



ROADSIDE AMENITIES DEVELOPMENT GUIDELINES 2019

Infrastructure and Product Development Division
Secretariat
Tourism Council of Bhutan

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1. Introduction

The Tourism Council of Bhutan (TCB) is mandated with facilitation and development of roadside amenities along roads, treks and other tourist amenities for the convenience of tourists and locals alike. A major aspect for a tourist visiting any country is their access to a clean and efficient toilet facility which can make or break their experience. Access to such facilities should be a must for anyone visiting the country and for the locals as well.

These facilities must be able to cater to needs of different genders, age groups and people with disability. Over the years, public restrooms designed and developed by TCB has implemented the ideology of ‘accessibility for all’ with the inclusion of ramps and restroom units for people with disability. However, every restroom design and development must be subjective to the context and needs of users. Further developments of roadside restrooms are coupled with other facilities like market sheds, restaurants, caretaker accommodation and others.

There has been a need for a standard guideline for the design and development of restrooms in order to address the issues of standardization, accessibility and management of such facilities. This guideline is intended to address issues arising from existing structures and facilities for further enhancement and improvement.

1.1 Issues and challenges

The development of restrooms and related facilities has been carried out without a standard document to guide the development of such facilities. This has resulted in diverse approaches to design, implementation and management of existing facilities and has brought up various issues and challenges. Some of the major challenges has been in terms of site selection, designs and management modality.

1.1.1 Site selection and feasibility issues

Tourism Council of Bhutan has constructed various different types of structures in different part of the country and in different kinds of locations. In doing so, some of the issues pertaining to site selection and feasibility issues that has come up are as follow;

- Lack of detailed study on the topography, soil stability and other physical attributes,
- Far distance from the nearest basic amenities such as roads, water, electricity and others,
- Isolation from nearest settlement/locality/activities which is important for the proper management of the facility,
- Regulatory frameworks of the particular locality and lack of proper consultation with relevant stakeholders particularly on site selection,
- Lack of a proper project brief outlining all the checklist items required for a suitable site selection.

Selection of a proper site for the development of restroom facilities has been a challenge mainly due to the various steps and procedures in selecting and obtaining the particular site for construction.

1.1.2 Design Issues

The design aspect of all the roadside amenities designed and constructed are different from each other and this has led to a lack of standard identity to such structures. Following are some of the most common issues relating to the design of the structures,

- Lack of a proper standard design resulting in different identity to every restroom constructed by TCB,
- Inclusion of detailed traditional Bhutanese design resulting in higher cost of construction,
- Need for detailed study on the user traffic and user type to alter the number of units and type of units in relation with the contextual study,
- Need for a detailed assessment on materials in relation to the context and easy availability for construction.
- Assessment for need of additional facilities together with the restroom.

Design and drawings for roadside amenities has been approved and implemented on case by case basis without the regard for standards and assessment studies. Many issues and challenges have come up due to these aspects and are to be reviewed in this guideline.

1.1.3 Management issues

Management of the roadside amenities is a major aspect of its development. The sustainability of a roadside amenities is heavily dependent on the management overlooking the maintenance, cleanliness and overall management of the restroom facility. The following are issues regarding management of restroom facilities in the current practices;

- Lack of accountability and responsibility of any particular management,
- Hard to outsource management to isolated independent restroom facilities,
- Long term sustainability of management paid by the organization,
- Minimum outreach of independent restroom management organizations to locations further from the capital city,
- Lack of standard for fee collection modality and its sustainability,
- Vandalism and destruction of property due to poor surveillance.
- Lack of proper facilities to retain the management in that area.

The management aspect of any restroom facility is the most important aspect of its development as it will determine the long term sustainability of the facility.

1.2 Basis and scope of guideline

This document will serve as a guide to site selection, design and management of roadside amenities developed here after. Although it is primarily aimed at designing a free standing, sustainable and financially feasible public restroom, the guideline will also cover the aspects of restrooms attached with other public amenities.

This guideline is aimed at meeting the following needs of tourists and locals in general;

- Access to restroom facilities in public areas, along roads, treks and others,
- Affordable, durable and sustainable amenities and facilities,
- Accessibility for all ages, genders and people with disability,

The guideline is developed in consultation with all relevant stakeholders with common goals in mind and with an intent of meeting the following core aims;

- Design guidelines and sustainability considerations

- Proper facilities and amenities
- Efficient management modalities

1.2.1 Design guidelines and sustainability considerations

The design aspect of the restrooms and other facilities will take various directions as every facility should serve the needs of the particular location or user needs. In addition to the designing aspect, sustainability in terms of use of natural surrounding and energy will be explored and defined as well. Thus, the guideline will cover the aspects of design coupled with sustainable practices to go address the issues of affordable roadside amenities.

1.2.2 Facilities and amenities

The facilities and amenities for every restroom shall differ depending on various factors like accessibility, number of users, management modalities, and others. It is important to determine the type and number of facilities before construction to define the proper use and purpose of the restroom facility. This guideline aims to cover such aspects from the pre design survey and ultimately to the construction of the facility.

