Interreg Greece-Bulgaria SMiLe
European Regional Development Fund

EUROPEAN UNION

Strengthening primary Medical care in IsoLated and deprived cross-border arEas

D.4.2.3

Pilot accessibility improvement study

Project Partner 2: Aristotle University of Thessaloniki - Special Account for Research Fund
Department of Medicine, University Campus, Thessaloniki
Tel: +30 2310999137 Fax:+30 2310999131 e-mail: smyrnak@auth.gr

Deliverable ID

Project Code:	
Acronym:	SMiLe
Project Title:	Strengthening primary Medical care in IsoLated and deprived cross-border arEas

Deliverable:	Pilot accessibility improvement study
Version:	Final

Author(s):	Panagiotis Tsalis, Tzoulia Tapali, Aristotelis Naniopoulos

Description:	The current document is the Deliverable D4.2.3 - Pilot accessibility improvement study It presents specific accessibility improvement suggestions for the PHC centre of Iasmos, based on the accessibility evaluation carried out at D4.2.2.
Keywords:	[SMiLe, accessibility improvement, Cross-border Health, Healthcare, Interreg V-A "Greece-Bulgaria 2014-2020" Cooperation Programme, cross-border cooperation, European Union, Thessaloniki, Ardino, Harmanli]

Project Partners

Role	Partner name	Country
Lead Beneficiary	4th Health District of Macedonia Thrace	Greece
Partner Beneficiary 2	Aristotle University of Thessaloniki - Special Account for Research Fund (Department of Medicine)	Greece
Partner Beneficiary 3	Multi-profile Hospital for Active Treatment of Ardino	Bulgaria
Partner Beneficiary 4	Municipality of Harmanli	Bulgaria
Partner Beneficiary 5	National Emergency Aid Center	Greece

Short presentation of the programme

The Cooperation Programme "Greece-Bulgaria 2014-2020" was approved by the European Commission on 09/09/2015 by Decision C(2015) 6283. The total budget (ERDF and national contribution) for the European Territorial Programme "Greece-Bulgaria 2007-2013" is €129,695,572.00. The total financing consists of €110.241.234,00 (85%) ERDF funding and €19.434.338,00 (15%) national contribution. The eligible area of the Programme consists of the Region of Eastern Macedonia-Thrace (Regional Units of Evros, Kavala, Xanthi, Rodopi and Drama) and the Region of Central Macedonia (Regional Units of Thessaloniki and Serres) in Greece and the South-Central Planning Region and South-West Planning Region (Districts of Blagoevgrad, Smolyan, Kardjali and Haskovo) in Bulgaria. The Priority Axes are PA 1: A competitive and Innovative Cross-Border area, PA 2: A Sustainable and climate adaptable Cross-Border area PA, 3: A better interconnected Cross-Border area, PA 4: A socially inclusive Cross-Border area.

Table of Contents

List of Tables and Figures

Introduction

Work package 4 of the SMiLe project aspires to provide an in depth view of the existing situation and initiate actions for the improvement of the accessibility offered by Primary Health Care centres as well as to provide the tools necessary to facilitate the development of accessible infrastructure and services. In order to achieve these goals, the assessment of the existing accessibility level offered by Primary Health Care centres is necessary.

In the frame of Deliverable 4.2 a methodology for accessing accessibility of infrastructure and services was developed. The methodology included the following checklists:

- Checklist for buildings – closed spaces
- Checklist for open spaces and pedestrian routes
- Checklist for health care provision practices and policies

The "Checklist for buildings – closed spaces" examined "structural elements" such as entrances of the buildings, circulation (horizontal and vertical movement), services and equipment of the buildings, emergency cases, signage, acoustics and lighting.

The "Checklist for open spaces" examined factors such as bridging different levels, surface of sidewalks/walkways, walking routes, equipment of sidewalks/walkways and signage, access to public buildings, parking spaces, trees, lighting, telephone booths, ATMs, other obstacles, temporary or not. In addition, the road maintenance level, toilets, rest areas, lighting and perception organization of the environment are examined. This checklist provides the opportunity for assessing open spaces and pedestrian routes that people with disabilities follow.

The "Checklist for policies and practices" examined various issues concerning policies and practices that the PHC centre applies in health care provision.

The results of the above-mentioned evaluation led to accessibility improvement suggestions for the Primary Health Care Centre of Iasmos. These suggestions are presented in the present deliverable.

In order to assist the implementation of the proposed changes, the suggestions made in this deliverable are presented in the same order as the evaluation results presented in Deliverable 4.2.

Suggestions for the improvement of accessibility level of the PHC of Iasmos

1.1 Parking spaces

12 parking spaces for the use of the centre's personnel and the general public are available at the centre's yard. The spaces are covered and have dimensions W = 6,3m and L = 4,2m. This allows at least two cars to park at each parking space. The shed covering the spaces leaves a free height of 2,25m.

Figure 1: General view of the building

Vehicles also park at various other areas of the centre's yard. No designated parking spaces for users with restricted mobility are foreseen.

Furthermore, in some cases vehicles where parked at the pavement adjacent to the centre's building, thus interrupting the unobstructed movement of the building's visitors.

Figure 2: Vehicles parked on the building' s pavement

Since no designated parking spaces are yet envisioned for disabled visitors, it is proposed that new ones, designed according to relevant Greek legislation and guidelines are constructed.

Accessible parking spaces ensure easy access through bigger than usual dimensions (about 3.50X5.00m).

The proportion of car parks for people with disabilities is 5% of the total number of spaces foreseen (at least one position in small parking spaces). That is, for the PHC centre of Iasmos, at least on parking space is mandatory.

This space must be marked with the International Symbol of Access, at a prominent spot as well as on the floor.

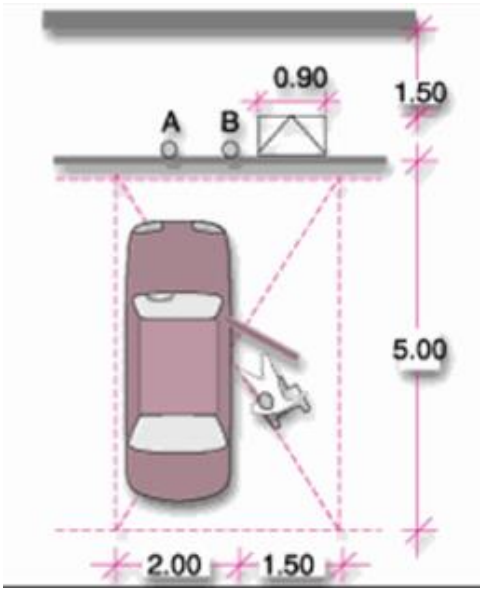


Figure 3: Guideline on the creation of accessible parking space

The accessible parking space should be located at a distance of less than 50 meters for the building's main entrance. Due to the existing yard configuration, it can be located at the area of the already implemented parking spaces.

An additional parking space can be created near the building's third entrance, which is located at the eastern part of the building, and serves as a direct entrance to the laboratories.

Figure 4: Parking space at the building' s secondary entrance

In general, accessible parking spaces parallel to the pavement should be avoided. However, since this is the only solution for creating an accessible space near this entrance, the space should be deigned with length not less than 6.00m so that it is possible for a person to pass between two parked -one behind the other - cars.

Thus, the space should be implemented according to the following configuration

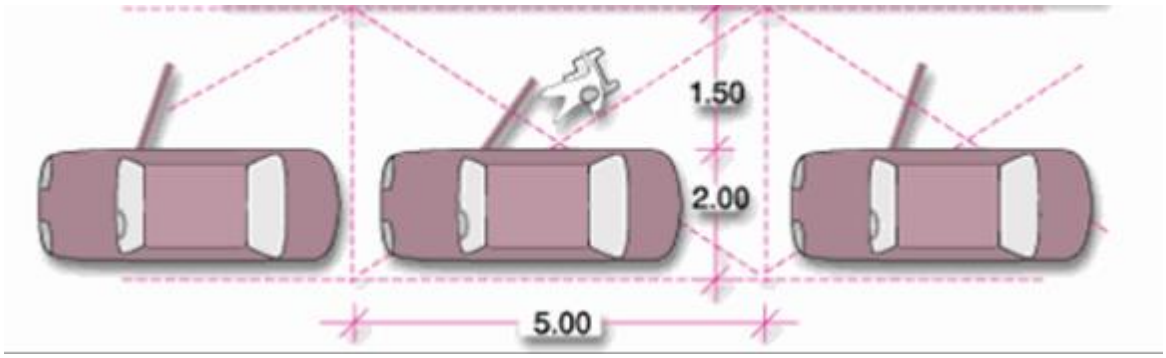


Figure 5: Guideline on the creation of accessible parking space

Furthermore, parking of other visitor's vehicles should not be allowed at the corridor leading to this entrance due to space restrictions.

1.2 Access to entrances

Access to the centre's yard is achieved through a main entrance which remains open. A smaller door is available for pedestrians, although due to the vast opening next to it remains unused.

Figure 6: Entrance to the centre' s yard

A pavement created by concrete tiles leads to the yard's entrance and continues to the inside. The pavement has sufficient width (varying from 2 up to 2,7m.), however it appears to have maintenance problems which create an uneven and not homogenous surface. Thus, resurfacing is considered essential for unobstructed use, focusing on maintaining the maximum available width of 2,7m.

Figure 7: The yard' s pedestrian pavement

Minimum pavement width is defined as 2.05 m, in which are included 0.20m for architectural protrusions, 1.50m for free pedestrian zone and 0.35m for signage, protective rails and the construction of a kerb.

The width results from:

- all additional needs of urban equipment (waste boxes, mailboxes, telephone booths, kiosks, public sanitary facilities, etc.)
- road service activities (road marking, signposts, information signs, urban stops transport, etc.),

- planting,
- people waiting in front of store windows, where the main use of the area is determined by the design as commercial, etc. The width is added to the minimum width of the pavement and the sum determines the mixed width of the pavement, which varies depending on the needs.

