots • Land contours (57,74,90 meter) 	<ul style="list-style-type: none"> • Townscape of Noborigama as the character of the “Arayachi (unglazed Tsuboya ware)” • Landmark as the attractive point

		<ul style="list-style-type: none"> • First serial vision of the early Tsuboya-Yachimun history (remain prewar pottery) • Created pottery with the craftman bare hands, using fire and natural materials.
B (201 M)	<ul style="list-style-type: none"> • Shops • Craftsman studio and gallery • Parking lots • Road and pedestrian ways • Shelter • Rest area 	<ul style="list-style-type: none"> • Second serial vision of the classification of Pottery • Pottery can be divided into five categories: earthenware, pottery (toki and sekki), porcelain, and tile.
C (122 M)	<ul style="list-style-type: none"> • Experience shop • Preservation site (<i>Agarinu kama</i> and <i>Arakaki kejyutaku</i>) • Sacred water place (Agarinuka) • Exit gate • Clear signage 	<ul style="list-style-type: none"> • The third serial vision of remaining Tsuboya-yachimun history • Townscape of Noborigama as the characteristic of the “Jouyachi (glazed Tsuboya ware)”

Table 5.5: Contextual Aspect of Tsuboya Yachimun Dori
 Source: Analysis by Author

5.4.3 Performance Aspect

Performative Architecture is a “mega-narrative” that has a universal direction that depends on particular performance-related aspects of each project. That is, that the ideas and concepts to do with performative architecture and how it is classified, is known through a common understanding worldwide. The concept of performative architecture itself still needs to be developed and further explored to come to a concrete definition. Building appearances are no longer the sole emphasis as dynamics of use, temporal change, poetics of space, indeterminate patterns and processes become a clear indication of performance. The role of the architect in performance is to understand the multiply effects in material and time, rather than to simply predict. Introduce architects to performance based design, and technology providers to make software that makes it very intuitive for architects to understand performance impact of buildings they design.

A. Macro Level (Image of the City)	Natural	<ul style="list-style-type: none"> • Key attributes / components of the natural setting • Direct and indirect impacts on physical and visual quality of natural landscape, cultural or socio-economic assets • Compatibility with natural and landscaping setting
	Man-made	<ul style="list-style-type: none"> • Urban context • Contribution to the cityscape in terms of adding legibility and creating high-quality city environment • Visual impact and suitability of landmark feature • Suitability and visibility of visual features • Compatibility with landscape and development pattern • Compatibility with overall height profile and massing

		<ul style="list-style-type: none"> • Contribution to the local character • Compatibility with heritage setting
B. Mezo Level (Buildings and Space)	Natural	<ul style="list-style-type: none"> • Direct and indirect impacts on physical and visual qualities of natural landscape
	Man-made	<ul style="list-style-type: none"> • Location suitability • Relationship with the visual corridors • Impact on penetration of light and air • Compatibility with street pattern • Visual impact and suitability of landmark feature • Compatibility with overall height profile and massing • Compatibility with local heritage • Impact on the surroundings
C. Micro Level (User Environment)	Natural	<ul style="list-style-type: none"> • Functional appropriateness in relation to natural environment • Response to natural landscape in local context
	Man-made	<ul style="list-style-type: none"> • Contextual and functional appropriateness at street level • Contribution to pedestrian-friendly environment • Human scale and quality enhancement • Creation of spatial feeling

Table 5.6: Checklist for General Urban Design Considerations

Source: http://www.pland.gov.hk/pland_en/tech_doc/hkpsg/full/ch11/ch11_text.htm#4

5.4.4 Technical Aspect

Urban and architectural design are interlinked, and the definition of a site's urban concept determines the architectural framework. Characteristics and standards of land use, density, plot-and building design, and technical infrastructures are pre-determined by the urban design. Physical aspects of construction methods and materials influence functionality and have a significant sustainability impact.