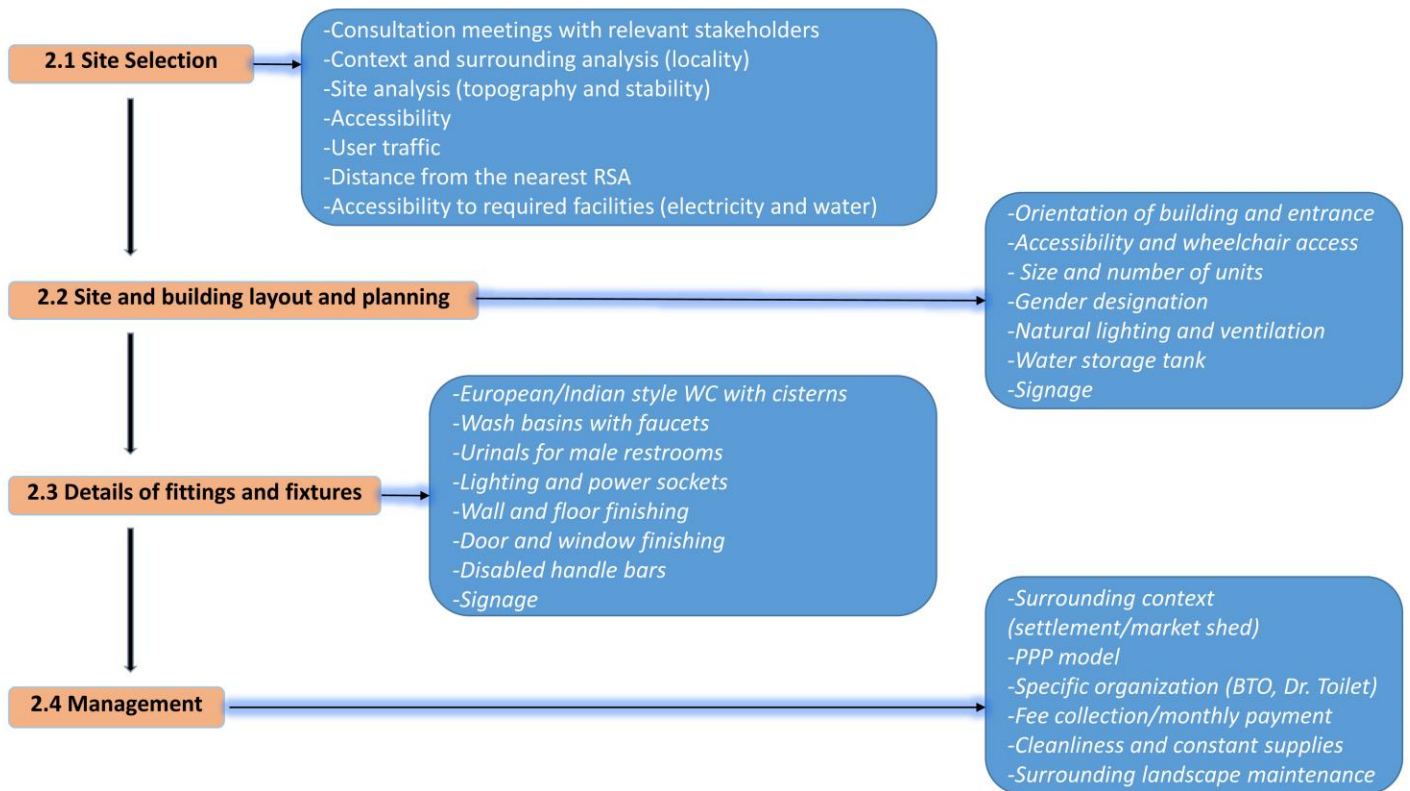
1.2.3 Management modalities

The effective and efficient use of any roadside amenity will be determined by the management aspect. The management modalities will have to cover the different aspects of management methods and how the mechanisms are put in place to properly manage the facility and define the sustainability of the restroom and other facilities. The various types of management modalities will be defined in the guideline to better guide the overall development of the restroom facility.

1.2.4 Beneficiaries

A restroom facility is a requirement for every public area including roadsides, recreational areas, public functions and others. The beneficiaries of the restroom facilities depend on a lot of factors and cannot be exactly defined. However, depending on the proposals and indicators, generally everyone will be benefited from the development of such facilities.

2. Roadside Amenities construction process



3. Guidelines

3.1 Project Assessment Report and Site Survey

This aspect of the guideline will help identify the need of an area for restroom construction and the respective roles of everyone involved. This must also determine the need for additional facilities together with the restroom. Prior to construction of any roadside amenity, the particular needs of the users must be defined along with the number of users and behavioral aspects of the users. The project assessment report helps identify the needs and behavior of the users in relation to number of facilities required and is followed by the physical survey of the site identified for construction.