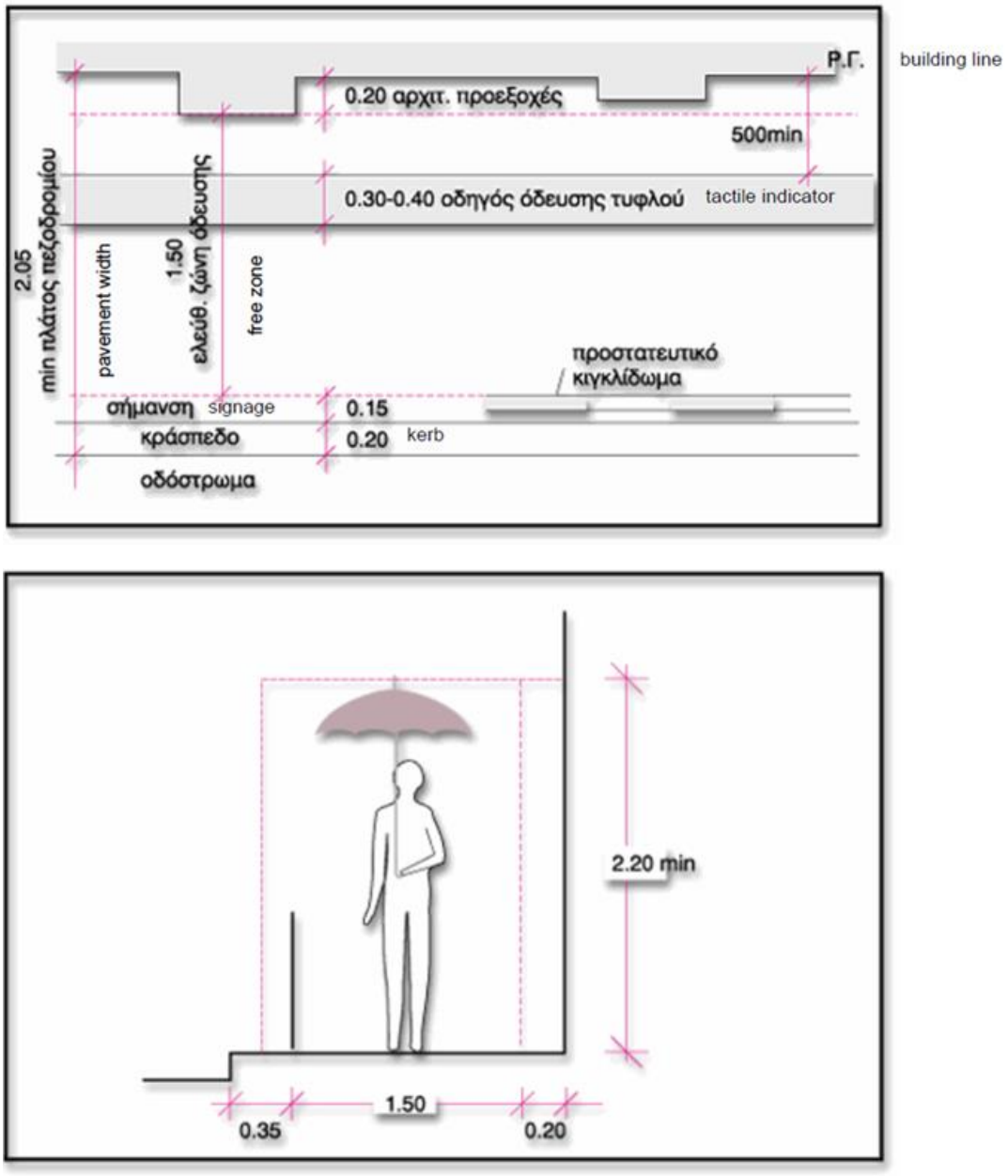
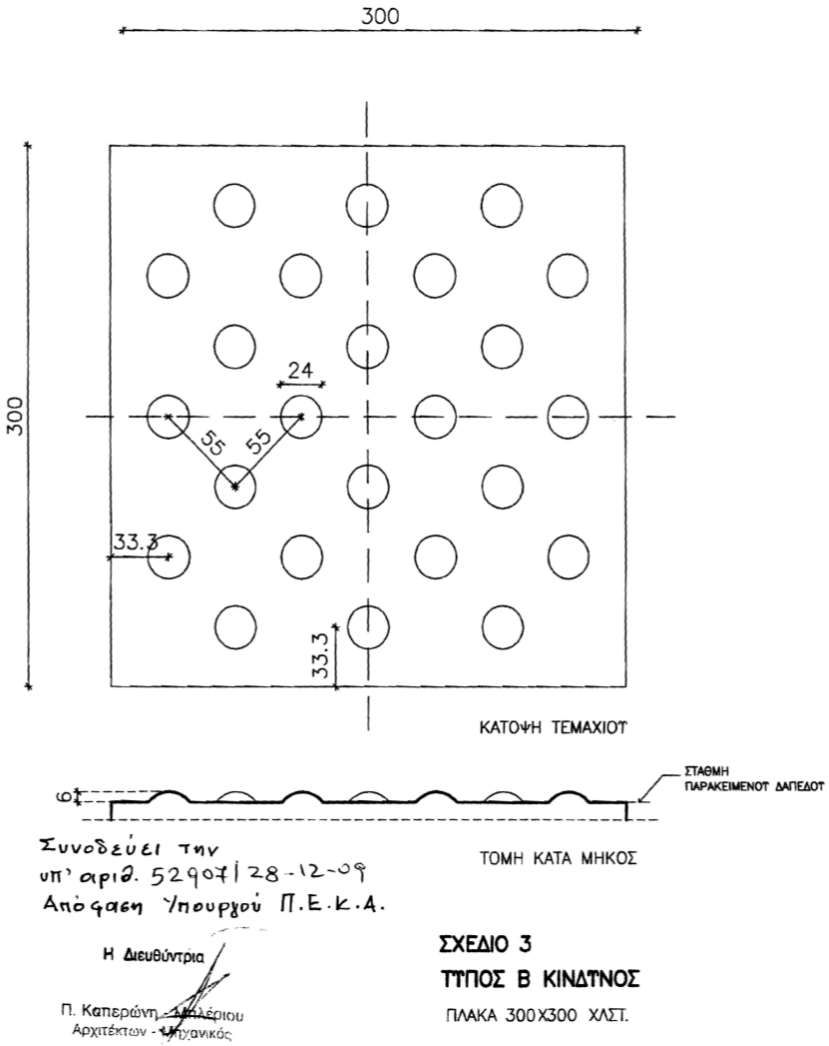


Figure 8: Pavement design according to Greek guidelines

Furthermore, no curb ramps are available (curb height 14cm.). These should be constructed at each end of the pavement. According to the Greek accessibility guidelines, these should be constructed using Type B: "DANGER" and Type D: "SERVICE" tactile tiles.

Type B tiles are always yellow and their width is 0.30m. These are mandatory at the beginning and at the end of the ramps and stairs, throughout their width and at 0.30m from the connection of the ramp and the horizontal levels or the edge of the first and last step.

Type B tiles are constructed according to the following template



Especially at kerb ramps of pavements, they are placed only at the end of the ramps at the side adjacent to the road and at the entire width of the pedestrian crossings or the pedestrian crossing islands.

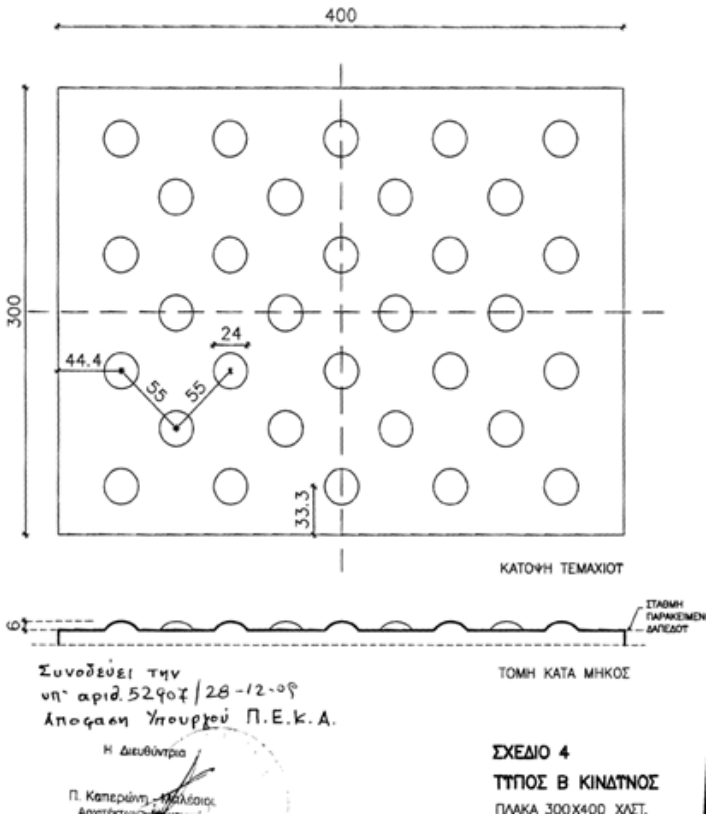


Figure 9: Design of type "B" tiles according to Greek Legislation

Type D: "SERVICE" tiles are placed to lead visually impaired persons to services (transportation stops, telephone booths, special tactile signs etc.) or to entrances of adjacent public and private service buildings. Type D plates, with the stripes perpendicular to the user's movement, are used for the surface of kerb ramps.

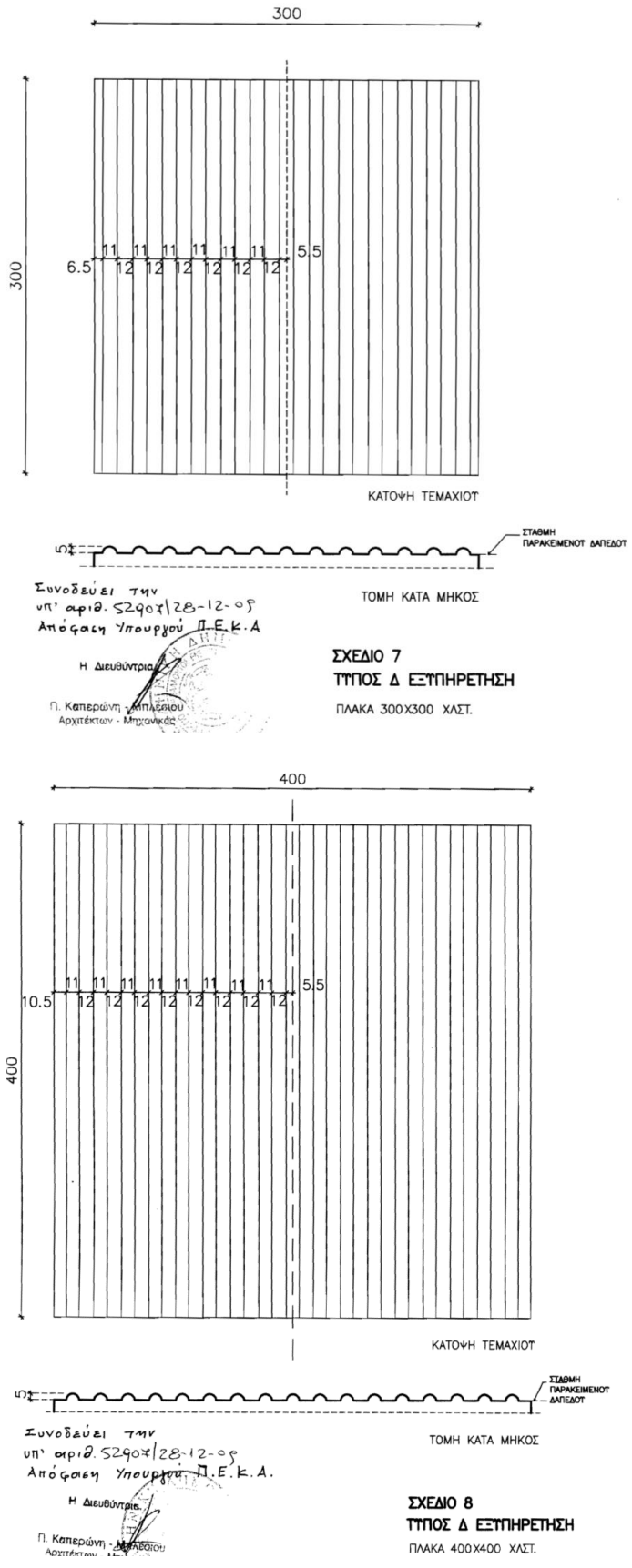


Figure 10: Design of type "D" tiles according to Greek Legislation

In general, tiles can be made from various materials, but their dimensioning, the relief of their final surface according to the above-mentioned drawings, and the use of yellow colour for the "danger" tiles is mandatory.

