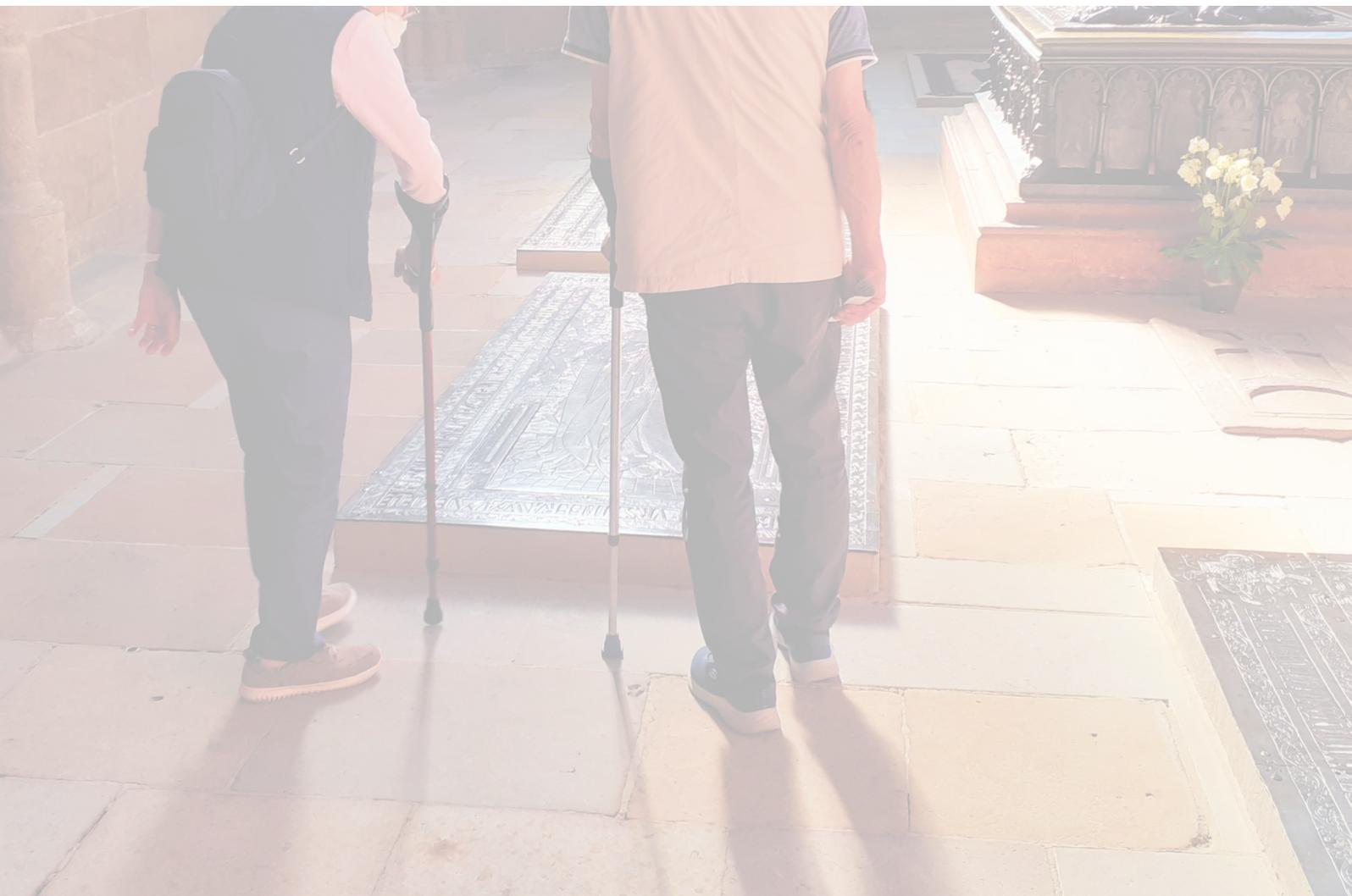


ADAPTATION OF HISTORIC BUILDINGS



FOR DISABLED PEOPLE



Adaptation of historic buildings for disabled people

UNINET

C U L T U R A L
H E R I T A G E

Project UNINET: University Network for Cultural Heritage – Integrated Protection, Management and Use

Co-funded by the Erasmus+ Programme of the European Union

The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Free copy



Erasmus+

Adaptation of historic buildings for disabled people

Table of contents

Introduction	3
1. Area around historic buildings and access to those buildings	10
Characteristics of the problem	10
Characteristics of solutions.....	12
Examples	16
2. Entrances to historic buildings	30
Characteristics of the problem	30
Characteristics of solutions.....	31
Examples	36
3. Floor levels in historic buildings	50
Characteristics of the problem	50
Characteristics of solutions.....	53
Examples	56
4. Decor and furnishings of historic buildings ensuring accessibility.....	71
Characteristics of the problem	71
Characteristics of solutions.....	72
Examples	75

Bogusław Szmygin

Katarzyna Jeżyńska

Lublin University of Technology

Adaptation of historic buildings for disabled people

Introduction

I. The protection of monuments is a discipline that cannot be normalized. In terms of theory, it is possible to define general rules that should be followed when working on monuments, although they have also been changing recently. However, in practice, it is impossible to define and implement a catalog of ready-made solutions. This means that despite the vast experience gathered on the basis of works on thousands of objects, clearly defined forms of intervention have not been developed. This is due to the huge diversity of monuments, their different technical condition and the necessary scope of interference, utility needs and a number of external circumstances affecting the way in which one operate on monuments. Therefore, each intervention on a monument has an individual character.

Conservators of historical objects, who control the works undertaken on the monuments, have adapted to such circumstances. They are not educated in the field of ready-made solutions, because there are no standards determining how to perform work in order to best protect historic values. It is assumed, however, that those supervising conservation works should have appropriate education and experience.

Conservators should be competent to analyze the problem in a way that takes into account complex circumstances. Based on the knowledge of many possible solutions, they should choose an individual, optimal operation for a given monument. This approach is valid for all types of works performed on monuments. From small restoration works focused only on the maintenance of historic details, through a larger range of adaptation works to introduce new functions, extensive renovations deeply interfering with the historic structure of the building, to the reconstruction of a very damaged monument after a catastrophe. As long as an object has the status of a monument and is subject to conservation jurisdiction, this approach applies.

The same approach must also be applied to works aimed at ensuring the accessibility of monuments to people with reduced mobility. Conservators should rely on the general principles of operation of monuments, additionally supplemented with specific needs of intervention to ensure accessibility. They should also know the specificity of barriers limiting accessibility in monuments and various forms of their removal. Based on this knowledge, they can propose and agree on individual solutions for individual facilities. This approach should apply when ensuring accessibility in historic buildings. Materials to solve the problems of accessibility in monuments should provide information in this respect. The layout and scope of the content presented in the publication *Adaptation of historic buildings for disabled people* results from this assumption.

2. Historic objects are a specific group of objects that have been given a special status based on their unique value. Two important pieces of information are contained in this definition of historic buildings. First of all, historic objects are value carriers - in terms of the law, this is a historical, artistic and scientific value that goes beyond the values represented by objects that are not monuments. These additional values of the historic building justify their protection. Therefore, the second information about the special status of monuments concerns precisely the need to ensure their protection through special treatment.

The protection of historic values generally consists in transforming the historical form and substance as little as possible. The conservation of a monument - legally legitimized by granting such status - is therefore a kind of filter that is to stop any interference that threatens the historic values. The conservation service providing protection should eliminate or limit such interference, regardless of the nature and purpose they are to pursue. This applies to all activities - renovation, modernization, adaptation, reconstruction, expansion. Therefore, this also applies to measures aimed at protecting the climate, the environment or improving thermal insulation. Actions aimed at improving the accessibility of monuments for people with special needs must also respect the conservation requirements and must be agreed by the conservation services. The mission of the conservation services - legally unequivocally, does not change regardless of other reasons and requirements.

The modern conservation doctrine, however, does not assume the inviolability of the monument. It is assumed that monuments should be available in order to present their historic values, and they should be used - to create and justify the material basis for their maintenance. Both functions usually require adaptation to modern standards. Therefore, a certain scope of interference in the form and substance of historic buildings is most often necessary.

The scope of the interference should, of course, take into account the value of a specific monument. The general rule is that the more valuable the object, the less interference should be made. However, decisions on choosing a specific solution must be individual. Hence the role and responsibility of the conservation services.

Monuments should be accessible to people with all limitations. Ensuring accessibility requires various types of adaptation measures. However, the most difficult from a conservation point of view is to ensure accessibility to people with limited mobility. Removing architectural barriers in monuments may require various interventions affecting the historic values. With this in mind, a general rule can be formulated that should apply in ensuring accessibility in monuments.

Architectural barriers, the removal of which requires a permanent interference with a monument that reduces its historic value, should in the first place be compensated by organizational and technical solutions that will ensure direct or alternative accessibility.