3.1.1 Project Assessment Report

When assessing the need for a restroom facility at any location, the assessment regarding the users must include the following factors;

- Consultation with local representative/proponent to determine the need and subsequent management and maintenance of the facility.
- Number of existing user traffic and possible projection of user traffic in the near future to determine the number of facilities and amenities to be provided.
- A study of vehicle traffic along the roads, human traffic along the trek routes, user traffic in recreational areas and other functions will help in determining the number of users in a particular time period and frequency of use.
- The target users must be defined as well when designing the restrooms. A certain projection of types of users with different abilities will help in providing different facilities. (E.g. users with disability, kids, etc.)
- The maintenance needs for different facilities will differ and the different types of facilities provided. The frequency of maintenance must directly co relate with the access to regular maintenance.
- A rough estimation for the need of repair and maintenance and its frequency must be determined before deciding on the type of facility to be provided.
- The distance from nearest settlement or other facilities to determine the need for separate facilities in addition to the restroom.

The project assessment report will aim to provide a detailed groundwork for the development of such facilities to avoid issues of usage, facilities and subsequent maintenance and management.

3.1.2 Site Survey

The site survey is aimed to determine the physical attributes and the regulatory frameworks of the particular site or location including the accessibility to basic amenities.

When determining the physical aspects of the site, the following must be kept in context;

- The availability of land in relation to the needs identified in the *Project Assessment Report* and the feasibility of the report in the current context. In case

of roadside restrooms along the national highway, the minimum right of way must be considered as well.

- The distance from the nearest restroom facility will also determine the location of the restroom. Although there is no exact formula to determine the distance between two such facilities, ideally a rest stop area could be at every half hour-1 hour drive/walk distance to counter the needs of travelers.
- The condition of the site in relation to different seasons must be studied as well to identify the need for additional structures such as retaining walls, drainage and others to avoid additional costs at a later stage.
- The access to parking facilities and other resting facilities could also be studied in accordance with the site amenities.
- Although the presence of a restroom is ideal for travelers and users, the site for such facilities must be carefully chosen so as to not block any scenic views or undermine the cultural beauty of the area.
- The proximity to the service centers such as fuel station, immigration check point, Quick charging stations and ATM etc. could be studied to integrate the facilities.

The physical attributes play a big role in the development of roadside amenities in any location. However, the procurement of the land/area for construction is majorly dependent on the regulatory frameworks for the particular area.

- The involvement of officials from Dzongkhag/local government is vital in determining the procedural factors while procuring any land/area for the development of restroom facilities.
- The approvals required for the construction at any site is vital in successful development of the facilities. Environment, cultural, telecom, road, power and local clearances are some of the common types of clearances required to be obtained in order to construct any facility.
- In addition to the clearances from the local government and other departments, in cases of private lands, further study and approvals must be obtained depending on the local regulations of the area.

- In case of parks and other recreational facilities, the planning aspect of the whole area will play a vital role in the development and placement of restroom facilities to determine maximum usage and minimum strain on the whole facility.

Apart from the physical and regulatory attributes, the access to basic amenities also play an important role in determining the site for construction of roadside amenities.

- The ideal distance of water and electricity supply is within 100m of the proposed site to avoid further investment in such connections.
- Proper weightage must be given to this factor while determining the site location in comparison to the other factors in order to develop an economically viable restroom facility.

Therefore, the site survey will put forth major findings in terms of the physical and regulatory aspects to further strengthen the project assessment report and further justify the site selection for the development of roadside amenities in any location.

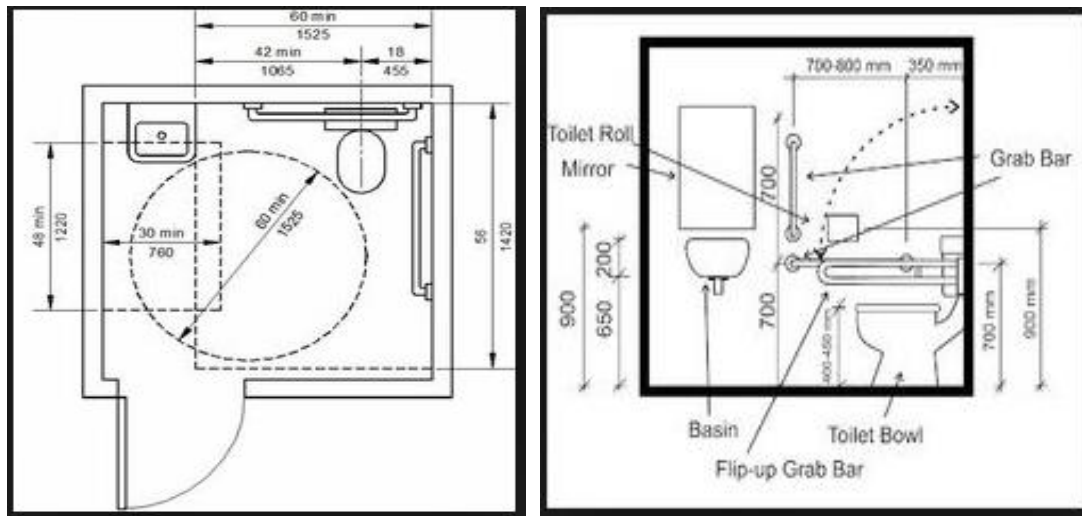
3.2 Building Guidelines for restrooms

3.2.1 Size and configuration of structure

The size and configuration of the structure will be determined by the location of the site as well as the user need and number determined by the project assessment report and the site survey.