Kerb ramps should be at least 1,50m. wide. Their slope should be according to the following table:

Pavement height (m)	Ramp slope		Required length	
	Desired (%)	Minimum (%)	Desired (m)	Minimum (m)
0,00 – 0,07	5 (1:20)	8 (1:12)	1,40	0,84
0,071 – 0,10	5 (1:20)	8 (1:12)	2,00	1,20
0,101 – 0,12	5 (1:20)	8 (1:12)	2,40	1,42
0,121 – 0,15	5 (1:20)	8 (1:12)	3,00	2,20
0,151 and up	5 (1:20)	8 (1:12)		

Thus, the current pavement height leads to a minimum required ramp length of 2,8 meters in order to achieve the desired 5% slope.

Figure 11: Indicative application of the accessibility guidelines

The following drawing depicts the proposed design for the implementation of ramps at the PHC centre's courtyard, according to the latest legislation and guidelines.

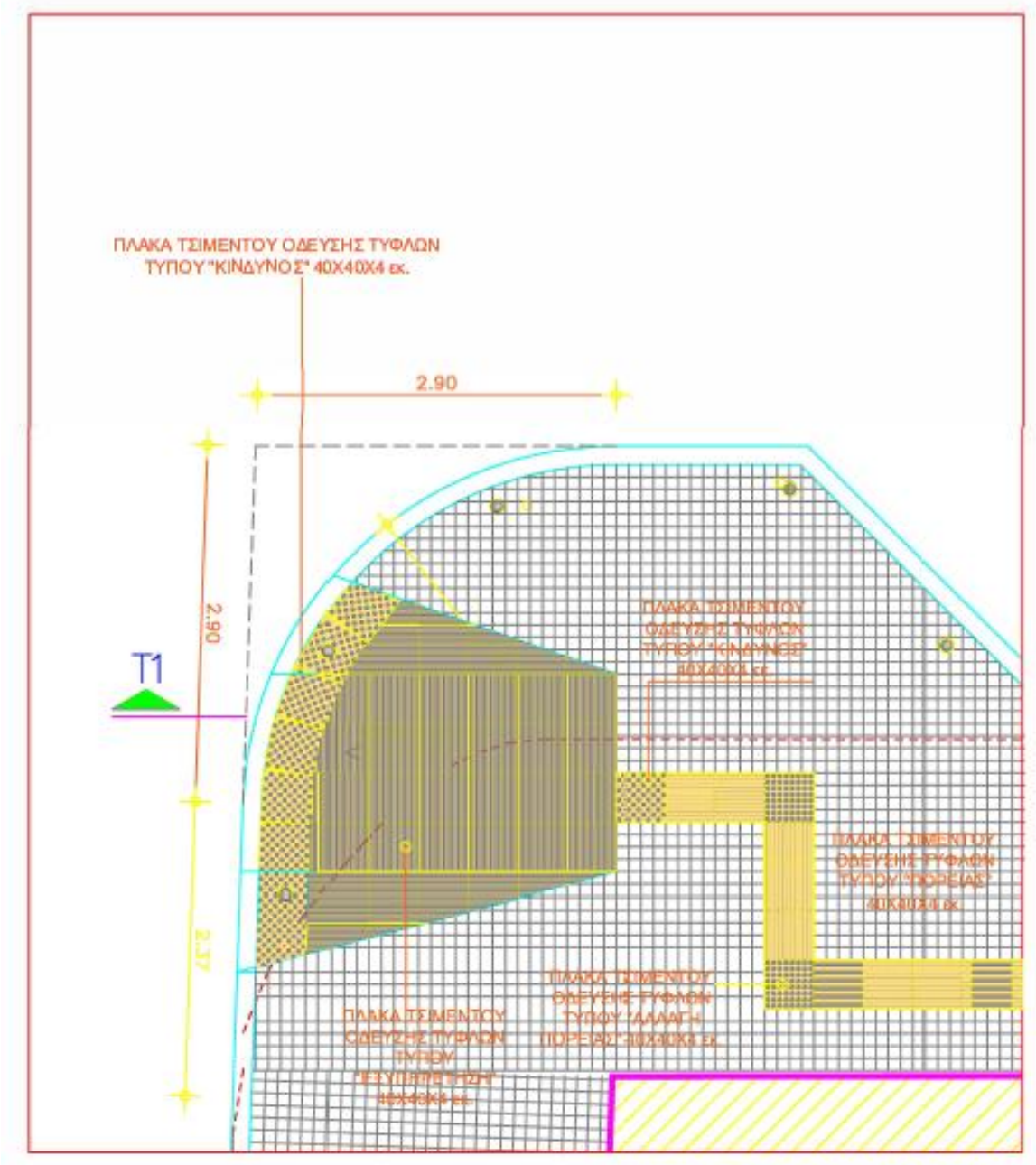


Figure 12: Indicative design of ramp

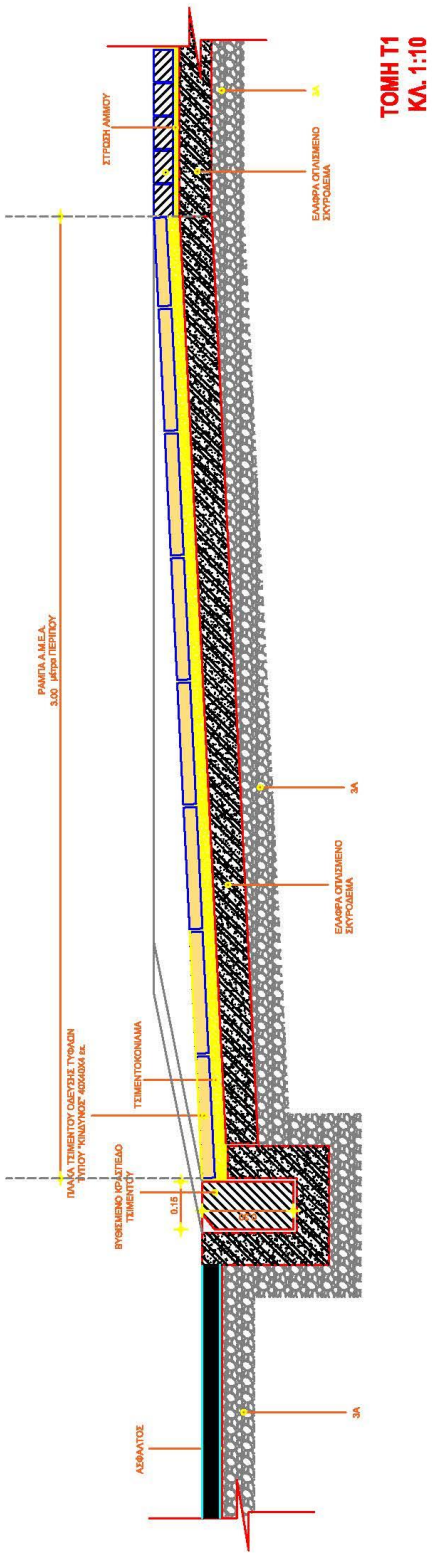


Figure 13: Indicative design of ramp

1.3 Entrances

In total, 4 entrances are used in the PHC centre, with 3 of them used by the general public and a secondary one used only on specific occasions by the Centre's personnel.

The main entrance has a small height difference with the adjacent pavement which is bridged through a concrete ramp. Its length is 3,9m., its width 2,25m. with an inclination of 6,9% with slight variations due to its construction. The maximum inclination indicated by the Greek accessibility guidelines is 5%, however the ramp created can be considered serviceable for wheelchair users. No handrails or tactile surface indicators are available. The concrete surface seems to offer sufficient slip resistance characteristics.

Figure 14: The building' s main entrance

Since the area at the right end of the ramp is not covered by railing or skirting, it is proposed that the ramp width should continue until the adjacent wall.

The main obstacle towards the main entrance is a 4cm. threshold that can be non-negotiable for wheelchair users, especially for users of motorized ones. Cheap and effective solutions for bridging this height difference could include the creation of a small concrete ramp or the installation of a small, prefabricated metal ramp, similar to the one pictured below.

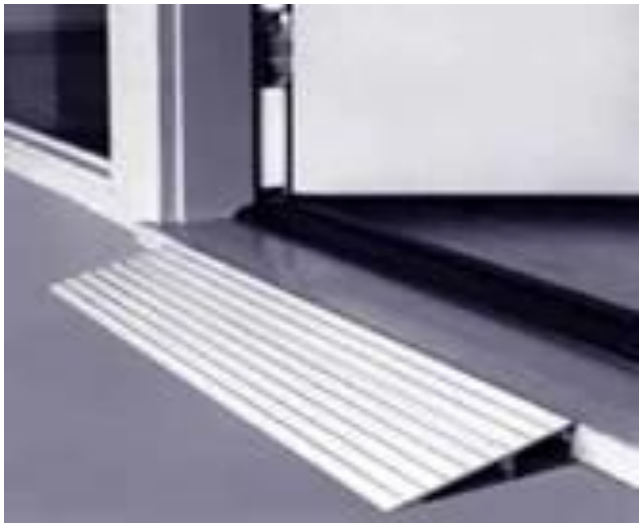


Figure 15: Main entrance and indicative threshold ramp

A landing is available in front of the main entrance. Its dimensions are 4,35X2,55m., which are appropriate according to the Greek accessibility guidelines giving enough space to allow appropriate access. The main door has two opening leaves, with the total free width reaching

1,64m. and each leaf having a clear width of 0,78m. While the total free width is sufficient for access of wheelchair users, the single leaf opening is not sufficient, particularly for users of motorized ones. A double door with a single leaf being more than 0,9m. wide would be preferable.

The door opens manually, to the inside of the building, through a handle located at 1,05m. A doorbell is located too high for wheelchair users or users of smaller statute (1,6m.) The recommended height of the doorbell should not be more than 1,2m. for the ground.

A vestibule is created after the main entrance with a width of 2m. and a length of 2,2m. These dimensions are sufficient for ease of use. The vestibule leads to an internal door, with similar characteristics to the main one, with a clear length 1,6m. and each leaf having a clear width of 0,68m. Again, while the total free width is sufficient for access of wheelchair users, the single leaf opening is not sufficient, particularly for users of motorized ones. The door is operated manually through a door handle located at 1,1m. At the following drawing solutions for vestiblules of similar dimensions are proposed.