This principle is based on the premise that many problems have alternative solutions. For example, certain accessibility barriers can be eliminated by organizational measures - including organization of alternative entrances to the historic building. Such action is optimal from the point of view of monument protection, as it allows to avoid material interference. Other groups of architectural barriers can be compensated by the installation of technical devices to ensure accessibility - for example, lifts or stair climbers to overcome level differences. The logic of this approach suggests further rules indicating that less technically complex devices are more beneficial for the protection of the monument. Temporary solutions are also more advantageous than permanent solutions.

3. Adaptation of historic buildings to the needs of people with limited mobility should be treated like all other contemporary interventions carried out in these buildings. Therefore, they should respect all the principles resulting from the contemporary conservation theory applicable to works performed on monuments. These rules can be further developed and supplemented, taking into account the specificity of work related to ensuring accessibility.

Of course, the rules are only directions, it is not possible to describe in detail and unambiguously the implementation of individual solutions to ensure accessibility. In historic buildings, solutions to ensure accessibility - like all other interventions, are individual. They should be the result of a compromise between the need for maximum protection of historic substance and form and the need to introduce solutions ensuring accessibility.

Principle 1 - Minimization of interference

Principle 2 - Harmonization of the interference (with historical surroundings)

Principle 3 - Contemporary interference is distinguishable from an authentic monument

Principle 4 - Reversibility of the interference

Principle 5 - Minimization of the technical complexity of the interference

Principle 6 - Locating the interference in the place least threatening the protection of values

Principle 7 - Advantage of devices ensuring accessibility over interferences removing architectural barriers

Principle 8 - The necessity to consult the solutions ensuring accessibility with the users

Each of the listed principles expresses a certain idea that guides the way in which activities aimed at ensuring accessibility are carried out. A deeper development of each of the principles, in turn, leads to the description of a whole field of various activities related to their implementation in practice. With such a development, certain elements can repeat. This means that some principles are implemented in different aspects and with different activities. Thus, repetitions strengthen them, emphasize their legitimacy.

These principles should be applied to all accessibility work.

4. Ensuring the accessibility of historic buildings for people with limited mobility is usually a difficult task, as it most often requires interventions that interfere with the protection of historic values. In addition, the organization of space in many monuments - the size and layout of rooms, entrances, stairs, different levels - means that the scope of adaptation activities must be large. Therefore, the discussion of accessibility in monuments cannot be limited to presenting the provisions specifying the standards and indications of catalogs of devices supporting accessibility. In monuments, ensuring accessibility cannot rely on simple construction activities to eliminate architectural barriers.

The above conditions determine the way of presenting solutions to ensure access to monuments for people with limited mobility. First of all, it is necessary to identify zones of historic buildings that may constitute key barriers for people using monuments. Of course, all analyzes in this area are an extension of the basic division into horizontal and vertical communication - but such differentiation is too general. In historic buildings, it is reasonable to separate four main problems / zones: the area around the monuments, entrances to monuments, horizontal communication, vertical communication. Such a division results from the combination of conservation issues with the characteristics of solutions ensuring accessibility. For the same reason, it is reasonable to present different solutions and devices for overcoming the difference in levels (vertical communication) in the interiors of historic buildings. In this case, the characteristics of the solutions are related to the difference in height and the impact on the protection of historic values.

Summarizing the presented conditions, the proposed typology of solutions to ensure accessibility to monuments is a combination of zones in which accessibility should be ensured and devices / solutions to ensure accessibility. Therefore, in certain ranges, the content of individual points must coincide, but in the adopted concept it is rather a supplement than repetition. Importantly, the adopted typology should be the most useful from the conservation point of view.

The typology of problems and solutions to ensure accessibility in historic buildings includes 4 organizational and technical issues and 4 issues related to technical solutions. The first group of issues is the subject of this publication, while the second group will be presented in the next one.

The first group includes:

1. Area around historic buildings and access to those buildings
2. Entrances to historic buildings
3. Floor levels in historic buildings
4. Decor and furnishings of historic buildings ensuring accessibility

The second group will include:

5. Ramps
6. Wheelchair lifts
7. Wheelchair stair climbers
8. Lifts

The arrangement of the content in individual topics is intended both to introduce a certain systematics of the problem and possible solutions, and to illustrate them with examples. The examples have been selected to show different solutions in monuments of different value. The presentation of examples contains brief information on the specificity of the monument, which serves to link the characteristics of the barrier with the adopted solution ensuring accessibility.

Individual issues are presented according to the following scheme: *Characteristics of the problem, Characteristics of solutions and Examples of solutions.*

I. Area around historic buildings and access to those buildings

CHARACTERISTICS OF THE PROBLEM

The first difficulty that may be encountered by people with reduced mobility, visiting or using historic buildings is access to these facilities. Difficulties may appear in the immediate vicinity of monuments as well as in a larger historical area. The problems are mainly related to the topography of the area and its surface.

Historic buildings are often located in exposed places, on various types of hills. The use of terrain elevations was, for example, the rule in the location of defensive structures. Location on hills - especially various types of public facilities - was also aimed at emphasizing their importance by elevating them above the surrounding buildings or ensuring good visibility of the facility.

Nowadays, reaching objects on uneven terrain can be very difficult, especially when it is not possible to create an access that meet the current standards. In protected historic areas, the former street networks are usually not modernized. As a result, narrow, winding streets and even stairways can lead to important monuments. Overcoming such a route is very difficult, even impossible for people with reduced mobility.

The second important factor limiting the access to many monuments are surfaces. The conservation protection program usually also covers the surroundings of historic buildings. Squares, courtyards, streets and access points to monuments were usually covered with various types of cobblestones. Small-sized stone elements create uneven surfaces, intersected by numerous grouts. Navigating them is very difficult, especially for people with limited abilities.

The problem of the surface may concern not only direct access to historic buildings, but also entire historical areas. In such areas - for example entire old town areas - the original historical coverage is protected. Regardless of whether they are preserved surfaces or they are solutions made today, moving around them is difficult. In this case, the problem of moving around is not solved by the administrators of individual monuments, but by the administrators of the entire area. Nevertheless, it is necessary to provide appropriate solutions and this may also be regarded as ensuring access to the monuments.

CHARACTERISTICS OF SOLUTIONS

I. Communication in the historical area

The first solution is to organize various types of transport that will allow people with reduced mobility to reach the facilities directly. For this purpose, various vehicles can be used, adapted to the specificity of the area and the volume of traffic. These can be, for example, minibuses or small buses when the traffic is increased and the space allows the introduction of such vehicles. In many old town complexes - especially those more extensive and with a high intensity of tourist traffic, there are permanent lines transporting passengers and bringing them to more important places.

In areas where there is less space or where traffic is irregular, the introduction of small electric vehicles is a common solution. They are rented individually and their routes can be arranged with the drivers. It is a very popular solution, which is more and more often used not only by people who have difficulty navigating in historical areas.

An important advantage of this solution is the lack of any interference with the historical space. Thus, the introduction of appropriately adapted means of transport does not interfere with the protection of historic values. A certain drawback of this solution are the fees that usually apply when using such transport. The problem may be the excessive popularity of such solutions, which is why managers of old town areas often limit the number of electric vehicles and define their appearance.

As a rule, the above-mentioned means of transport introduced in the old town areas and used for accessing selected objects or visiting these areas in general are not only used by people with reduced mobility. They are usually paid, so everyone can use them. However, they are most often used by people who find it difficult to move over uneven terrain and surfaces due to mobility limitations, age, health or the company of small children. Thus, appropriate collective and individual means of transport undoubtedly increase the accessibility of monuments and areas.

2. Access and parking near the entrance to the historic building

The second solution of a similar nature is the possibility of direct access to the historic building by individual means of transport. In the old town areas and in the immediate vicinity of monuments, traffic restrictions usually apply. These are often very strong restrictions resulting from limited space, a large number of visitors and the need to protect monuments. Therefore, direct access and parking at the monuments is not allowed.

However, in order to allow access to monuments to persons with reduced mobility, it is allowed to drive along closed routes and park directly in front of the monuments. Of course, such parking spaces require special signage.

Also in the case of this solution, its important advantage is that it does not interfere with the historical space. An important factor is that the costs of this solution are minimal.

3. Technical devices providing access to the entrance to the historic building

The third solution is the construction of various types of technical devices enabling transport on specific routes. Such solutions are usually used on short routes, in places where there is a large difference in ground levels. In such cases, it may take a long and strenuous road to reach the historic site or area.

Overcoming the height difference usually takes place with the help of various railways and elevators. From a technical point of view, the construction of such devices is not a complicated task, but it is expensive and requires interference in the historic space. Therefore, in these cases, it is necessary to carefully select the location. Users should be as close as possible to the historic building, and at the same time the device should not be visible and as little as possible disturbing the form and substance of the monument. So, in principle, you can never create an ideal solution.