- The number of units will directly correlate to the number of users and frequency of users for that particular location. An ideal configuration of the cubicle would be to directly open to the public to ensure visibility and user conscience. A semitransparent screening could be installed to provide privacy.
- The use of unisex units or gender separation is dependent on the site and need basis. However, ideally gender separation is necessary in every restroom facility with at least one unit each for male and female users, especially in location of high demand.

- The provision for urinals must be carefully considered in standalone restrooms as it can become an additional facility. However, provisions for urinals are useful in curbing the overcrowding of cubicle units.
- The provision for disable friendly restrooms must also be defined in the assessment report and the site survey. In line with the user need, the site selection must also adhere to the requirement of easy access for wheelchairs and other assistance. A minimum of one unisex disable friendly restroom could be provided where possible to provide accessibility for all.



An example for the layout of a disable friendly restroom (Source: Google)

3.2.2 Finishing and fittings

The finishing for the structure such as the floors and the walls must be resistant to impact and weather to a certain extent to enhance the durability of the structure and the materials used should be easily cleaned and durable.

- Ideally the floor and walls must be tiled to ensure water resistance and protection of wall material from the continuous water flow. However, the use of plastered cement for walls and floors could be easier in case of far flung areas where maintenance cannot be carried out as frequently.

- The toilets must be provided with anti-slip floor tiles where possible to avoid slipping accidents and further the color of the tiles must be darker shade to hide dirt.
- The wall tiles must be a minimum of 1.2m for WC and the rest of the wall surface with lighter tone color on clean plaster finishing will enhance the atmosphere of the restroom.
- The doors opening directly to outside must be of appropriate thickness to ensure safety latches with locking facility must be provided. In case of cubicle facilities, the door hardware must be able to show when in use.
- Kick plate of minimum 1.2m height should be provided on the inner side to prevent the door from constant water flow and appropriate signage must be provided for gender separation and disabled use. Additional hooks could be provided for the convenience of the users to hang their bags or others.



Image 1: Cubicle door indicators, Image 2: Kick plate, Image 3: Coat hooks

- If the restroom is provided with disable friendly restrooms, strong and durable grab bars must be provided in accordance with the international standards.
- The restroom units must provide the option of European type toilet or squat toilet to meet the needs of different users. The type of toilet seats must be determined while taking the durability and user type in account.
- The wash basins could be counter type or wall mounted basins. In case of exposed basins, it can be fabricated by cement or stainless steel to avoid vandalism or being destroyed.



Image: Examples for stainless steel and fabricated concrete wash basins

- Additional plumbing fixtures such as faucets must be provided if necessary and avoided providing externally.
- The plumbing fixtures including piping and waste pipes must be concealed in the walls or outside the view of the users. However, these fixtures must be easily accessible for maintenance and repair.
- Water supply tanks could be provided at the back of the structure and hidden as much as possible. However, the height of the tank must not be compromised as it can affect the water flow to the restroom.

3.2.3 External structure

When designing the external structure of the restroom, various issues must be addressed including accessibility, visibility, privacy and the aspects of sustainability can be explored and maximized as well.

- Adequate and comfortable stairs/steps must be provided for the comfort of the users if the restroom is not directly on the ground level from the point of access. The level of the restroom also determines the visibility of the restroom for the user's easy sight.
- If the restroom facility is provided with disable friendly units, ramps for wheelchairs must be provided for accessibility. The international requirement of the ramp slope is of 1:12 ratio whereby for every 1m height, a 12 meter length ramp must be provided.

- The direct access of the doors to the exterior is recommended for visibility. However, a screen could be provided to provide certain privacy to the users.
- Providing windows could be avoided to ensure privacy as well as to reduce incurring cost. For the purpose of ventilation, the gap above the wall and below the roof can be open with screens to provided adequate natural ventilation and lighting.

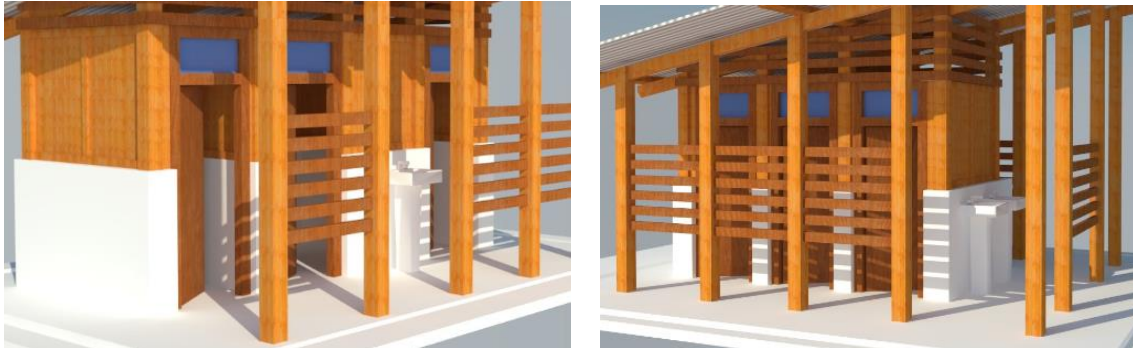


Image: Horizontal screens provided in front of doors (example designs)