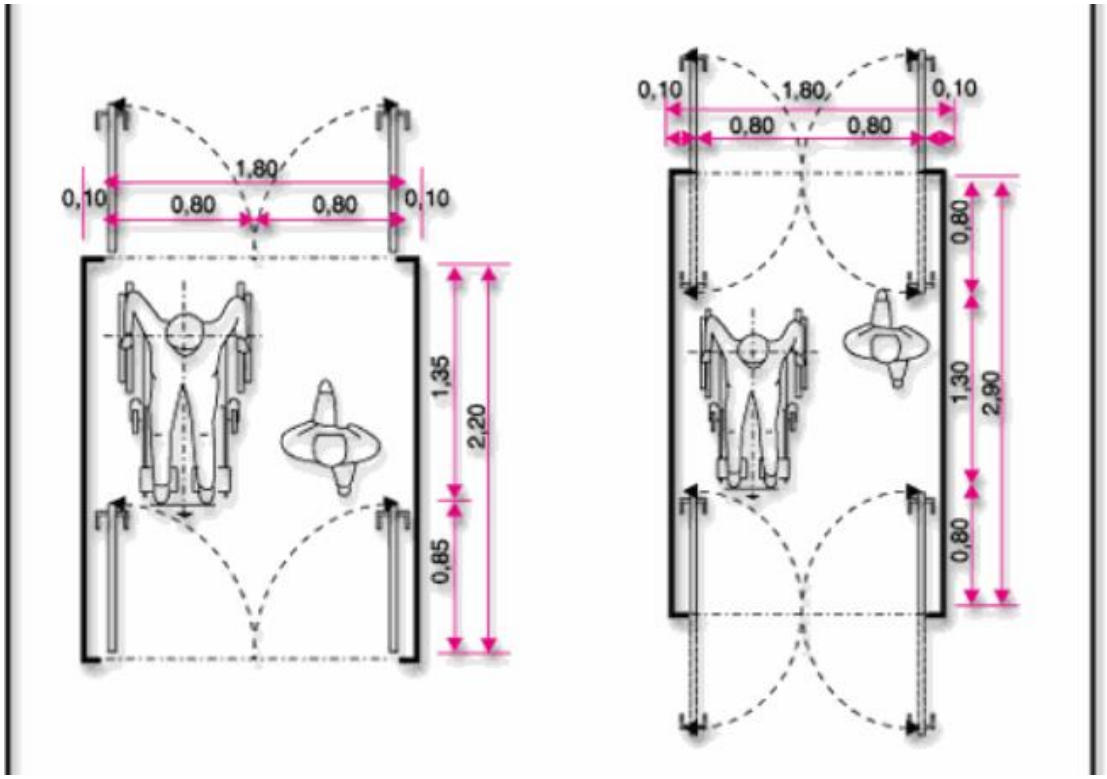


Figure 16: Vestibule configuration according to the Greek accessibility guidelines

The shown vestibule design ensures ease of use and sufficient space that would allow unobstructed entrance of a wheelchair user

The 2nd entrance is used to achieve direct access to the emergency room and is located right next to the centre's main entrance.

A concrete ramp leads to the entrance. The ramp's inclination is 12,4%, which is much higher than the maximum allowed by the Greek accessibility guidelines. The ramp is 2,9m. long and 2,0m. wide. The ramp leads to an opening door which is 1m. wide, opening to the inside of the building. A door handle is located 1m. high.

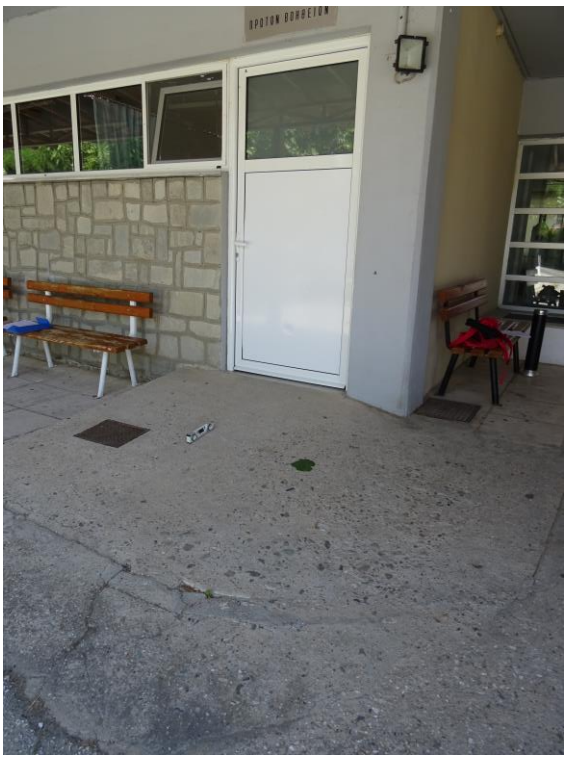


Figure 17: The second entrance leading to the emergency room

In this case the creation of an external ramp, parallel to the adjacent wall is proposed. The ramp's length is proposed to be at least 5m. with a suitable landing at the front of the emergency room's entrance

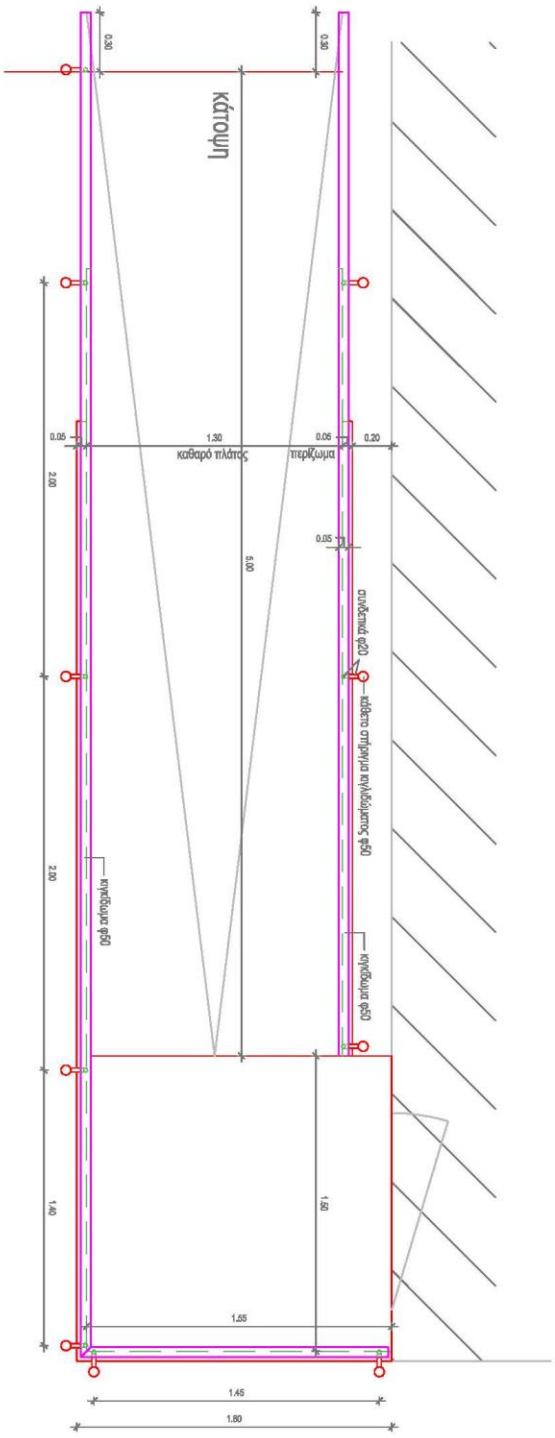


Figure 18: Indicative ramp design

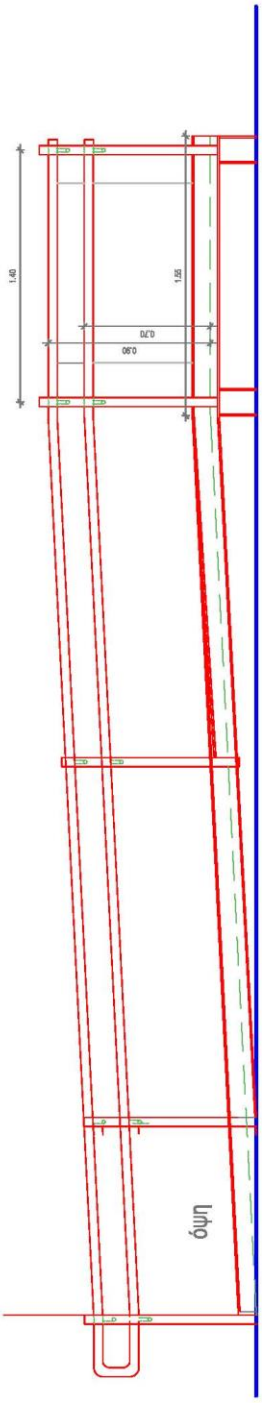


Figure 19: Indicative ramp design

Figure 20: Photo of similar ramp design

Alternatively, the installation of a small vertical platform lift could be proposed. In this particular case, the figure shows a lift with considerable length (1,5m) in order to better suit the building's needs. This particular lift requires a very shallow pit which make it easier to install in existing buildings. Its surface can be changed according to the customer's specifications.

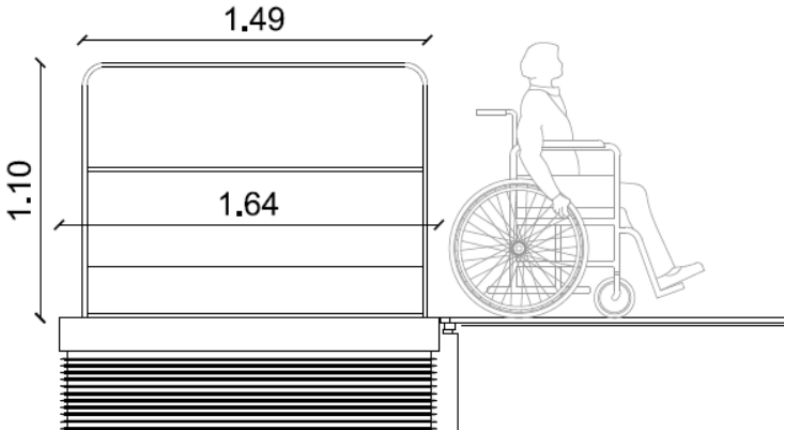


Figure 21: Design of vertical lift.

Figure 22: Photo of vertical lift.

If neither of these solutions is followed, entering of wheelchair users should be made through the building's main entrance and through the internal door leading to the emergency room. The International symbol of Access should be installed at the main entrance to indicate the accessible route.

Figure 23: International Symbol of Access (white on black or blue)

The third entrance, located at the eastern part of the building, serves as a direct entrance to the PHC laboratories. A ramp of 8,5% inclination, also made out of concrete, leads to it with a landing of sufficient dimensions with marble surface. Its length is 2,2m and its width id 3,15m. It should be noted that a cable, located at 1,45m. high, could be dangerous for visitors with restricted vision. Obviously, this should be immediately removed.

The door has a clear length 1,5m. and each leaf having a clear width of 0,73m. Again, while the total free width is sufficient for access of wheelchair users, the single leaf opening is not sufficient, particularly for users of motorized ones. The door is operated manually through a door handle located at 1,05m.

Figure 24: The building' s third entrance

The installation of suitable handrails could assist visitors with restricted mobility in negotiating this particular ramp. The proposed type is depicted in the following drawing:

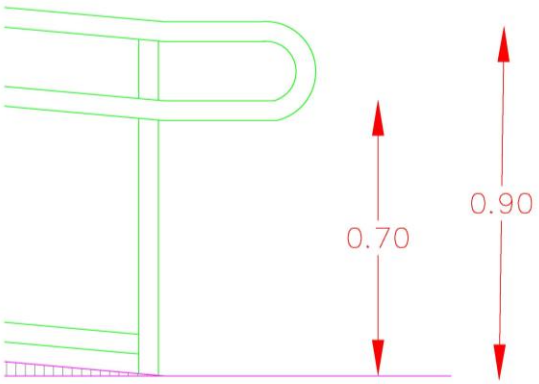
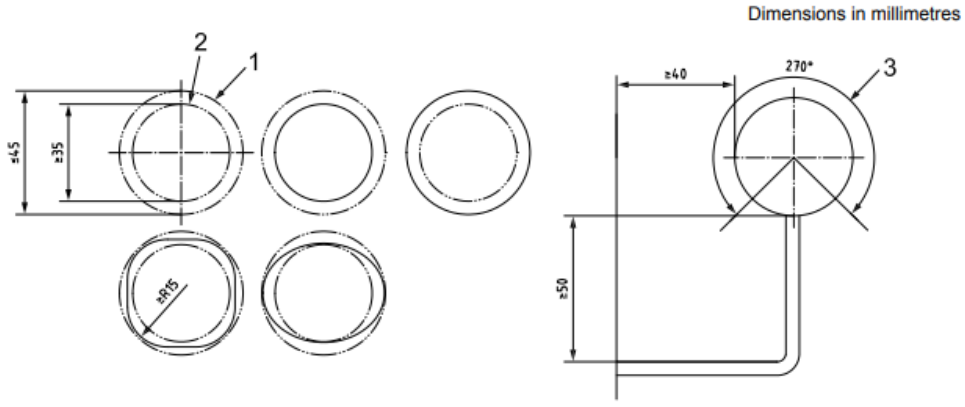


Figure 25: Proposed type of handrails according to the Greek accessibility guidelines

The handrails' material, its shape and its anchorage must ensure the user's restraint, without at the same time interrupting the movement of the palm of the user's hand over it. The surface of the handrail should be smooth. Its shape must allow for a safe and comfortable grip by palm of the user. One such form is that of a round or a rounded cross-section, at least 4-5 cm in diameter.