Construction system and materials for resource efficiency: the technologies and materials of buildings should be chosen in relation to regional availability and quality.

THEORY	URBAN DESIGN GUIDELINE		
	ASPECTS	OBJECTIVES	IMPLICATIONS
Building Construction	Appearance : details	The craftsmanship, building techniques, decoration, styles and lighting of a building or structure.	This includes all building elements such as openings and bays; entrances and colonnades; balconies and roofscape; and the rhythm of the facade.
		Simple constructions with a vertical continuity of bearing elements reduce technological efforts.	The provision of traditional methods and materials can help to support local workmanship and companies as well as reduce efforts for fabrication and transport.

Building Material	Technical Aspects	Local materials: Shisa, ceramics, unglazed pottery, and glazed pottery as signage, decoration, and serial vision characteristic.	A pair of shisa (lion-dogs), typically in ceramic, are placed atop the roof or on either side of the gate, also in order to protect the home from evil spirits.
		Structures built in wood, with red pottery roof tiles, and surrounded by white limestone walls.	The provision of traditional methods and materials can help to support local workmanship and companies as well as reduce efforts for fabrication and transport.
		Natural materials were probably simple materials using for construction such as wood and stone.	Because of seasonal typhoons, the building protected by using the surrounding Fukugi (kind of tree) and stone wall
		Contemporary houses are made of concrete materials, because of serious typhoon problem	The seasonal typhoon is an important cause to select materials used for construction in Okinawa.

Table 5.7: Table of Technical Aspect
Source: Analysis by Author

5.4.5 Architectural Aspect

Approach to the Vernacular Architecture concept design, the architectural aspect of the urban planning design is to remain the history of *Tsuboya-Yachimun Dori* as the Pottery Center in Naha City with their buildings character.

THEORY	URBAN DESIGN GUIDELINE		
	ASPECTS	OBJECTIVES	IMPLICATIONS
The Aesthetics of Traditional Japanese Architecture	Simplicity	Traditional Japanese-style room such as Tatami room	To make modular for the room size following the tatami size.
	Innocence	Fusuma sliding door in order to connect rooms into larger room.	The rooms and spaces are arranged basing on traditional house.
	Straightens	The dimensions of housing, dwellings, and room sizes should allow for the more efficient room widths.	Flexibility in use is limited by these design specifications. Building height is another important factor, especially in seismic hazard zones.
		The significant influence of building	The construction determinations should be integrated in the

		volume and floor arrangement	architectural design process at an early stage.
	Inner Peace	The socio-cultural background also influences the external architectural appearance as well as the inner organization of the building.	The construction methods and energy supply system, significantly influence building design and construction cost, the related planning disciplines should be integrated early in the architectural design process.
Building Physic	Comfortability and Privation	Sections of the wall are left open to allow for access, and for breezes to pass through, the entrance opening in the wall is blocked with a stone section called hinpun	Provides privacy for the family (preventing passersby on the street from seeing directly into the home), and is said to block the entry of evil spirits
	Air ventilation	The roof of the main house is cambered, while the roof in the detached house, is arched.	The former, camber shape, is influenced by Chinese culture, and the latter is originally from Japanese culture.
		The ceiling of the alcove, Tokonoma	The comfortable room with cool air is coming down from the attic
Conservation Site	Segment A	The serial vision is describing at Gusuku Period (1100s-1400s)	The introduction of pottery from China, with building characters are China influence and holy place dwelling encircled by Ryukyu lime stone.
	Segment B	The serial vision is describing at Meiji Period (1868-1879))	Revolution of Ryukyu Kingdom became Okinawan Prefecture that changed into Japanese Culture and character
	Segment C	Postwar period (1970s) the Tsuboya became cultural and historical sites	Tsuboya remained a center of production of potteries with traditional Okinawan building character
	Preservation District	The group of historic buildings	The historical buildings merge with surroundings and contribute to the historic scenic beauty are regarded as valuable cultural assets under the regulations.
Universal Design		Universal design is a framework for the	To be usable by the widest range of people operating in the widest