The construction of railways and elevators providing access to the monument is therefore a solution that cannot be used everywhere. It should also be taken into account that the installation of these devices usually requires irreversible interference in the surroundings of the monument. Nevertheless, there are historical ensembles and facilities where the introduction of such devices is justified. Access to the facility takes place at the expense of certain interference, but at the same time it is avoided in the area leading to the facility. In addition, many people can use such facilities - so they increase the attractiveness of the monument in some way.

4. Pavement lanes enabling movement

The fourth solution is the incorporation of lanes (paths) into the historic pavements, on which it is easier for people with limited mobility. Historical surfaces - authentic, recreated or stylized, as a rule, are made of materials that make it difficult to move around. Difficulties affect not only people with various kinds of limited abilities, but even people wearing less comfortable footwear. Therefore, many people can use the more convenient paths.

Creating surfaces that are friendlier to people with constraints is possible only to a limited extent. This is due both to conservation reasons - protection of historic surfaces and the nature of places, as well as the costs of such investments. Therefore, these types of paths are not yet common. Most often they are created within the streets of old towns and in the courtyards of historic buildings, which are used by many people. Also in the historic courtyards, even surfaces are laid, which facilitate movement and at the same time facilitate drainage of rainwater.

Regardless of the type of surface covering the surroundings of historic buildings, lowering curbs are a necessary and often used solution. Curb lowering enabling, for example, a wheelchair ride down, are commonly used on streets in historic areas or in courtyards next to historic buildings. The type of surface does not generally limit the use of this solution. Importantly, lowering curbs is usually only a matter of the level of its arrangement, so it only slightly affects the overall perception of historical space.

It is worth noting that in the old town areas with a high intensity of tourist traffic, there are many people willing to transport tourists in prams. Thus, the manager of the historic area does not have to bear the costs of organizing such a service, but can control its quality and conditions.

EXAMPLES

I. Communication in the historical area

The historic center of Cracow - the Old Town within Planty, Kazimierz and Stradom, is a very valuable complex entered on the UNESCO List. It is a vast area, on which even a cursory tour takes at least a few hours. The most valuable monuments are located at great distances from each other. There are strict traffic restrictions throughout the area. However, you can use dozens of electric vehicles that can be rented on any fixed routes.



FIG. I Parking of electric trolleys in the Old Town in Cracow, near the access from the train station

The electric trolley service is licensed by the Cracow City Hall. The number of vehicles, their size and colors of the roof are checked. This service is paid, but it undoubtedly increases accessibility to historic attractions of the city and allows to visit the entire complex, even for people with very limited mobility. All in all, there are many people willing to use electric vehicles.



FIG. 2 Traveling with electric trolleys around the Old Town in Cracow

The old town complex in Meissen covers a relatively small area, but it is a very strenuous area to move. Narrow and winding streets lead to the castle hill, which is the main attraction of the historic complex. In many places, medieval streets turn into stairs.

Therefore, in order to allow tourists to move between the main historical attractions of the city - the Porcelain Museum, the Old Town Square and the Castle Hill - a bus line that connects mainly these places was organized. The small bus can carry only few passengers, but is able to cross the narrow streets of the old town.

The bus runs all the time between the Porcelain Museum, which can be easily reached on foot or by car, and the castle hill. The bus takes passengers directly to the courtyard in front of the cathedral, from where it is also very close to several hotels and restaurants.



FIG. 3 A bus on the castle hill in Meissen which runs only between the main historic attractions of the city

2. Access and parking near the entrance to the historic building

Erfurt Cathedral - one of the most famous monuments and a symbol of this city, is located on a small but steep hill on the edge of the historic center.



FIG. 4 Erfurt Cathedral - symbol of the capital of Thuringia

Several dozen meters long stairs lead to the main entrance, impossible for people with limited mobility. It would also be difficult to install technical devices aiding the movement of people with disabilities on these stairs. Therefore, for these people there is a technical road that can be driven directly to one of the entrances. At the entrance, there is a special parking space where people with limited mobility may park their car.



FIG. 5 A parking space placed directly next to one of the entrances to the cathedral

The possibility of driving directly to the entrance to the cathedral is a very helpful solution, also due to the type of surface on the cathedral hill. The entire area around the church is covered with historic cobblestones. Moving on such a surface is very difficult, especially for people in wheelchairs or other mobility restrictions.



FIG. 6 Cobblestone pavement covering the courtyards surrounding the cathedral in Erfurt

Haus am Horn is a famous experimental house built in 1923 in Weimar for an exhibition showcasing the ideas of the Bauhaus. It is the first building which presents the modernist concept of a mass residential building in practice.



FIG. 7 Haus am Horn - the first demonstration Bauhaus residential building

A small, one-story building was erected on the outskirts of a huge landscape park, occupying nearly 50 hectares. The building is located at the end of a long cobbled street that must be reached after more than a kilometer. So getting there on foot is long and difficult. For people with limited mobility, access by car is the only solution.

However, the famous house is visited by many tourists who park along the narrow street. That is why the line of parking cars sometimes reaches several hundred meters. Therefore, there are two parking spaces in front of the property only for people with special needs.



FIG. 8 Haus am Horn – two parking spaces in front of the property for people with special needs

3. Technical devices providing access to the entrance to the historic building

The cathedral square and the surrounding buildings are the central place of the castle hill in Meissen. Getting in and out of the narrow, cobbled streets of the old town is difficult. People with limited mobility can reach it only by using various means of transport. That is why a special bus line runs to the cathedral square, which is serviced by small vehicles and a funicular.



FIG. 9 The entrance to the funicular built into the wall surrounding the cathedral square in Meissen

A small funicular - the cabin can only accommodate a few people, was installed directly next to the historic wall surrounding the cathedral square. The wall was breached only to a small extent, while installing the door to the funicular. From the historic courtyard

you cannot see any devices of the funicular, and its doors have been integrated into the historic wall.



FIG. 10 The panorama of the old town from the Elbe side is not disturbed by the devices of the funicular leading to the castle hill

The iconic panorama of the castle hill, admired from the side of the Elbe, was not disturbed, as the lower station of the cable car was built on the opposite side of the hill. It is possible to drive directly to the lower station of the funicular.

Buses running between the main attractions of the old town and the funicular leading directly to the cathedral square undoubtedly significantly increase the accessibility of the historic complex in Meissen.

4. Pavement lanes enabling movement

When visiting the old town, taking advantage of all its attractions, you have to move along the old town streets. Very often their surfaces are historical or reconstructed pavements. Moving - especially on longer stretches - on such terrain is very difficult for people with limited mobility.



FIG. 11 Old town streets are very often covered with historical or reconstructed pavements

The accessibility of a cobblestone street can be improved by lanes lined with smoother surface. Such a solution was used, for example, on the streets in the Old Town in Warsaw. The smoother pavement strips are also made of natural stone materials, which to some extent softens the fact that they are made of different material. They

are used not only by people with limited movement, they are also easier to move around with strollers, bicycles, etc.



FIG. 12 The lanes that make it easier to navigate the cobbled streets in the Old Town in Warsaw

A necessary addition to the surfaces that are friendly to people with limited mobility in the Old Town areas is to lower the curbs between the street level and sidewalks. These lowerings are usually made at intersections where pedestrians most often cross the streets. A dozen or so centimeters of curb dip do not significantly change the appearance of the surface, and are a significant improvement for people with mobility problems. Such solutions are already standardly used in old town areas.

In highly visited places, a possible solution is to make a smooth surface throughout the area. Such a solution is justified, for example, in the courtyards of historic buildings, which are visited by thousands of tourists. With the help of larger size stone slabs laid with a small grout, it is possible to obtain smooth surfaces that are easy to walk on. The advantage of such surfaces is also easier drainage of rainwater, which is very important for preventing the walls of the surrounding buildings from getting wet.

The courtyard of the Wawel Royal Castle was lined with stone slabs. Tourists visiting Wawel repeatedly cross the courtyard, as separate entrances lead to different wings of the complex. Therefore, from the point of view of the accessibility, the surface of the courtyard is very important.



FIG. 13 The surface of the Wawel courtyard was entirely made of smooth, stone slabs

Directly next to the walls of the buildings surrounding the castle courtyard, the ground level is raised. This is necessary to protect the walls from water and snow in winter. The curbs separating this area from the courtyard level are also a barrier for people with limited mobility. Therefore, a lowering has been made at the entrances to the buildings, which makes it easier to move within different levels.

2. Entrances to historic buildings

CHARACTERISTICS OF THE PROBLEM

Entrances are a significant barrier limiting access to historic buildings. For functional, technical and architectural reasons, the entrances to buildings are usually located on a different level than the surrounding area - usually they are elevated above the ground level. In the case of historic buildings, the difference in height can be very significant, it can even reach several meters. Overcoming such a height difference with stairs, which are also often not compliant with modern standards, is a significant problem even for people with slightly reduced mobility. Removing this barrier is therefore an important task in ensuring accessibility.