The anchorage of the handrail can be made on the railings or on the wall. The free handrail distance from the final surface of the railing or wall must be 4.5-5cm. This surface must be smooth to prevent injury to the joints of the user's fingers.



Key

1 maximum inscribed circle for handrail profile
2 minimum subscribed circle for profile
3 minimum 50 mm clearance under top 270° arc along full length of handrail

Figure 26: Proposed profile and anchorage of handrails

The gap between the handrail and the top of the railing should be between 5 and 15cm. It is recommended to always place two continuous handrails on both sides of the ramp at 0.90 and 0.70m heights from the floor to make it easy to use for all users as well children and wheelchair users. If the handrails are to be used as auxiliary means for traction of the user, the free distance between them should not exceed 0,90 m. Finally, the handrails should always protrude at least 30 cm horizontally at the beginning and end of a ramp and continue on its landing.

It is necessary to prevent the wheels of the wheelchair to approach the vertical elements of the railing, causing a risk of injury to the user and the diversion of the wheelchair. The height of the skirting should range from 5 to 10cm. If there is no curb on either side of the ramp, and if a railing is installed, a horizontal bar should be placed 10cm from the floor.

The fourth entrance, which is a secondary one located at the west side of the building, is used only by the personnel. Since the height difference with the adjacent pavement is bridged with a staircase (0,33m) it cannot be used by wheelchair users. The door has a clear length 1,7m. and each leaf having a clear width of 0,85m.

This is a secondary entrance to the building; however it may operate as an emergency exit. No emergency evacuation plans were available during our visit, however the creation of a small ramp would be helpful in order for this exit to be accessible to wheelchair users.

Figure 27: The centre' s secondary entrance

Alternatively, the installation of a small vertical platform lift could be proposed in this case as well. The following figure shows a lift with considerable length (1,5m) in order to better suit the building's needs. This particular lift requires a very shallow pit which make it easier to install in existing buildings. Furthermore, its surface can move forward allowing its installation without damaging the existing stairs, thus requiring minimum interventions. Its surface can be changed according to the customer's specifications. This proposal however does not suit the use of the door as an emergency exit.

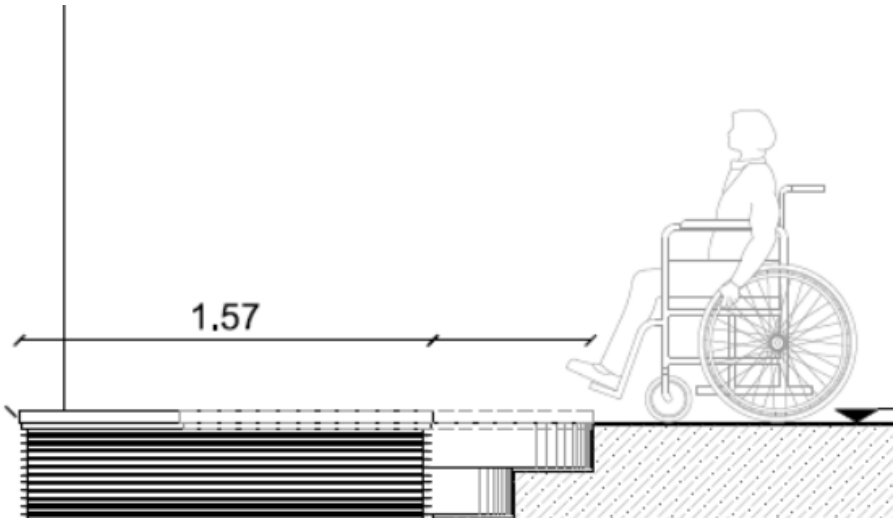


Figure 28: Design of vertical platform lift

It should also be noted that at each door, either internal or external, appropriate door handles should be used, preferably D-level or vertical, according to the following figure.

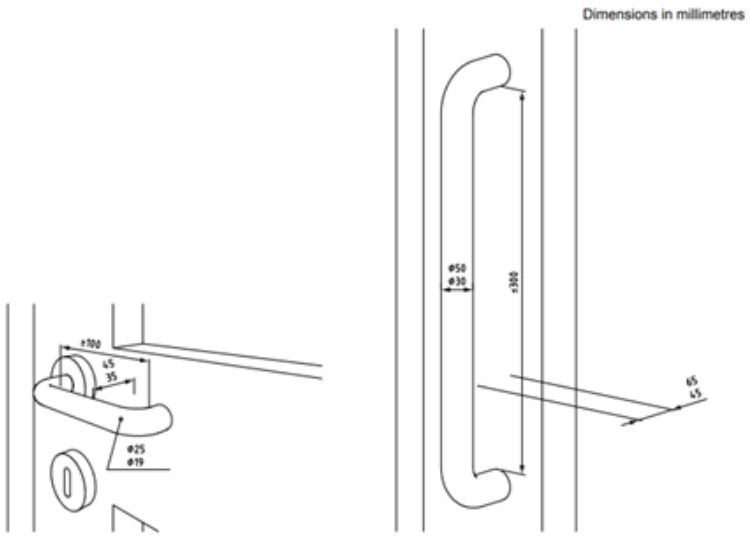


Figure 29: Examples of D-lever and vertical door handles

1.4 Horizontal circulation

The main entrance leads to the centre's patients' waiting room, where also the centre's information desk is located. The room has considerable dimensions that make its negotiation easy, even for wheelchair users. The use of marble for the floor creates reflections for visitors with restricted vision and could create a slippery surface for visitors with mobility impairments.

Figure 30: The centre' s waiting room and seats located at the centre' s corridors

The main hall, as well as the building's interior corridors, have visitor seats with enough colour contrast with the surroundings, thus assisting visitors with restricted vision with their identification. The seats' base is located at 42 cm. high. The lack of arms at the chairs allows users to sit easily but can be detrimental for visitors that need additional support.

According to ISO 21542, a range of different types of seating should be provided complying with:

- seat height 400 mm to 450 mm,
- back support height 750 mm to 790 mm,
- seat depth 400 mm to 450 mm,
- angle of seat to backrest 100° to 105°,
- armrest height 220 mm to 300 mm above seat,
- armrest set back from front of seat · 75 mm,
- a minimum 150 mm set back under the seat for feet when standing up.

Armrests should be omitted on some benches to allow lateral transfer.

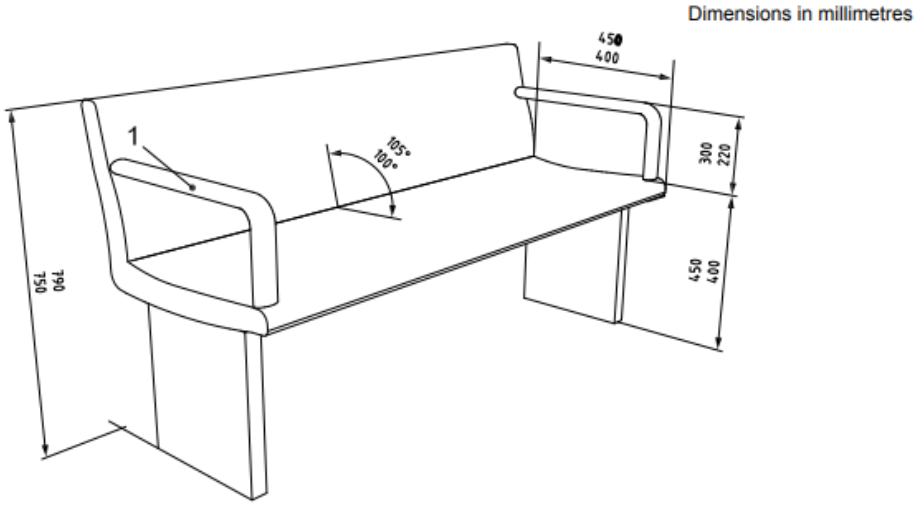


Figure 31: Proposed configuration of seating

The information desk itself is located at 1,1m. high, not allowing wheelchair users to have unobstructed eye contact with the centre's employee. The desk has a useful surface which can be used by the visitor in order to fill in forms etc. The light grey colour against a white background does not create sufficient colour contrast.

Figure 32: Info desk at the hospital' s waiting room

According to the Greek accessibility guidelines, where reception or transaction counters are provided, a part of them at least 1.00 meters in length must be made at a height 0.80m from the floor. A solution similar to the one in the following pictures is proposed.

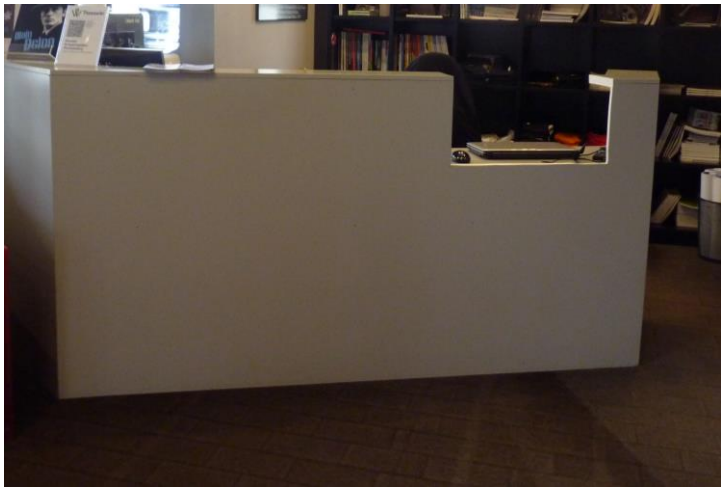


Figure 33: Proposed solution for the info desk

The blue door frame creates enough colour contrast with the surroundings assisting visitors with restricted vision. Doors and their frames should have strong colour contrast with the surrounding walls. Equally intense colour contrast should be provided between the door leaf and the handle. The doors themselves could also be painted in a darker colour that still offers sufficient contrast with its frame.

In case of glass panels, signs, at a height of 1.40-1.60 m from the floor and in bright colours, should be placed to help people with vision problems.

Figure 34: Internal door leading to corridors. Opening to both directions, 1,3m. clear width

Furthermore, handrails could be installed at the walls adjacent to the internal doors, simlar to the types used at ramps and staircases in order to assist the movement of visitors with reduced mobility. Indicative type of suggested handrail is the following:

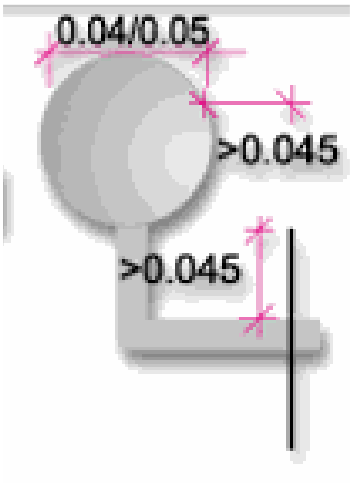


Figure 35: Handle example

1.5 Examination rooms – offices

As it has already been mentioned, one of the building's entrances, located next to its main entrance, leads to the centre's emergency room. The hall's dimensions are 6,00 X 5,70m.