Screens on below the roof to provide natural ventilation and lighting

- The use of lean-to roof can maximize the use of natural lighting and ventilation when it is configured in the right direction. Adequate amount of roof overhang must be provided to provide protection from rain. The use of translucent roof material can maximize the use of natural lighting for the most part of the day saving on energy consumption.

3.2.4 External and internal lighting

The lighting and power aspect of the restroom facility is dependent on the opening hours of the restroom and also the security aspect. As much as possible, lighting must be provided for the restrooms to prevent vandalism during the darker hours.

- For the internal lighting, adequate number of fixtures must be provided in relation to the number of units to maximize visibility during the evenings and darker hours. The usage of openings and sky light will enhance the use of natural lighting during the day and help in lessor energy consumption.

- For external lighting, adequate lighting must be provided to increase visibility for the users as well as to ensure safety of the facility. The external lightings must be provided with holders to protect from external forces and ensure durability.
- The power switches must be centrally located for the convenience of the management and for easier maintenance and repair. Minimum of one power socket should be provided in case of additional usages.

3.2.5 Signage - (roadside, at the site, internal signage, information required)

The major factor that will determine the visibility and usage of any restroom facility is the signage. The distance of signage from the restroom along the route, near the restroom and inside the restrooms must be determined according to the location of the restroom and the facilities provided.

- The restroom information signage must be provided a certain distance from the actual facility. This signage can be along the road, treks and in public areas for information.
- Further restroom signage must be provided at the restroom site as well to direct the users towards the facility and for information.
- Restrooms must be provided with information signage regarding the management, contact info in case of complaints, gender separation and others for proper information dissemination.



Image: Restroom signage, male and female signage

3.2.6 *Natural eco-friendly restrooms*

In no settlement zone, where it's not feasible for a physical infrastructure to be managed economically and technically, the eco-friendly saw dust natural restroom can be built. The area can be cleared and maintained with the natural settings for restroom. However, the Sawdust must be made available near the sites for travelers' use.

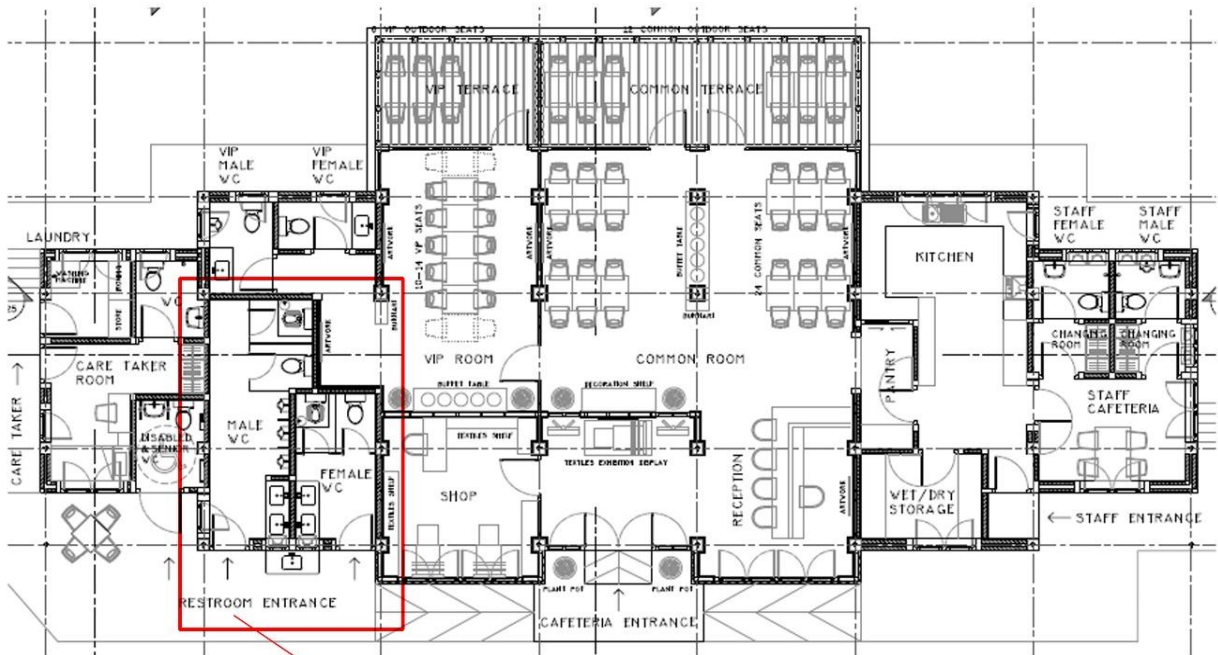
3.3 Guidelines for supporting structures