	Principles of Universal Design	design of places, things, information, communication and policy	range of situations without special or separate design
		Universal design is a way of thinking about design to eliminate barriers and make things easier to use.	It is the best approach to designing things that are accessible and user-friendly for the entire population
		The global movement of inclusive tourism	To ensure the full social participation of all persons with disabilities in travel, citizenships, and cultural contribution – and in the process, to ensure the same for everyone else

Table 5.8: Table of Architectural Aspect
 Source: Analysis by Author

5.4.6 Universal Design Aspect

Universal design is important for planning for the following reasons:

- It helps us avoid bad development and help us to deliver genuinely sustainable solutions for communities
- It helps us to create better places - for all abilities and all age groups -equitable, inclusive, participative and accessible
- It avoids the need for wasteful and inefficient retro-fitting of solutions, as a these matters should be considered at the outset of the design process
- It informs genuinely integrated strategies for land-use, transportation and urban design
- It creates greater efficiencies for public infrastructure investment and produces better economic development models
- It widens the audience and market for well considered development projects enhancing commercial viability
- It helps provide an environment in which people can age and retain their independence

Principles of Universal Design (Copyright North Carolina State University, 1997):

1. Equitable Use

Road and footpath layout makes an important contribution to the creation of universally designed environments. In considering the approach to the design which recommends the consideration of:

- a user hierarchy which focuses on the needs of pedestrians
- the needs of people of all ages and abilities
- desire lines within movement networks
- the use of quality audits systems which demonstrate how designs meet objectives for the area

2. Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

3. Simple and Intuitive

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

4. Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Provide adequate contrast between essential information and its surroundings.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

5. Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail safe features.
- Discourage unconscious action in tasks that require vigilance.

6. Low Physical Effort

It is important that all elements of the travel chain are consistently accessible and easy to plan and follow for a journey to be possible. Route assessments, including consideration of the quality of the routes and distances between points in the travel chain, can be useful in establishing whether elements of the chain are inconsistent or poor. In assessing appropriate

locations for seating, rest areas and designated parking areas, reference should be made to the recommended maximum distances without a rest.

Mobility difficulties	Distance (Metres)
People with visual difficulties	150
Wheelchair users	150
People with ambulatory difficulties without walking aid	100
People using walking aid, e.g. Walking stick	50

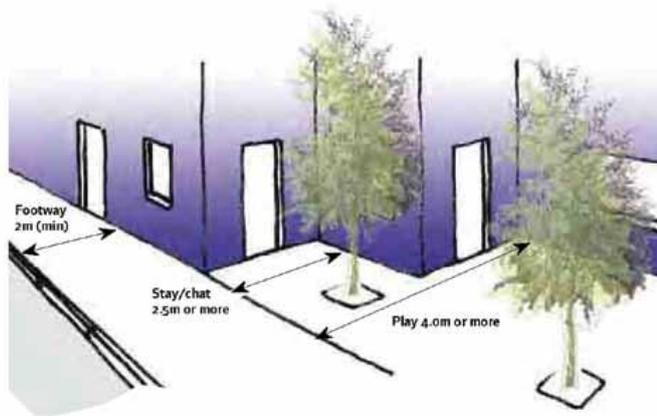
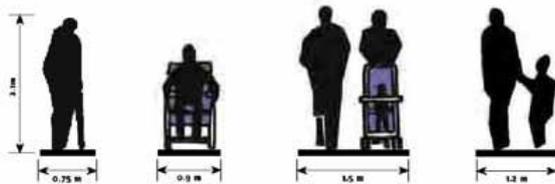
The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

7. Size and Space for Approach and Use

The provision of appropriate footpath widths is particularly important in meeting needs of pedestrian users. Footpaths and Pedestrian Areas (MfS, 2007)



Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.