3 examination tables are located at the room with, the minimum available space around the tables being 70cm, which is not sufficient for the approach of wheelchair users. 2 of them have fixed heights from the floor (70 and 66cm.), with one having adjustable height. Between the two examination tables there is clear space 1m wide available, with the space towards the shelves located at the room being reduced to 70cm.

Figure 36: Examination room

According to the guidelines "Access To Medical Care For Individuals With Mobility Disabilities" published by the U.S. Department of Justice and the U.S. Department of Health and Human Services, an individual who uses a wheelchair or other mobility device, must be able to approach the exam table and any other elements of the room to which patients have access. The exam table must have sufficient clear floor space next to it so that an individual using a wheelchair can approach the side of the table for transfer onto it.

The minimum amount of space required is 80cm by 120cm. Clear floor space is needed along at least one side of an adjustable height examination table. Since the location of the examination beds is not fixed, the required space can be easily achieved, at least around the bed with adjustable height.

Figure 37: Space required for wheelchair users

Because some individuals can only transfer from the right or left side, providing clear floor space on both sides of the table allows one accessible table to serve both right and left side transfers. Another way to allow transfers to either side of exam tables, particularly when more than one accessible examination room is available, is to provide a reverse furniture layout in another accessible examination room.

Figure 38: Patient transfer at examination table

The room should also have enough turning space for an individual using a wheelchair to make a 180-degree turn, using a clear space of 1,5m diameter, or a 1,5m. X 1,5m. T shaped space. This can be achieved in the examined room, particularly if movable chairs and other objects, such as waste baskets, are moved to provide sufficient clear floor space for manoeuvring and turning.

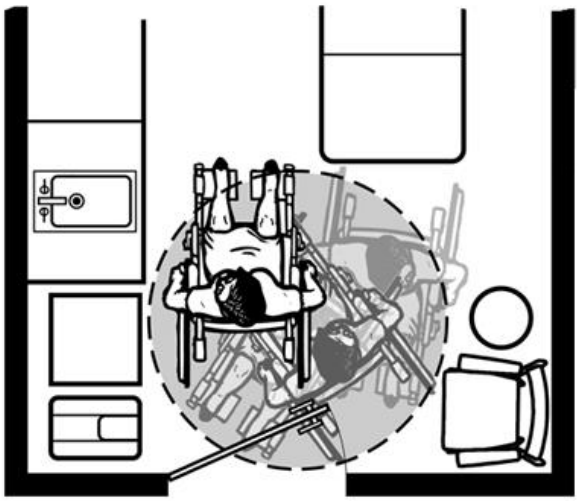


Figure 39: Movement of wheelchair user in examination room

An internal door leads to the Centre's waiting room. It's an opening, 2 leaf door, with its free width being 1,40m. No door handles are installed. This is the door that can allow access to the emergency room to wheelchair users in case they do not want to negotiate the external ramp.

Figure 40: Internal door leading the centre' s waiting room

Door and gate hardware must:

- allow one-hand operation
- not require tight grasping, pinching, or twisting of the wrist

Hardware that can be operated with a loose grip or closed fist, such as lever-shaped handles and U-shaped pulls, accommodates the greatest range of users. (Closed-fist operation, while advisable, is not mandated by the Standards). Round door knobs do not comply because they require twisting of the wrist.

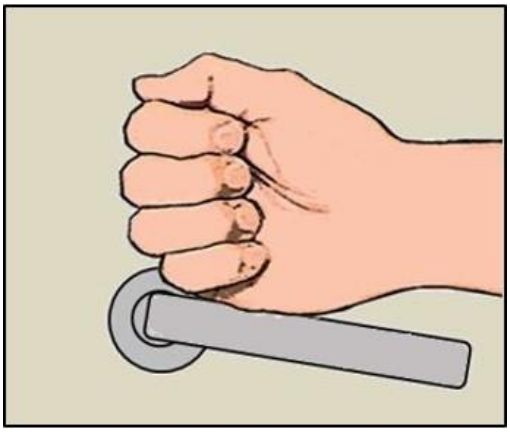


Figure 41: Door handle example

As far as room configuration is concerned, according to the guidelines "Access To Medical Care For Individuals With Mobility Disabilities" published by the U.S. Department of Justice and the U.S. Department of Health and Human Services, the following provisions should be made in room configuration:

1. A clear floor space, 80cm. X 120cm. minimum, adjacent to the exam table and adjoining accessible route make it possible to do a side transfer.
2. Adjustable height accessible exam table lowers for transfers.
3. Providing space between table and wall allows staff to assist with patient transfers and positioning. When additional space is provided, transfers may be made from both sides.
4. Amount of floor space needed beside and at end of exam table will vary depending on method of patient transfer and lift equipment size.
5. Accessible route connects to other accessible public and common use spaces.
6. Accessible entry door has 80cm. minimum clear opening width with door open 90 degrees.
7. Manoeuvring clearances are needed at the door to the room.

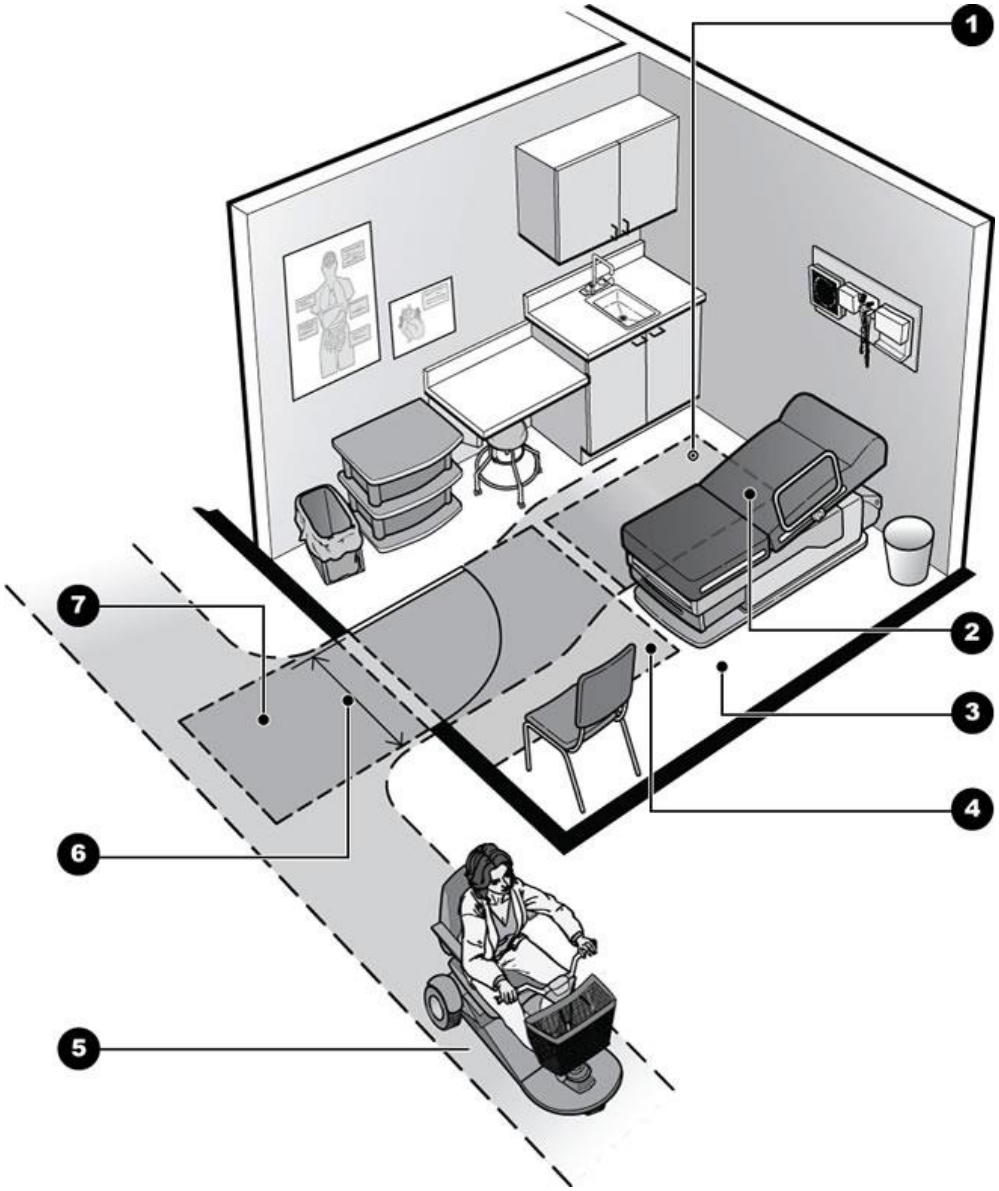


Figure 42: Room configuration example

The abovementioned recommendations can be implemented in all the PHC centre's examination room. In particular, the room where blood sampling takes place is one of the most frequently used. The chair has arms that cannot be removed which may cause difficulties in the transition of a wheelchair user. The seat is located 62cm high, with the free width to either side being 65cm, again restricting the transition of a wheelchair user. Thus, the acquisition of a new chair is considered necessary.

Figure 43: Blood sampling room

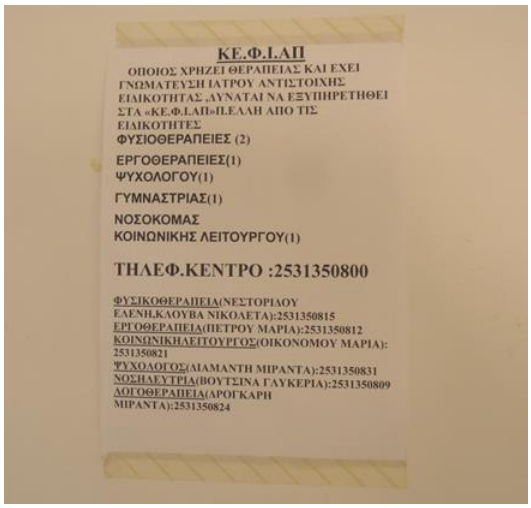
There is a protrusion of 6cm at the room's floor where, according to the centre's employees, an opening that serves an underground freshwater container is located. This does not allow circulation of wheelchair users at the rear of the room. Removing this is considered essential to allow access to wheelchair users.

Figure 44: Protrusion at the room' s floor

1.6 Signage

The building does not seem to have a signing study and does not have a standardized template for its signs. In many cases, the signs are created by the personnel to provide visitors with useful information. No tactile signage is available, and no colour coding is used in any form.

Figure 45: Signs at the building' s exterior



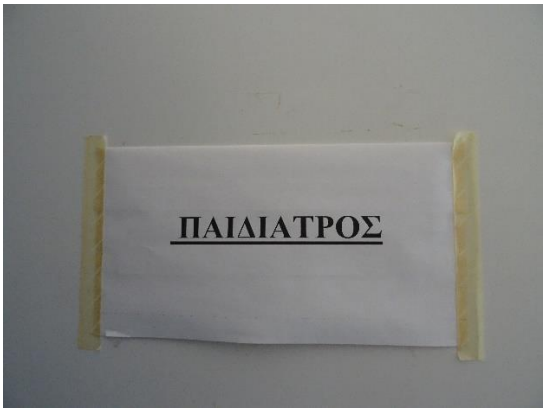


Figure 46: Hand made signs at the building' s interior

Figure 47: Signs at the building' s interior. Reflections makes them difficult to read

According to the Greek accessibility guidelines, signs can be divided into two major categories:

- Road signs
- Signs for building and outdoor signage.