The project assessment and report will also carry out the need assessment for additional structures in addition to the restroom facility. Often time's restrooms along the highways are far from settlement or other facilities which could make it difficult to source management for such roadside amenities. Some of the additional facilities that could be incorporated with the restrooms along the roadsides are;

- Restaurant,
- Market shed,
- Caretaker house/shops etc.
- Integrated service centers

3.3.1 Roadside Amenities with Restaurants/cafeteria

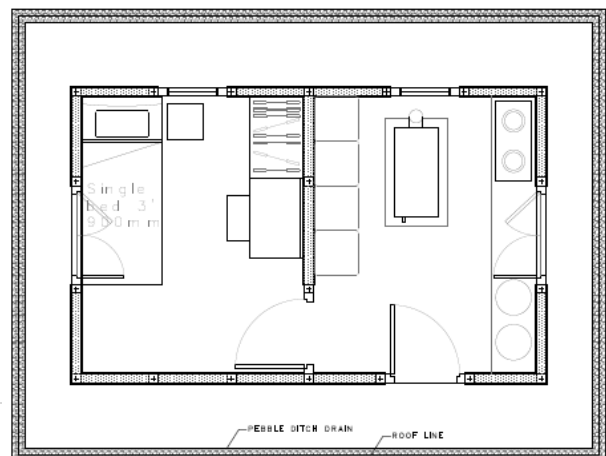
Restaurants provide the restrooms facilities within the structures and are normally for their customers. However, additional restroom facilities can be provided aside from the restaurant within the compound to provide the travelers with access to restroom facility as an optional facility. The restrooms can be developed in the same structure from the initial stage of construction while providing support in terms of designs and drawing and certain financial support to encourage the proponents. Further additional restroom facilities can be constructed near the existing restrooms to cater to travelers separate from the restaurant facility.



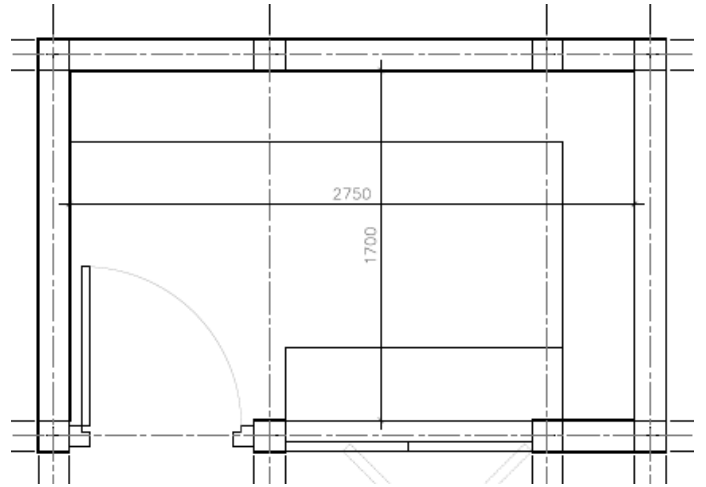
Restroom facility accessible from outside

3.3.2 Roadside Amenities with caretaker house/shop

When sourcing management for the restroom facilities, it is often difficult to get people to stay at the site of the restroom due to lack of accommodation in the vicinity. In order to retain the caretaker at the site, accommodation facilities must be provided at the site. This will help in minimizing vandalism, theft and help in enhancing the overall cleanliness and management of the restroom facility. In addition to accommodation facility, the opportunity to start commercial activity at the site will enhance the experience as well as the management of the restroom facility.



Fig; Simple restroom caretaker house with bedroom and kitchen/living



Fig; Simple restroom shop for commercial facility

3.3.3 Roadside Amenities with integrated service center

The restroom facilities can also be integrated with the other service centers such as immigration check point, fuel stations, quick charging station, cafeteria, convenience store, ATM facilities and parking spaces. This can reduce the duplication of expenditure on construction, as well as, the operation and management of the facilities will be easier and self-sustainable.

3.4 Management modality

The most important aspect that will determine the effective usage of the restroom facility is the management modality of the restroom and their effective mechanism for management.

3.4.1 Build and Operate model

In this model, the TCB builds and takes over the management of the restroom. The caretaker fees are paid for and fee collection is taken by the caretaker as incentive. The maintenance and repair are carried out by the central agency as well as the purchase of

supplied required in the restroom. This has now become obsolete and practically not self-sustainable.

3.4.2 Build and transfer model

In this model, TCB builds restrooms and the supporting structures (If possible integrated with the service centers) and hands over the restroom to an outside management (CSOs, Youth Groups, co-operatives etc.). The minor maintenance/ repair as well as the purchase of supplies is carried out from the fee collection. This model can be adopted in the less business viable areas, where there are no interested private investors to support the Government in construction of the facilities.