It is also important to underline the obvious fact that accessibility to buildings is absolutely crucial. If a person with reduced mobility is not able to enter the historic building, then any further accessibility measures are no longer relevant. Therefore, accessibility of the entrance is a priority.

The problem of enabling people with restricted mobility to enter historic buildings is difficult because any intervention - altering the entrances or adding technical devices - may significantly affect the compositional cohesiveness of the historic building. The entrances play an important role in the compositional structure of historic buildings, they were carefully designed, had an elaborate form and artistically designed detail. Therefore, any intervention may destroy not only the historic structure, but also significantly disturb the visual cohesiveness of the monument. The provision of access should therefore be carried out with special care in order to preserve historic values. Bearing in mind the great importance of entries for the protection of historic values, it is therefore necessary to carefully analyze the possibility of alternative solutions that will avoid or limit the scope of intervention in the structure of the monument.

CHARACTERISTICS OF SOLUTIONS

Considering the nature of solutions aimed at ensuring access to historic buildings for people with limited mobility, two main groups of activities can be identified. The first group are solutions of an organizational nature, consisting in organizing an alternative entrance to the building. The second group consists of various types of technical solutions and devices. These are solutions that interfere with the architectural structure of the stairs (various types of ramps) or solutions involving the insertion of technical devices to overcome the difference in levels. Technical solutions interfere with the historical exit stairs to a different extent. Therefore, they influence the structure and perception of a monument.

Therefore, taking into account the differences between technical solutions, three different groups of solutions can be distinguished - from the point of view of the protection of historic values, the most advantageous solutions are those that do not interfere with the monument in any dimension.

Regardless of the method, it is always important to ensure the possibility of getting as close to the monument as possible. Moreover, it should also be possible for people with limited mobility to park their vehicle next to the entrance.

I. Alternative entrance to the monument

If the main entrance to a historic building is a severe barrier for people with limited mobility, then an alternative entrance should be taken into consideration. This solution is justified, above all, when there is a large difference between the ground level and the entrance to the building, the overcoming of which requires complex solutions. Slight differences can be overcome with simple ramps, which do not interfere with the composition of the entrance to a large extent.

An alternative entrance can be arranged when, apart from the main entrance, there are also entrances less important from the point of view of historic values or when they are more accessible from the point of view of people with limited mobility. In the first case, removing barriers limiting accessibility is associated with less violation of historic values. In the second case - when the entrance is closer to the ground level, the intervention with the monument may be smaller or even unnecessary.

The main entrances located well above the ground level, which are important in the composition of the building, with a rich architectural detail, are usually in larger and more important public facilities - sacred, educational, museums, theaters, offices, etc. Such facilities are usually free-standing and have several entrances of different functions. Therefore, it is possible to organize an alternative entrance there.

However, an alternative entry must meet several conditions. First of all, the alternative entrance must be connected to all rooms that are to be used by visitors. Of course, there should be no architectural barriers on this road. The road to the alternative entrance should be well signed; the marking should clearly lead from the main entrance. It is generally best if the alternate entrance is at ground level. Very good when the alternative entrance is directly accessible by car; it is advisable that this car can be parked nearby. If there is no permanent service at the alternative entrance, devices ensuring communication with the facility administration are necessary. These devices must be at a sufficient height for use by a wheelchair user.

The alternative entrance may be seen as less representative than the main entrance. Therefore, it is necessary to ensure that the space around it is orderly and properly arranged so that it does not give the impression of a secondary place. This is a very important condition that must be fulfilled by alternative entrance.

2. Installation of devices enabling entry to the monument

The second solution ensuring accessibility at the entrances to historic buildings are various technical devices that allow to overcome the difference in levels or entrance staircases. The nature of the technical solutions depends primarily on the level difference that needs to be overcome and the architectural solutions of the entrance area.

In general, it can be stated that the smaller the level difference, the more technically simpler solutions can ensure availability. It can also be considered that the more elaborate and decorative the staircase leading to the entrance is, the more difficult it is to introduce a technical device. Devices that ensure accessibility against the background of extensive stairs significantly disturb their structure and compositional cohesiveness. Therefore, in high and architecturally complex stairs, an alternative entrance is the most appropriate solution.

Technical solutions ensuring accessibility can be divided into three groups, which result from the difference in levels to be overcome.

The first group consists of solutions for overcoming a slight difference in levels (several dozen centimeters). In this case, simple ramps made of various materials are usually sufficient. The applied solutions should be adapted to the nature of the historic building and functional needs. With greater differences in levels, the ramps are not a good solution, because in order to maintain the right angle of inclination, they must be very long. Meanwhile, the extensive ramps, especially when they consist of several sections, take up a lot of space and greatly deform the appearance of the historic entrance.

The second group of solutions are various platforms that overcome the level difference between the terrain and the entrance to the historic building. Movable platforms take up little space, which is undoubtedly their advantage. The platforms are installed next to the stairs, so they hardly interfere with the historic structure. In practice, however, some interventions are necessary, because when descending from the platform, it is usually necessary to dismantle fragments of balustrades. The platforms have drives that

require supervision, maintenance and repair. Occurring failures exclude these devices temporarily from use. Therefore, the platforms are problematic to use.

The third group of solutions are devices called wheelchair stair climbers. These are various forms of seats combined with drives that allow to drive between the lower and upper stair tread. The stair climbers are installed to the flight of stairs.

Stair climbers are relatively complex devices because they consist of multi-point clamping systems, guide rails, drives, seats, and control panels. The operation of these devices requires the supply of electricity. The stair climbers at the entrances to monuments are exposed to weather conditions, which affects their functioning. Stair climbers are complex devices that when installed on historic staircases, significantly interfere with their perception.

In general, mechanical devices - platforms and stair climbers - are quite complex, require power supply, require instructions to operate, are expensive, require maintenance and may fail. For those reasons they are still not very popular. Therefore it is better to provide accessibility by organizing alternative entrances (which may also require some mechanical devices).

3. Rebuilding the entrance to the monument

The third group of solutions includes various types of permanent reconstruction of entrances to historic buildings. The most popular solution is to build a ramp into the historical staircase (the ramps are added to the historical staircases are presented in point 2).

The permissible inclination angle of the ramp is small, which limits the scope of their use. In general, ramps can be built into stairs with only a few steps. Low stairs usually did not have railings, which also makes it easier to integrate a ramp into them.

The way the ramp is integrated generally depends on the height, width and form of the staircase. There are no regulations specifying the form of the ramp - only the

dimensions, the angle of inclination are determined. For practical reasons, ramps are often built into the side of the stairs, which makes it easier to install wheelchair handrails and makes it less interfering for people using the stairs. For compositional reasons, architects sometimes decide to build in two symmetrical ramps. Ramps should be constructed of materials similar to those used for the historic staircase.

Many examples prove that in low and straight stairs, properly built-in ramps can be a solution that slightly disturbs the compositional cohesiveness of the monument. Of course, this does not change the fact that it is a permanent interference in the structure of the monument - therefore it should not be used in the most valuable buildings. At the same time, from the practical point of view, the simplicity and durability of the ramps built into the stairs is their advantage.

EXAMPLES

I. Alternative entrance to the monument

The most famous monument in Florence is the medieval Duomo cathedral, bell tower and baptistery. The ensemble is the most famous monument and symbol of the city. The cathedral is visited by over a million people a year - of course, there are many people with reduced mobility.



FIG. 14 Information for visitors – alternative entrance for tourists with disabilities

In the surrounding streets and in Piazza del Duomo, most of the architectural barriers have been removed. However, in the cathedral, due to its unique value, any interference is kept to a minimum. Therefore, no accessibility measures were installed at the main entrance.



FIG. 15 Main entrance to the Duomo in Florence

For people with reduced mobility, there is an alternative entrance in one of the side facades. The level difference by this entrance is small, therefore no additional accessibility devices are needed. In addition, entering the cathedral through these doors is easier, as there are still many tourists waiting at the front entrance. It is an example of an alternative entrance, good both for conservation and functional reasons.



FIG. 16 The alternative entrance to the Duomo cathedral in Florence does not have any architectural barriers

Wide stone steps lead to the main entrance to the Neues Museum building in Weimar. The staircase is long, as the representative storey of the museum is elevated high above the ground level.



FIG. 17 Main facade of the Neues Museum Weimar building - high stairs

Therefore, for people with limited mobility, an alternative entrance was organized in the rear facade of the building, where one of the technical entrances was used. The entrance is barrier-free, it is located directly on the ground level, there is no threshold that would make it difficult to enter the wheelchair. An important advantage of this solution is the possibility of direct drive-up by a car - a person in a wheelchair will be directly in front of the museum's door.