The function, shape, shape, etc. of the road signs is prescribed by the New Road Traffic Code (Law 2094 182 / A / 25.11.92). The plates P-71 and P-72 are regulating car parking for people with reduced mobility. P-60 and P-71 are informative whereas Pr-4d and Pr-4e are additional and are always combined with other main signposts.

The above signs contain the International Symbol of Access with its design slightly modified. The P-60 sign must be accompanied by an explanatory text or other plan relating to the reason for its placement.

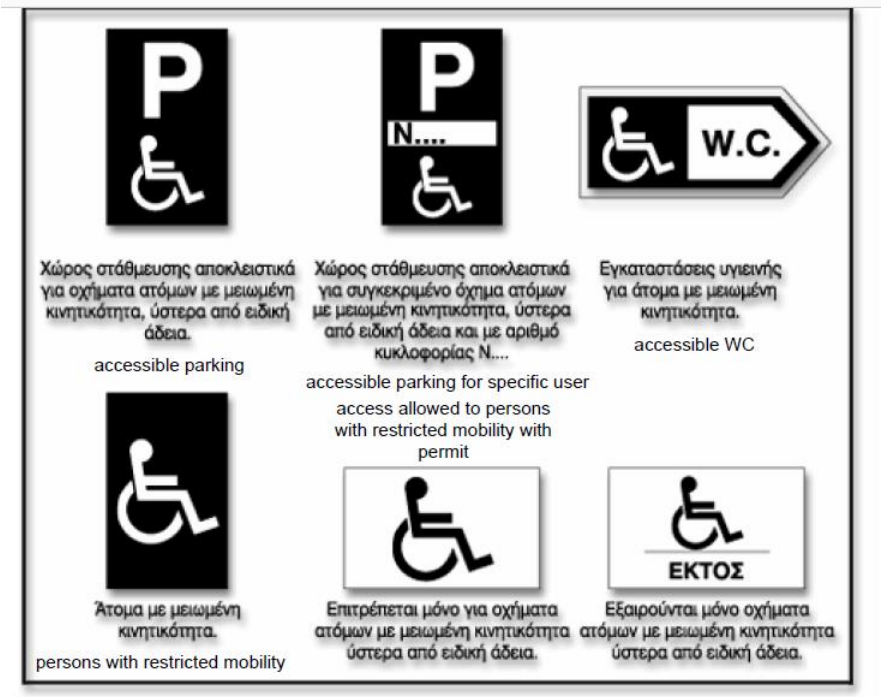


Figure 48: Signs depicting accessibility provisions

When placed in contact and parallel to the walls, signs must be at a height of 1.40m - 1.60m. When they indicate a service (e.g. WC, office, waiting area, etc.) should be placed next to and not on the door, on the side its handle is located. The same applies to the numbering of spaces.

The following figure depicts sign placement according to ISO 21542

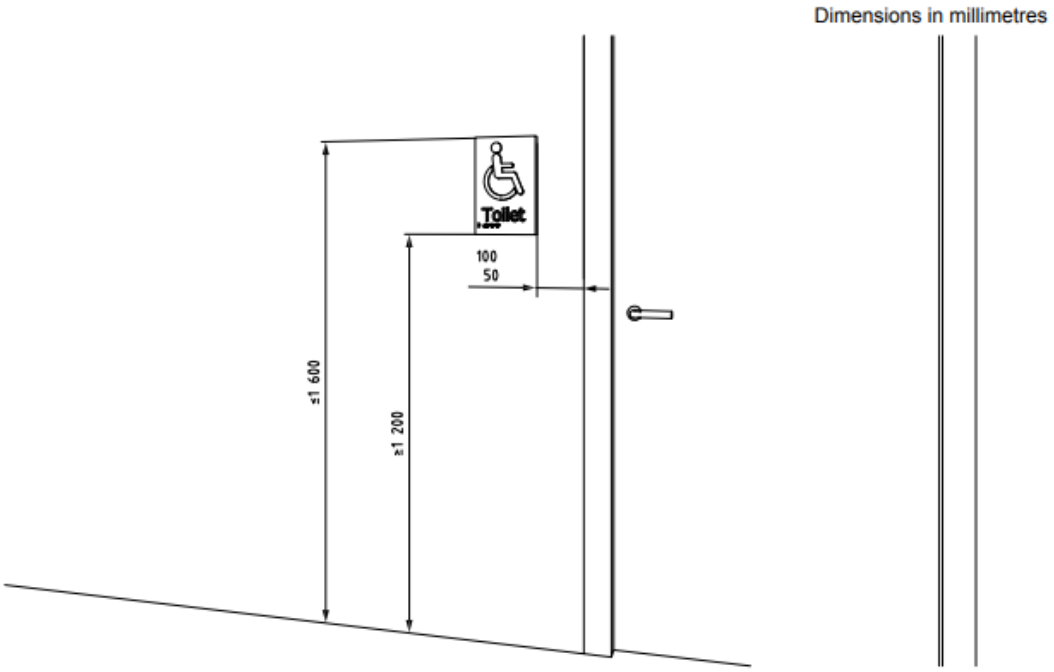


Figure 49: Location of signs on the latch side of the door

When placed inside the buildings suspended from the ceiling or fixed vertically to the walls, their lower edge should be 2.20m. from the floor.

When placed outdoors, outside of the public routes, they can be at 1.40m - 3.50m high. from the ground.

When placed outdoors within public routes their lower edge must be 2.20m. from the ground. Where they are fixed to posts, their location must be appropriately labelled on floor so that they do not act as a barrier to people with vision impairments.

Generally, the signs must be positioned so that they do not prevent movement and do not cause accidents.

There must also be a contrast between the sign and its background according to the following table:

Background	Sign	Text or/and Drawing
Dark Wall or Wall material (black, red, dark gray, green etc.)	White	Black or dark colour
Wall of light colour or material (beige, or light grey)	White	Black or dark colour
Wall white or too open (washed) coloured	Black or dark colour	White
Green leaves	White	Black or dark colour

According to United Nations' "Accessibility for the Disabled - A Design Manual for a Barrier Free Environment" guidelines, the following figure depicts the relation between the text height and the reading distance. For example, this leads to a minimum 2cm. high text for a 2m. reading distance.

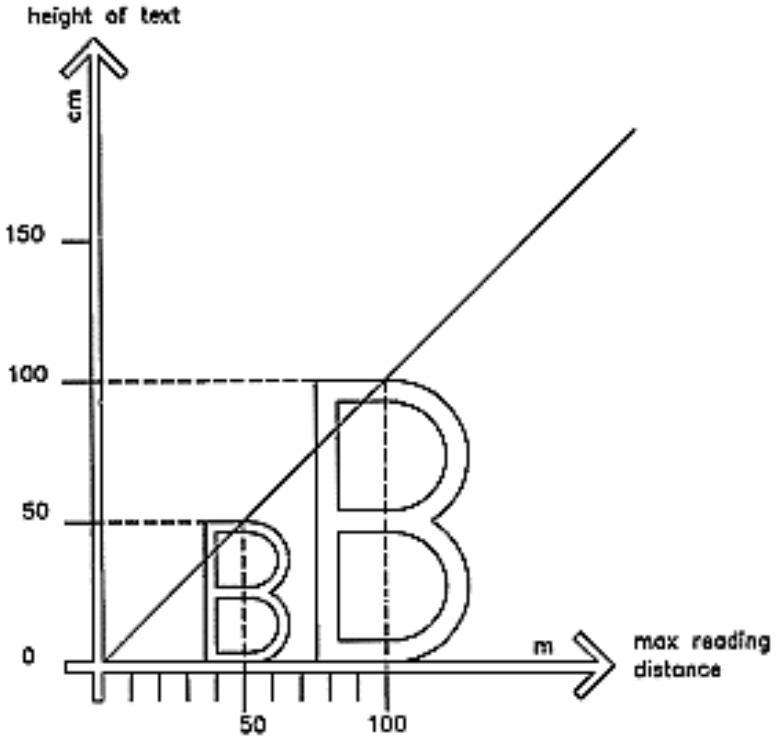


Figure 50: Height of text for signs compared to max reading distance

1.7 Sanitary facilities

During the audit team's conversation with the centre's employees, nobody seemed to acknowledge the existence of an accessible WC. However, such a facility was identified during the audit, with its door depicting the International Symbol of Access.

Figure 51: The door of the designated accessible toilet bearing the international symbol of access

Despite the above, the design and equipment of the toilet leaves a lot to be desired. Its dimensions are much less than the one required in the Greek accessibility guidelines. In fact the toilet's dimensions are so small that, due to the placement of the toilet, a part of the door (which opens to the inside of the room) had to be cut in order for it to close. Thus, the toilet cannot realistically be used by the general public and definitely cannot be used by wheelchair users and persons with restricted mobility.

Am "anatomic" type WC is used, with the available space next to it being between 35 and 43 cm., not allowing transition of wheelchair users. An horizontal handrail is placed at 70cm. from the ground. The top of the WC is located 54cm. from the floor. The washbasin is located outside of the WC cubicle, with its top at 85cm. from the floor, with the tap located at 98 cm.

Adjacent rooms are used as storerooms. Their space can be used, as part of a renovation of the building, to increase the accessible toilet's dimensions and create a usable WC with proper equipment.

Figure 52: The designated accessible toilet

Figure 53: Rooms adjacent to the accessible toilet that can be used to increase its dimensions in case of a renovation

In order to achieve the creation of an accessible WC, it is proposed that space from the adjacent rooms is used for the creation of an accessible toilet, as the one depicted in the following drawings.

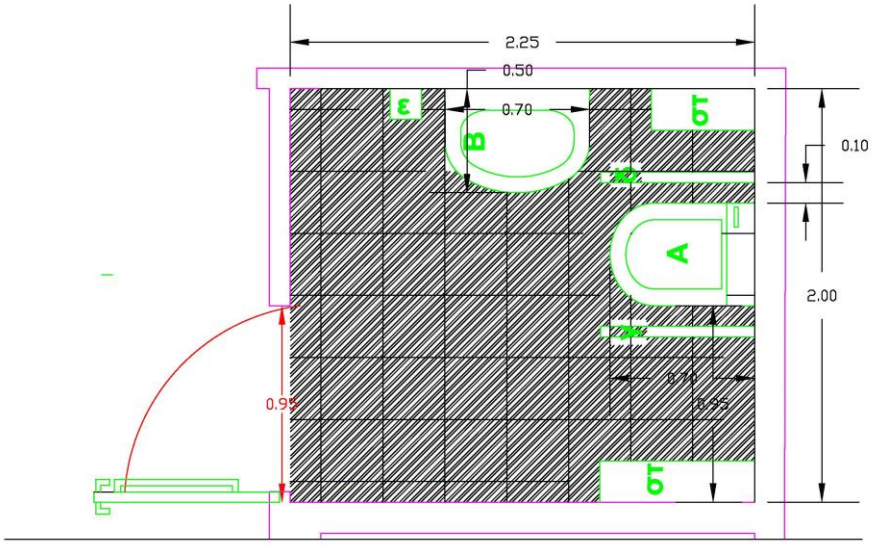


Figure 54: Suggestion for the creation of accessible toilet.