3.4.3 Public-Private Partnership Model

In this model, TCB bears the cost of construction of the restroom part of a bigger facility in partnership with a private investor. In addition, there can also be instances where the Private investors fully fund the construction of facilities on the proposed site identified by TCB in collaboration with relevant stakeholders. The restroom is taken over and managed by the private investor and the repair/maintenance as well as the overall management is taken over by the private investor with or without fee collection. Such modality is appropriate and feasible in the most viable business settings where there is a potential for the private investors to invest and generate income, while taking care of the restrooms.

3.5 Roadside Amenities Development proposals

The proposal to construct a restroom can be centrally developed or provided by various external stakeholders. The mechanism to study proposals and approve must be developed to effectively ensure the efficient development of such facilities maximizing proper usage by the users proposed.

- The Tourism Council of Bhutan shall propose restroom construction sites based on experience of the tourists and the availability of restroom facilities in various tourist location with proper study and consultations held with relevant stakeholders. However, the assessment proposed must be followed accordingly.

- Individual Dzongkhags proposing construction of restrooms along rest stops and other facilities shall go through the proper procedures with in depth study as proposed above and with the required clearances and approvals from the respective local government.
- Proposals to develop restrooms as part of PPP model from individuals must be together with a brief project proposal and the scope of the adjoining facility. Further the proponent must ensure the viability of obtaining the necessary clearances from the local government.

4. Restrooms samples and Designs

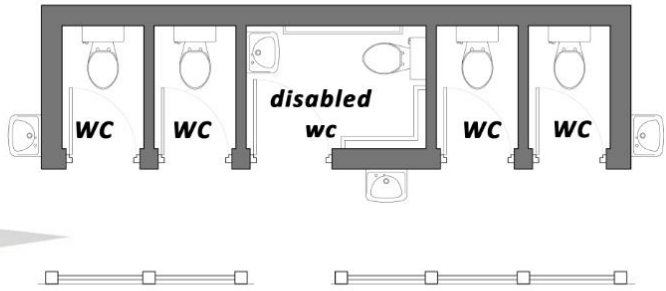
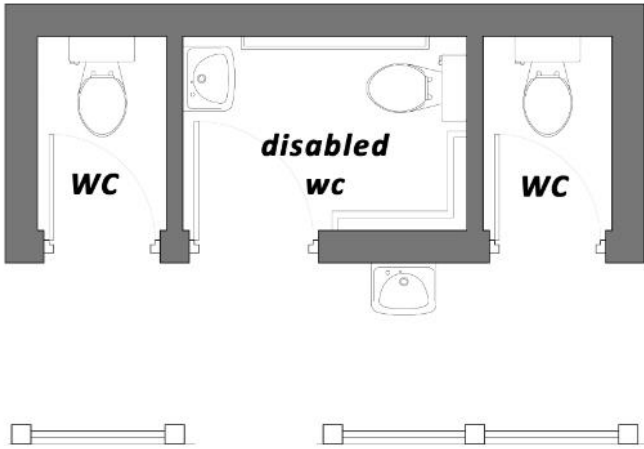
There are various designs and ways of designing restrooms facilities depending on the number of units, site feasibility, and other factors listed above. According to the mode of users, number of units can be increased and decreased accordingly. For example, the designs can be categorized as the high, low and medium traffic designs depending on the number of units that can cater to the users. The following are some of the examples of different types of restrooms that could be put to use.

Option 1: Restrooms with Disabled Friendly units

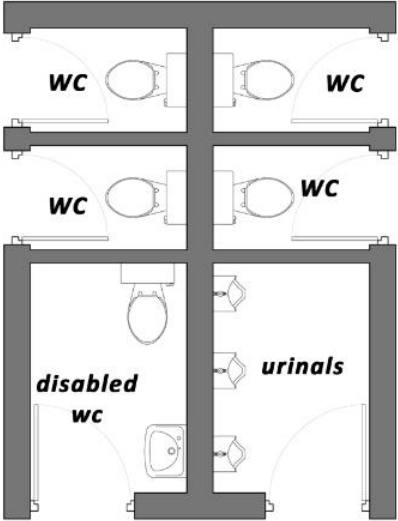
1.1 One unisex disabled friendly WC, one unisex WC, urinals and external wash basin