FIG. 18 Entrance for people in wheelchairs - at ground level, without a threshold, the possibility of direct access by car / Neues Museum Weimar /

Information explaining the location of the entrance for people with reduced mobility is provided by the main entrance for visitors to the museum.



FIG. 19 Information explaining the location of the entrance for people in wheelchairs / Neues Museum Weimar /

2. Installation of devices enabling entry to the monument

An example of a ramp added to a historic staircase in one of the office buildings in Weimar. The architecturally simple building was built in the fascist times. The entrance to the first floor is several dozen centimeters above the ground level and requires climbing a few steps. To make it easier for people with reduced mobility, a long ramp has been built, which is easy to overcome on a wheelchair. The ramp has a slight slope as it starts far in front of the stairs. The ramp is perfectly integrated into the alley leading to the entrance, it is harmonized in color and material.



FIG. 20 Ramp leading to an office (historic building) in Weimar

Romantic ruins have been built in the historic park in Weimar to complete the picturesque landscape. The facade of the building is slightly above the ground level.

Steps to enter the ruins have not been made, although it is open to the public. Therefore, a wooden ramp was added at the entrance. A simple form and natural material are appropriate in this setting and in a facility of this nature. If the concept of using this monument changes, it will be easy to remove the wooden ramp.



FIG. 21 Ramp leading to a historic ruin in the Weimar nature park

The White House is a small residential Warsaw. The pavilion was the first object erected in the complex, it has a valuable interior and is open to the public. The entrance door is not much higher than the level of the surrounding area, however, it is a barrier that prevents wheelchair access. Because of the historic value of the facility the accessibility was provided with a solution that does not interfere with the building at all.



FIG. 22 The pavilion is several dozen centimeters above the ground level

In order to overcome the level difference, a lift was installed in the immediate vicinity of the entrance door. The device was hidden underground – when the lift is not being used it is not visible. When a user on a wheelchair appears, the facility staff starts the lift.

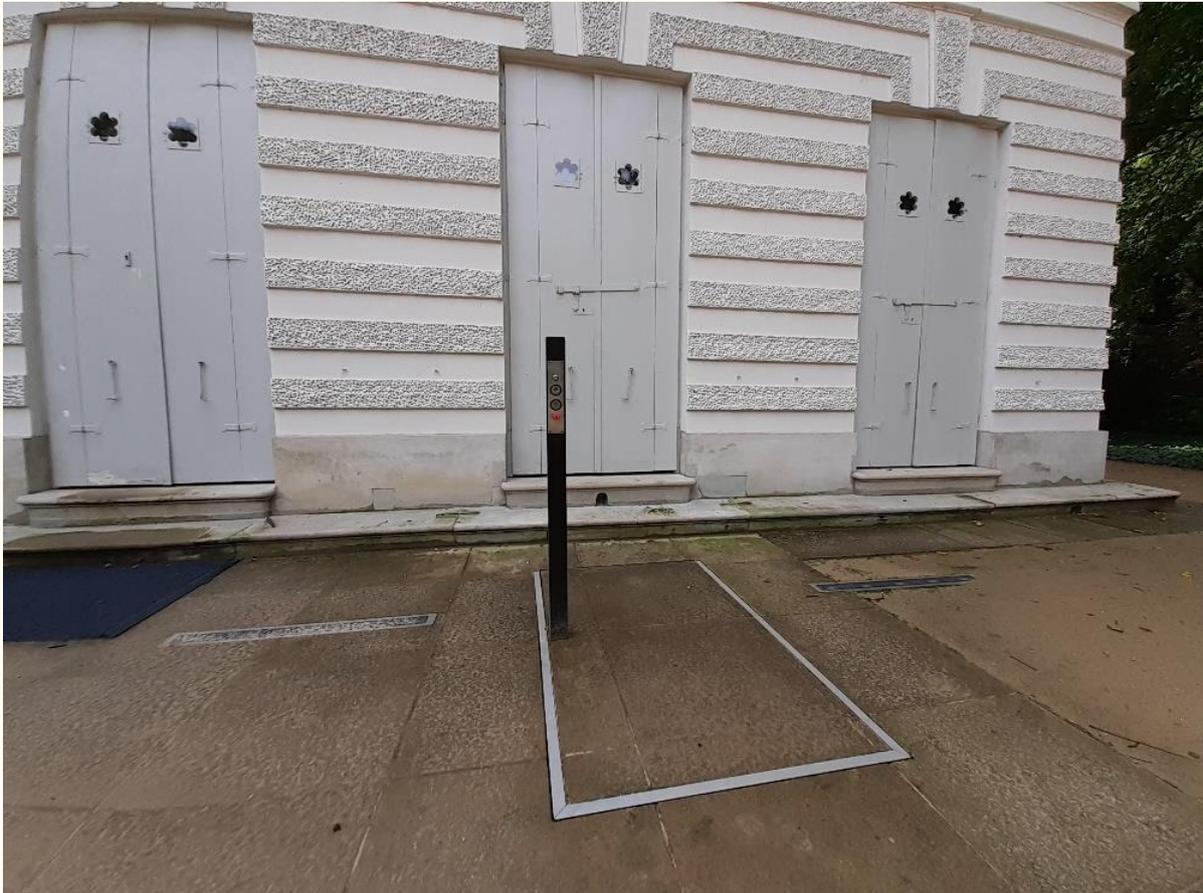


FIG. 23 The lowered lift is not visible

From the lift to the building one enters the landing, which is folded out by the facility staff.



FIG. 24 The wheelchair is raised by the lift

From a conservation point of view, such a solution can be considered a good one. In practice, however, the use of a lift requires quite a complex procedure and assistance. Moreover, the device may require maintenance and repairs in the long run.

3. Rebuilding the entrance to the monument

The hotel Kaiserin Augusta in Weimar was built at the end of the 19th century. The original entrance was on the axis of the smaller of the two buildings making up the hotel. A simple, traditional staircase led to the main entrance.

During the reconstruction, the main entrances were built in place of the window on the ground floor of the second building. In new staircases, two symmetrical ramps were built. The whole thing is made of the same material, the ramps are an element of the structure and composition of the stairs.

This solution can be used in buildings of low historical value, when the part of the building with the stairs was destroyed, or when it was decided to rebuild the historical facade.



FIG. 25 Rebuilt staircase at the Kaiserin Augusta hotel with two ramps

The Wawel complex has been adapted in many places to the needs of people with limited mobility. A low staircase leads to one of the newer buildings, which houses an exhibition of archaeological monuments. On their side there is a ramp, which is facilitated by a double-sided balustrade.



FIG. 26 The ramp built into the stairs leading to the exhibition of archaeological monuments of Wawel

The building housing the archaeological exhibition is elevated above the level of the surrounding area. It is a small hill that can be climbed over several steps. To make it easier for people with limited mobility, a long ramp has been built next to the steps, which gently allows overcoming the difference in levels and getting into the building. The ramp has been successfully integrated into the space of the square.



FIG. 27 Ramp integrated into the square leading to the building with the archaeological exhibition of Wawel

3. Floor levels in historic buildings

CHARACTERISTICS OF THE PROBLEM

The technical conditions do not define the requirements that the floor should meet from the point of view of its adaptation to the needs of users with reduced mobility. This is important because the floors are also an element of a historic building, they can have a significant value and be protected. Therefore, it is good that the floors in historic buildings - understood as surfaces with specific characteristics, are not subject to activities ensuring accessibility.

However, the situation is different once the floor is considered in terms of the level differences. In historic buildings, individual rooms often have different levels. This may be due to various reasons. First of all, historical objects have often undergone various transformations, including extensions. As a result, the rooms could have different levels, and the differences were covered by stairs of different heights. Different floor layers were also laid in the rooms - usually due to the function, which also results into differences between the rooms. Often, thresholds were installed in the doors - especially the external ones. They are also a barrier that makes it difficult for people with reduced mobility. All in all, in historical buildings - especially those with an extensive stratigraphy, floors treated as a whole in the scale of the building, may be a significant problem from the point of view of ensuring accessibility.

The optimal solution to this problem is to connect all floors on one level. This means removing barriers such as thresholds and turning all steps into sloping passages. In such a reorganized space one can move around on a wheelchair. Additionally, in those passages connecting rooms of different levels, handrails that facilitate movement should be attached.

Architectural barriers resulting from the difference in levels can of course be eliminated by installing a ramp or lifts (issues discussed in other chapters). However, a permanent and comprehensive solution is the combination of all rooms into one plane. This requires renovation works, during which the thresholds, single steps are permanently removed. Usually they are replaced by poured floors across the entire room. It is undoubtedly a permanent interference in the structure of the monument.

These types of activities are usually performed during major renovations in public historic buildings. Usually these are facilities with one manager and one function - for example a museum, education, offices. In the case of such functions, communication must be ensured throughout the entire space, users are on the move and should have access to most rooms in the facility. In such conditions, it is possible and reasonable for a comprehensive planned renovation, which will also cover all floors. Even differences of up to a few steps, for example between building parts that have arisen at different times, can be eliminated. Such actions are possible when there is enough space to replace the stairs with a slightly inclined surface - for example, when the stairs were in corridors connecting buildings or rooms.