α = WC, β = washbasin, γ = mirror, ε = hand dryer,

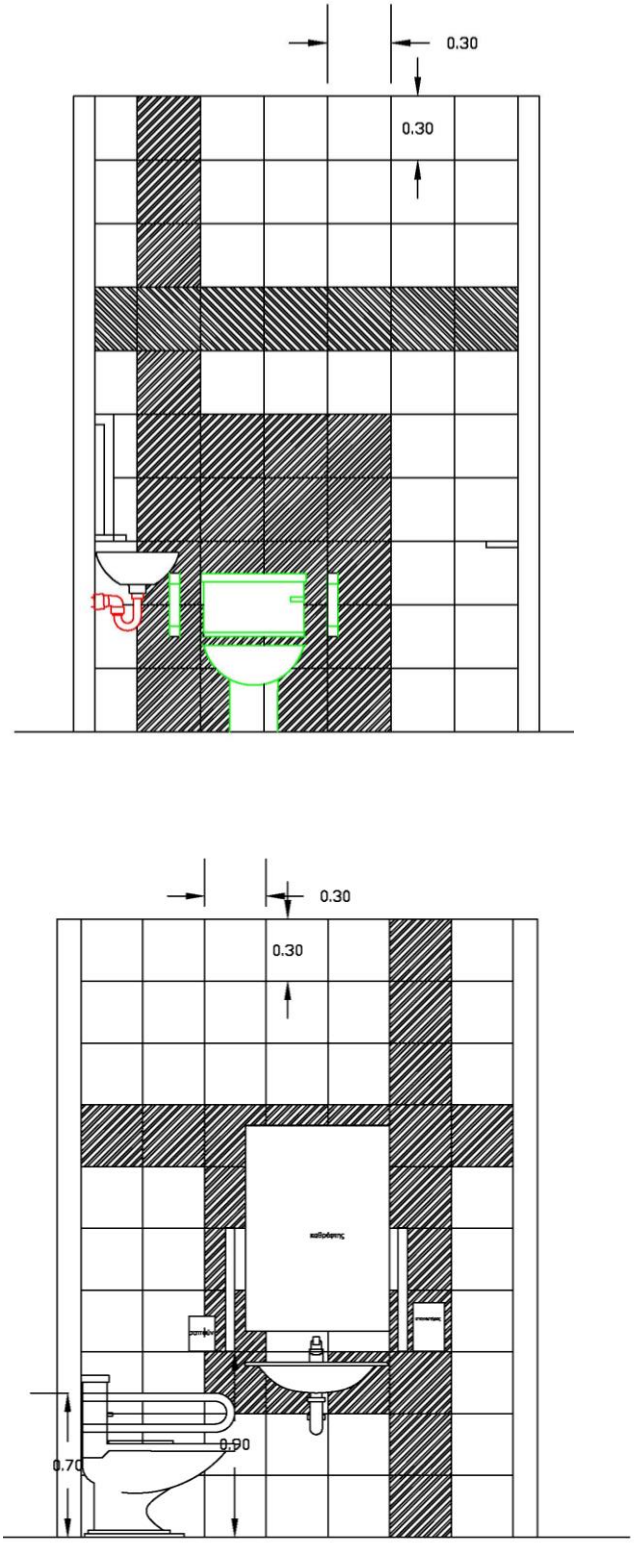
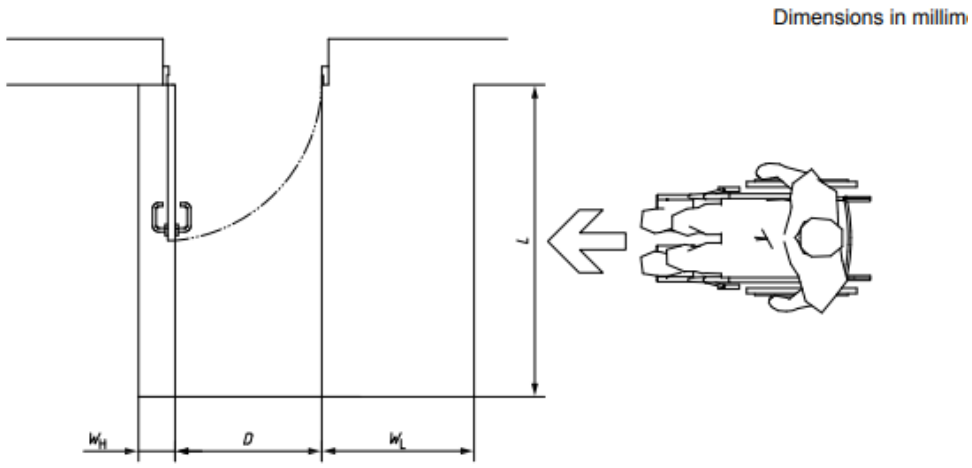


Figure 55: Suggestion for the creation of accessible toilet.

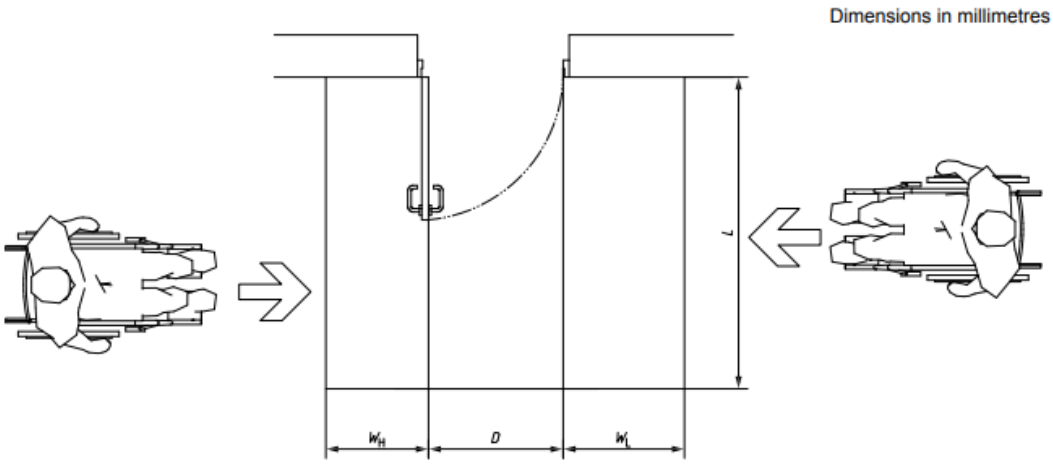
It should be noted that, whatever configuration is chosen, the corridor leading to the accessible toilet's entrance should have appropriate dimensions in order to allow approach

by wheelchair users. The following figures depict appropriate dimensions according to ISO 21542.



Dimension (mm) D	**Dimension** (mm) L	**Dimension** (mm) W_H	**Dimension** (mm) W_L
800	1 670	110	900
850	1 670	110	900
900	1 670	110	900
950	1 670	110	900
1 000	1 670	110	900

Figure 56: Appropriate dimensions – latch side approach. Door opens towards user.



Dimension (mm) D	**Dimension** (mm) L	**Dimension** (mm) W_H	**Dimension** (mm) W_L
800	1 670	710	900
850	1 670	660	900
900	1 670	610	900
950	1 670	560	900
1 000	1 670	510	900

Figure 57: Appropriate dimensions – either side approach. Door opens towards user.

1.8 Additional equipment/ services

A public phone is available near the centre's yard entrance, with access to it being restricted due to lack of maintenance of the pedestrian pavement.

Figure 58: Public phone outside the centre' s yard

A new public phone is proposed to be installed inside the PHC centre's yard, allowing easier access for the user. Dimensions and placement of its equipment is depicted in the following figure.

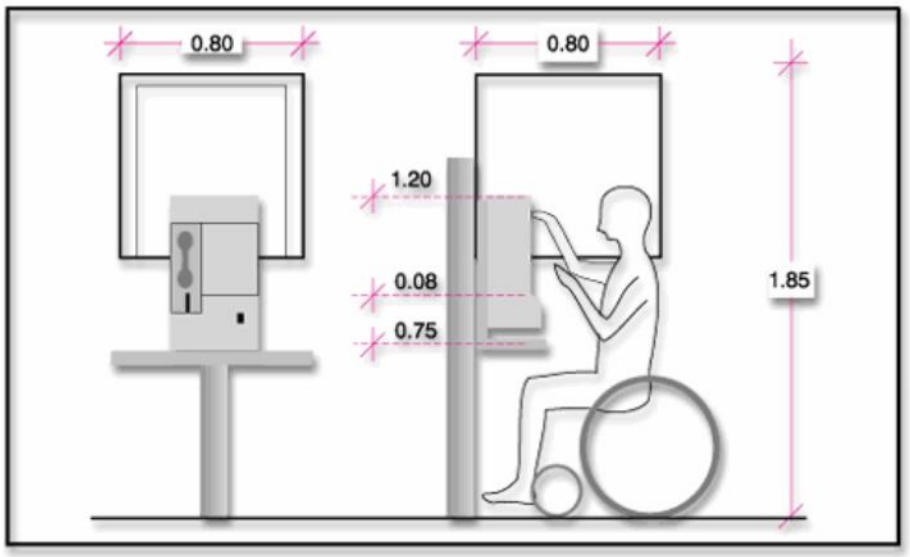


Figure 59: Accessible public phone design according to the Greek accessibility guidelines

Alarm systems should accommodate people with hearing impairments. According to ISO 21542, visual strobe alarms should be provided, particularly in isolated areas (bathrooms, meeting rooms) and noisy areas. Room layouts, lighting levels and furniture arrangements shall be considered to ensure that these alarms are visible. A strobe frequency of 0,5 Hz – 4 Hz minimizes the risk of triggering a reaction from a person with epilepsy. Care should be taken to ensure that overlapping strobes do not combine to result in a higher frequency of flashing.

Bibliography

Circular letter 42382/ 2013 "Clarifications on the application of Article 26 of the New Building Regulation (Law 4067 / 2012) concerning special arrangements for the accessibility of disabled persons / persons with restricted mobility"

Circular letter 29467/ 2012 "Clarifications for the submission of an accessibility study for people with disabilities, which is required to be included in the studies to be submitted during the implementation of the new Building Regulation N.4067 (OGG 79 / A / 2012)"

Department for Transport. 2002. «Inclusive mobility», London, DfT

Department for Transport. 2007. «Manual for streets» London, DfT

Greek Accessibility Guidelines. Available at: http://www.ypeka.gr/Default.aspx?tabid=380 (accessed 4th of September 2019)

Greek Law 2621: Special arrangements for serving disabled people in public areas of settlements intended for pedestrian movement. Article 3 - Tactile indicators for the blind

Greek Official Governmental Gazette 79A/09.04.2012 – New Building Regulations

ISO 21542-2011 "Building construction — Accessibility and usability of the built environment"

Manley, S. (2001), «Creating an accessible public realm» Universal Design Handbook, McGraw – Hill

Official Governmental Gazette 18A15.01.2002 "Special provisions for the service of disabled persons at public buildings" and "Special provisions for the service of disabled persons at public spaces reserved for pedestrians"

United Nations' "Accessibility for the Disabled - A Design Manual for a Barrier Free Environment" Available at: http://www.un.org/esa/socdev/enable/designm/intro.htm (accessed 4th of September 2019)

U.S. Department of Justice – U.S. Department of Health (2010): Americans with Disabilities Act - Access To Medical Care For Individuals With Mobility Disabilities. Available at https://www.ada.gov/medcare_mobility_ta/medcare_ta.htm (accessed 4th of September 2019)