1.2 One unisex disabled friendly WC, one female and one male WC, external wash basin

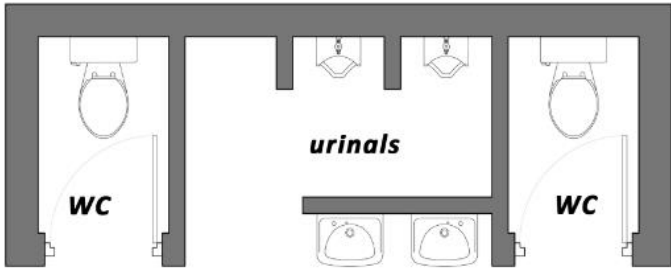


1.4 One unisex disabled friendly WC, two female and two male WC, urinals and external wash basin

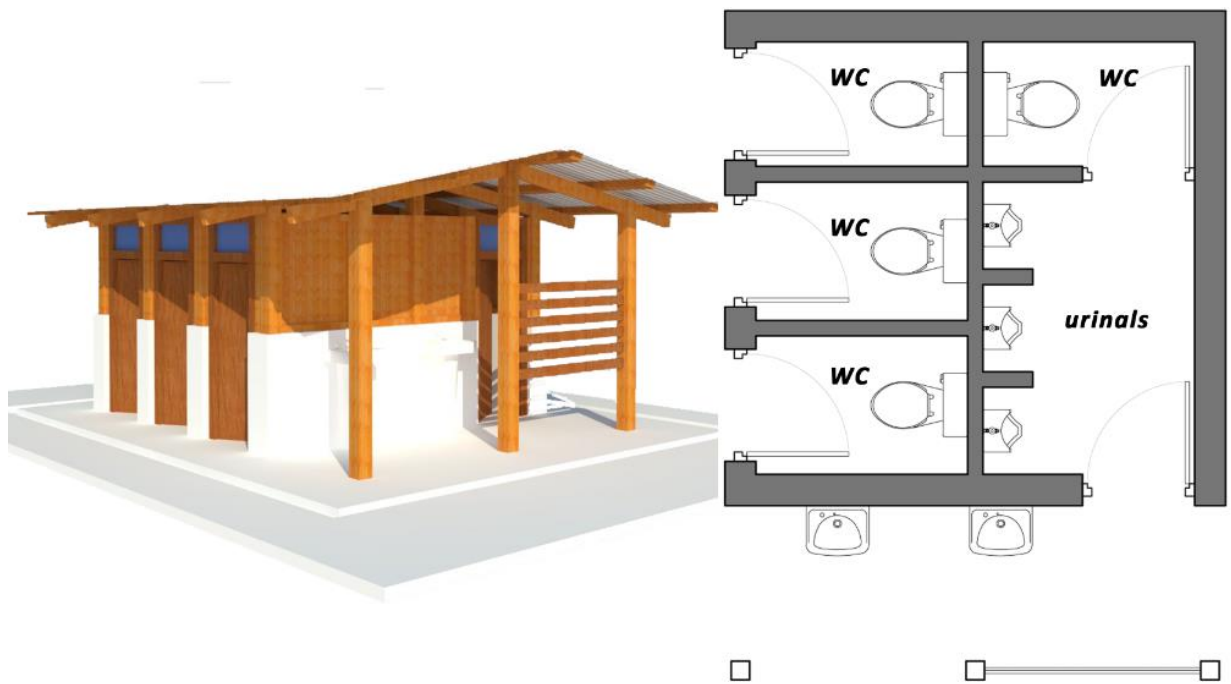


Option 2: Restrooms without Disabled Friendly Units

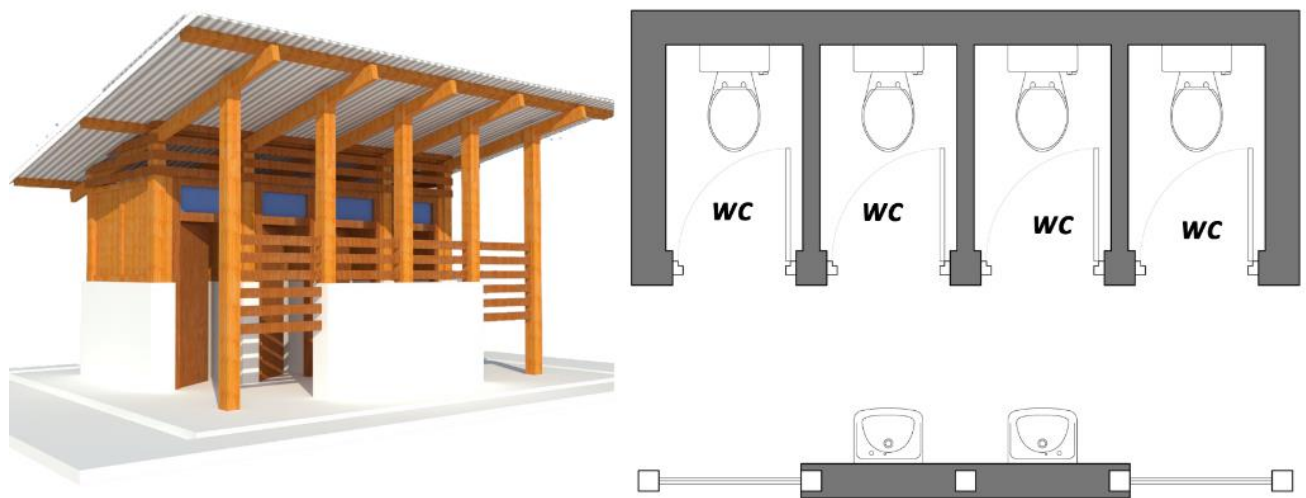
2.1 One male and one female WC, Urinals and external wash basins



2.2 Three female WC, one male WC, Urinals and external wash basin



2.3 Two female wc, 2 male wc and external wash basin



2.4 Two female wc, two male wc, urinals and external wash basin