However, it should be emphasized that the differences in levels in historical objects are an element of their historical value. They are the objects' feature and a material document that preserves the concepts of former builders and the history of subsequent transformations of the historic building. From this point of view, maintaining the difference in levels and the elements that make them permanent - thresholds, steps, stairs, can be justified. In some places it will even be necessary. Thus, combining all floors into one surface cannot always be regarded as an desirable solution, even when technical reasons allow it. There is no doubt that reducing the difference of height in all rooms on a storey is a material and visual activity modernizing the historic space. This is especially true when the floor is covered with the same finishing material.

It should also be emphasized that combining the floors into one surface may not be justified from the point of view of the historical value of the floors themselves (as finishing layers). In many buildings, floors are a valuable and protected monument. In

such cases, they must be protected and should not be permanently joined into one surface (through construction works). Thus, from the conservation point of view, only in certain monuments it is possible to eliminate barriers limiting movement across the entire storey.

CHARACTERISTICS OF SOLUTIONS

Permanent removal of barriers, which limit the possibility of combining the area of the entire floor into one, can be performed by the following types of activities.

I. Removal of thresholds

In historic buildings, thresholds installed in various types of doors are a common barrier. Thresholds can be created when the lower part of the frame protrudes above the floor level. In interior doors it is usually invisible, but it is more difficult to disguise it in exterior doors. In the outer doors, the thresholds also played an important utility function - they allowed the door to be closed more tightly, and protected against water, snow and dirt. That is why the thresholds on entrance doors were often quite high.

In internal doors, the thresholds could also be elements installed in the place where the floors covering the adjacent rooms converged. Such put-on elements masked the joints. The threshold could also mask a slight difference in levels between adjacent rooms.

The removal of wooden thresholds inside the building is quite simple. When removing the thresholds, however, one must make sure that the posts of the frame are properly stretched, for example by fastening to the walls. More problematic is the removal of external thresholds. It is more visible and unfavorable for the mentioned use reasons.

In many cases, historical thresholds should be kept. In such a situation, the threshold can be covered with a curved element on which the trolley can be driven. A similar effect can be achieved by adding a small ramp with the threshold height. These are, of course, a temporary solution, but they fulfill their functions - they ensure accessibility.

2. Removal of steps

In many historic buildings, there are level differences between rooms on the same floor. It is not the planned level differences between the floors that are connected by staircases. This refers to smaller differences - from one to several steps, which result from different periods of construction of the object, transformations or different floor layers in adjacent rooms.

Height differences of several dozen centimeters constitute a barrier, especially as it is usually located in doors or corridors. So there is not much room for a wheelchair.

Smaller level differences, for example of one step, are usually in the doorway between rooms. This creates a troublesome combination of level difference and little maneuvering space. If the thickness of the walls is sufficiently large - at least several dozen centimeters, such a space can be connected with an inclined floor. The slope of the floor can be quite large, but the distance is small. This solution is similar to the removal of the threshold.

With a bigger difference in levels, a longer ramp is required. Usually, however, small steps, which were a result of an unplanned difference in levels, were located in corridors connecting different parts of the building. There is therefore enough space to build a sloped floor instead of steps. However, due to the level difference, the slope of the floor can be so large that handrails must be installed.

Generally, it should be emphasized that the right goal, which is to eliminate barriers by creating one area on the entire story of a historic building, may not always be achieved. In some places, even a slight difference in level cannot be eliminated in this way - for example, the slope of the floors would have to be too large. In this case, the use of additional devices (lifts, ramps, stairclimbers) should be considered. Of course, the introduction of such devices may also result from conservation reasons.

3. Platforms and raised floors

Another solution, which also consists in providing uniform surface in different parts of the monument, is the construction of platforms and raised floors. The dissimilarity of this solution lies in a completely different approach to the problem of barriers restricting movement around the building. In this case, the barriers are not removed – the surface above them is created, which does not disturb historical elements.

This solution is used primarily in archaeological exhibitions. In such places excavated fragments of buildings create a space in which it is difficult to move around. Moving between archaeological monuments is often not recommended due to their technical condition and the risk of further destruction. In such cases, platforms (over the ruins) or raised floors (over the preserved historical surfaces) are built, in order to allow movement. If such platforms or floors form one surface, they also ensure the accessibility of the monument to people with limited mobility. Thus, appropriate solutions can perform these two functions, and therefore should be included in the catalog of accessibility activities.

The undoubted advantage of the platforms is the possibility of a fairly free shaping of their course. Platforms can therefore provide access to historic elements that are difficult to see in any other way.

Platforms and floors can be made of various materials. Depending on the needs, they can also be transparent materials, which significantly widens the view. Materials can also be selected depending on the environment in which they will be used. Therefore, platforms and floors can be installed inside buildings and in spaces without roofing.

From the conservation point of view, a drawback of these solutions is the need to place the platforms or floors on supports that must be fixed on the historical surface. However, it is possible to choose the space which does interfere with the historic substance to a small extent.

Platforms and raised floors can therefore be considered a good solution that ensure accessibility to a specific group of monuments.

EXAMPLES

I. Removal of thresholds

The Gallery of 19th-century Polish Art is located in Sukiennice on the main square in Krakow. The interesting exhibition is visited by thousands of tourists. That is why the main entrance to the gallery must meet the condition of accessibility.

In this case, the entrance door was based on a stone slab of several centimeters, which protected wooden elements of the entrance and was a kind of a building band. The difference of levels between the threshold and the square was small, but it constituted a certain barrier. Therefore, the slab has been cut across the entire width of the door. The barrier has been removed.



FIG. 28 The slab forming the threshold in the entrance door to the Art Gallery Sukiennice has been lowered to the floor level

The Baptistery is part of the famous cathedral ensemble of Florence. The facility is constantly visited by tourists. Therefore, it must also be fully accessible to people with reduced mobility. In the case of such a valuable monument, any interference is unacceptable. Therefore, the threshold at the entrance to the building was not removed, but was leveled with a small rubber ramp. It is not a permanent barrier removal, but in this case it is the right solution.



FIG. 29 Leveling the threshold at the door to the Florence Baptistery ensures accessibility

2. Removal of steps

The Czartoryski Museum in Krakow is an example of a monument in which the comprehensive accessibility was carefully ensured. During the general renovation, many architectural barriers were removed.

The entrance to the Arsenal, where the collections of ancient monuments are displayed, must connect the higher level of the street with the lower level of the first floor. This is an important place for all visitors entering the museum.



FIG. 30 Entrance to the Arsenal - the inclined floor connects the street with the first floor

To ensure the accessibility of the building, despite the difference in levels, the floor was rebuilt to remove all barriers. The entrance corridor is divided into two lanes, which allows larger groups of tourists to enter simultaneously and makes it easier for people with limited mobility to move around.



FIG. 31 The entrance room to the Arsenal has been divided into two lanes with a balustrade, one of which is intended for people in a wheelchair

Railings separate a lane on which people on wheelchairs can move safely. The flooring material is easy to use, has a completely modern look – just like the entire entrance area equipment.

In the Czartoryski Museum, there was also a need to eliminate the differences in levels between some of the rooms inside the main building. Among other things, it was

necessary to eliminate slight differences in levels between the adjacent rooms in which the exhibition is located.

The large thickness of the wall separating the rooms allowed the construction of the sloping floor in this space. The angle of the floor inclination allows the trolley to move between rooms.

The floors in the exhibition rooms are made of wood. However, in order to clearly mark the transition zone between them, the floor is made in black, highly contrasting color. Rubber markers have also been introduced for people with limited vision.

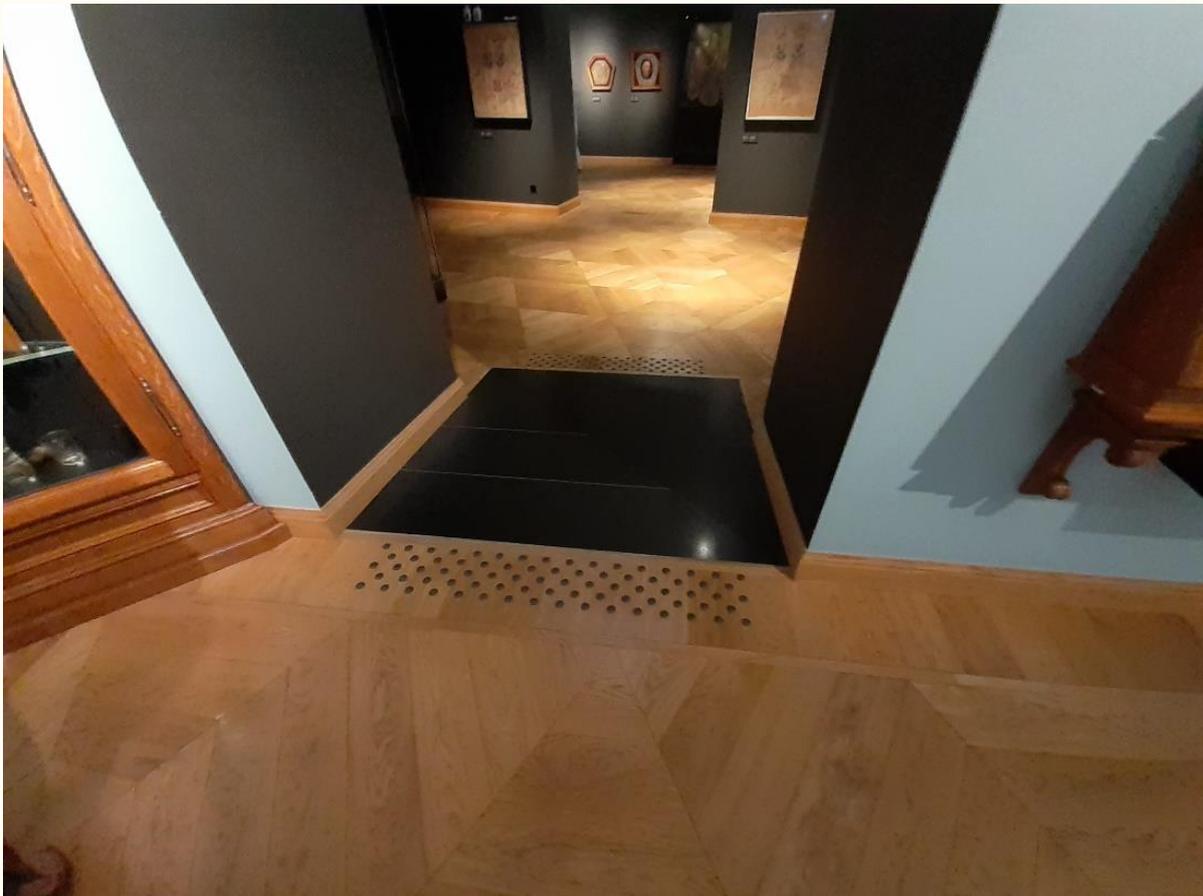


FIG. 32 Passageway between the rooms at the Czartoryski Museum - almost the entire section of the floor leveling the difference in levels is within the wall thickness

In the Czartoryski Museum, the differences in levels also had to be overcome in some of the corridors connecting parts of the historic building. The stairs were replaced with a floor. A corridor with a length of several meters allowed for a floor with a relatively small slope. There are handrails on the walls to help people with reduced mobility.



FIG. 33 A corridor in the Czartoryski Museum connecting rooms of different levels

A similar solution was used in the underground part of the International Cultural Center in Krakow. This institution is very active and in a certain period the rooms of the former tenement house in which the ICC operates became insufficient. It was decided to use the underground, among other things, by arranging an additional seminar room.



FIG. 34 A seminar room built in the basement of the International Cultural Center

The adaptation of cellars that were built at different times was a difficult task, also due to the differences in levels. In order to ensure communication between the elevator and the seminar room, the level difference was reduced by arranging a sloped floor in a long corridor. The handrails were installed on the walls.



FIG. 35 Corridor connecting the seminar room and the elevator in the basement of the International Cultural Center

3. Platforms and raised floors

In the historic complex at Wawel in Krakow, it is possible to visit the architectural and archaeological reserve called the Lost Wawel. It is an interesting combination of a museum exhibition presenting archaeological finds and architectural relics. They are exposed, among others fragments of the oldest buildings of Wawel, including the pre-Romanesque rotunda.

Visiting architectural relics is possible thanks to the construction of a platform that runs over the most important parts of the reserve. The platform is based on slender metal poles, which are located in places that do not violate the historic elements.



FIG. 36 The concrete platform makes it possible to visit the archaeological reserve, the elements of which are located on many levels

The concrete - and sometimes glass - platform is relatively narrow and the exhibition is extensive enough to allow you to see individual relics of the building. The posts supporting the sidewalks are high enough that any place - even under the platform, can be viewed from a different part of the footbridge.



FIG. 37 The platform is placed on slender supports which do not obscure the view of the exhibition

The concrete platform was constructed in such a way that it is possible to move around in the wheelchair. A ramp takes visitors over the entire archaeological reserve and leads directly to the exhibition halls. The entire exhibition is therefore accessible to people with limited mobility - the entire space, despite different levels, constitutes one area.



FIG. 38 The platform with the exhibition rooms creates one surface ensuring the accessibility of the entire exhibition

A very interesting archaeological monument in Krakow is the exhibition of Rynek Underground. Comprehensive archaeological work was carried out under the eastern part of the Krakow square. It Some very interesting finds from different periods of the city's development were kept. An archaeological reserve was organized and opened to the public. The exhibition covers almost 4,000 square meters, which allows visiting a huge number of monuments, which are on very different levels.



FIG. 39 Plan of the archaeological reserve of the Rynek Underground in Krakow

Despite the differences of levels, the entire exposition is accessible to people with reduced mobility. This is possible thanks to the introduction of a system of ramps, landings and raised floors. The platforms used in this exhibition are largely made of glass, which makes it possible to see the entire exhibition and all archaeological relics.

The Rynek Underground is an excellent example of combining accessibility with attractive presentation of a historic place.



FIG. 40 Glass platforms allow for a detailed presentation of all the elements of the archaeological reserve in Rynek Undergrounds

An example of a floor that protects an authentic monument and at the same time forms an uniform level is barracks no. 14 in the former Nazi concentration camp Auschwitz-Birkenau. The complex of 45 barracks is undergoing extremely careful conservation work. It is a very difficult job, because the barracks have been built almost 80 years ago as temporary facilities, made carelessly. However, from the point of view of historical, scientific and emotional value, the barracks are very valuable monuments. That is why they are subject to costly and long-term conservation works.



FIG. 41 The barracks in Auschwitz-Birkenau were temporary facilities, carelessly made of low-quality materials

The barracks are open to visitors. The small spaces in the barracks make it easy to damage the authentic finishing elements when a group of visitors enters. In addition, concrete and brick floors are uneven. Therefore, a raised floor system was set up above the real floor. It protects the authentic surface and creates a surface which facilitates movement . Thus, the system of raised floors can secure the monument while ensuring its accessibility.



FIG. 42 The raised floor allows the protection of an authentic monument and ensuring accessibility at the same time

4. Decor and furnishings of historic buildings ensuring accessibility

CHARACTERISTICS OF THE PROBLEM

The main problem limiting the accessibility of the monument are the architectural barriers that result from the building structure. Removing and limiting barriers is a complex activity, in which the elements of decor and furnishing of monuments may be helpful. They can make it easier for people with limited mobility to use the monuments and increase the comfort of this use.

Improvements related to the use of monuments by persons with limitations may generally include elements such as decor or additional equipment. This distinction is important because the first group of improvements is generally performed at the renovation or adaptation stage, so it should be planned before these works. However, the second group of improvements can be implemented at any time, because it only requires the purchase of appropriate equipment.

The first group of improvements includes, for example, the installation of various devices at the appropriate height, appropriate equipment of toilets and changing rooms, handrails. The second group of improvements includes, for example, equipping historic buildings with wheelchairs or additional chairs.

Appropriate signing is also important for all improvements. Any equipment is useless when there is no adequate information.

From the conservator's point of view, retrofitting a monument with equipment increasing the comfort and accessibility is neutral, as is the adaptation of standard equipment to the needs of people with limited mobility.

CHARACTERISTICS OF SOLUTIONS

Solutions aimed at adapting the decor and equipment of historic buildings to the needs of people with reduced mobility can be divided into several groups.

I. Devices enabling access to the monument

Providing access to a historic building often requires additional technical equipment. In addition to the devices and solutions already described in other sections, communication devices may also be needed. These devices should be installed in places ensuring accessibility there is no permanent service. This is a common situation with alternative entrances that are opened when a wheelchair user arrives. At the alternative entrance, devices that report the facility staff to the need to enter should be installed.

Communication devices - bells or microphones - should be mounted at an appropriate height. This height must enable a person in a wheelchair to communicate. The signal from this device should reach the place where the staff of the historic building is constantly present.

For conservation reasons, bells or microphones should not be mounted on historic elements. Therefore, a good solution is to mount the communication panel on a separate element.

2. Adaptation of equipment for the needs of people with limited mobility

The second group of solutions consists in adapting the standard equipment of the facility to the needs of people with limited mobility. One of the key problems is the

inability of wheelchair users to use various services that are standard in monuments serving various public functions.

In museums, theaters, schools, philharmonics, offices, there are, for example, cash desks, cloakrooms, receptions, toilets. Access to these places is difficult for people in wheelchairs due to the height of the counters, information points, and cabinets for storing things. This is a particular difficulty in self-service places, which are becoming more and more popular. The right solution is therefore to supplement the standard equipment with equipment placed at a height accessible to wheelchair users.

It is also very important to equip the toilet facilities with devices suitable for people with reduced mobility. In public facilities, toilets must be equipped with those devices. In historic buildings, it is sometimes impossible to find space for separate toilets, in such cases the existing toilet should be equipped with devices adapted to the needs of people with limited mobility. Of course, access to such toilets must not be limited by any barriers, and their size should enable a wheelchair user to move around.

3. Equipment facilitating the use of the historic building

The concept of accessibility should be understood not only as the elimination of architectural barriers, but also as the improvement of the comfort of using the monument by people with limited mobility. Accessibility understood in this way means, for example, equipping a public facility with wheelchairs for people with mobility problems. Wheelchairs can be offered to people who do not use them permanently, but may need them when visiting the historical site and staying in it longer. Chairs placed in various rooms of historical objects, where visitors can rest, can be treated in a similar way.

This type of equipment should be located in the right place in order to optimally fulfill its functions. For example wheelchairs should be available at the entrances to historic buildings - this is especially important in large complexes consisting of more buildings.

Information about the possibility of using wheelchairs should be visible. It is also advisable to provide assistance.

An important element of the equipment are also chairs on which one can relax while visiting historic buildings. These chairs do not have to be placed permanently in order not to disturb the organization of the space. However, in various parts of the building, for example in utility rooms, there should be folding chairs that can be used by people who need rest. Facility staff should offer this option.

Another element of equipment that can increase the comfort of visiting historical are seats of various heights.

EXAMPLES

I. Devices enabling access to the monument

The Old Orangery in Warsaw's Łazienki Park with limited mobility can use separate entrances to each floor, but the facility staff stays permanently only at the lower entrance.



FIG. 43 Panel for notifying the facility staff about the need to open the entrance to the gallery

Therefore, the alternative entrance to the upper floor is equipped with a device enabling contact with the staff. The device is mounted on a building wall at a height that allows a person in a wheelchair to communicate. The device and the alternate entrance itself are appropriately marked

The White House is one of the pavilions available for The facility is i n g i frequently visited due to its rich painting design. Therefore, it was decided to ensure the accessibility of this monument through an electric platform. A wheelchair user communicates with the facility staff via a microphone built into a free-standing element. Thanks to this solution, the installation of modern devices on the historic facade was avoided.



FIG. 44 The microphone for communication with the facility staff was installed in a free-standing element

2. Adaptation of equipment for the needs of people with limited mobility

The Czartoryski Museum in Krakow is visited by hundreds of thousands of tourists. Therefore, its availability was ensured with the utmost care. As part of these activities, among others, the panel that operates the lockers for storing the luggage while visiting the exhibition, was installed. The information panel - in Polish and English - is mounted at a height accessible to a wheelchair user.



FIG. 45 The control panel for luggage lockers in the Czartoryski Museum was placed at a height convenient for a wheelchair user

Also, lockers for tourists' luggage have been placed at a height convenient for wheelchair users – they can comfortably use the two lowest rows of cabinets.

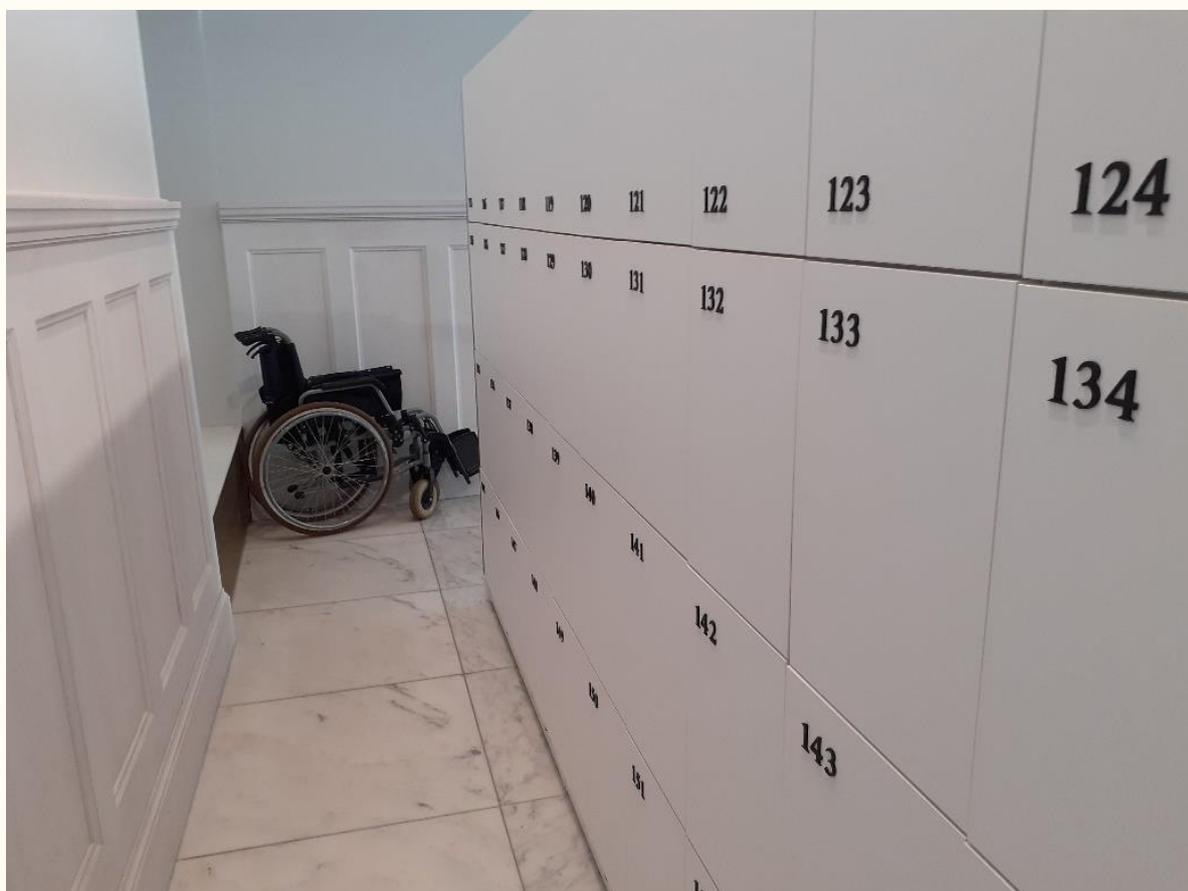


FIG. 46 The lower luggage lockers in the Czartoryski Museum can be comfortably used by wheelchair users

Toilets that can be used by people with reduced mobility are an extremely important element of the equipment in monuments serving public functions. The toilets in the Czartoryski Museum are properly marked and the access is not hindered by any barriers.

Toilets are designed in a way that allows people with limited mobility to use them. The toilets and wash basins are at appropriate heights, with handrails on both sides.



FIG. 47 The toilets in the Czartoryski Museum are of an appropriate size, and the sanitary facilities are equipped with handrails

3. Equipment facilitating the use of the historic building

The Czartoryski Museum in Krakow is equipped with wheelchairs that can be used while visiting the exhibition and the historic building. The wheelchairs are placed in the tourist luggage locker room at the entrance to the facility at the beginning of the tour. Thanks to this, tourists can immediately see that they can take advantage of this facility. The museum route is free of barriers limiting passage. The building is equipped with an elevator with a door that is wide enough to allow easy maneuvering of the wheelchair.



FIG. 48 A wheelchair in a luggage locker room - Czartoryski Museum

Folding chairs have been stored in several places in the Czartoryski Museum. They are located close to the route of the exhibition, so they can be easily used. Chairs are stored on movable stands so they don't take up much space and are easy to transport.



FIG. 49 The stands with chairs are movable and do not take up much space - Czartoryski Museum

Single chairs are placed in different places of the exhibition so person can use them.



FIG. 50 Chairs placed on the exhibition route in the Czartoryski Museum

The Arsenal in Krakow is an organizational part of the Czartoryski Museum. The exhibition in the Arsenal is visited by many tourists. Therefore, the facility is fully adapted to the needs of people with reduced mobility. Another element of the equipment that serves this purpose are seats of various heights.



FIG. 51 Benches with seats of different heights - Czartoryski Museum

Adaptation of historic buildings for disabled people

**Developed within project UNINET: University Network for Cultural
Heritage – Integrated Protection, Management and Use**

Co-funded by the Erasmus+ Programme of the European Union

Key Action 2: Strategic Partnership Projects

Contract n° 2018-1-PL01-KA203-051085



**This work is licenced under a Creative Commons
Attribution-NonCommercial-ShareAlike 4.0
International License.**