The historical heritage and the disabled – Italy study case

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ill. 1 – The city centre of Siena seen at the top of the hills. The position of the city centre makes it difficult to access from the railway station and the parking lots situated beneath. Photo credit: by the author.

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A group of people, including one person on wheelchair, was waiting in front of San Giuseppe church and pondering on how to get to the main square, Piazza del Campo, while avoiding steps and streets with steep slopes. It was not an easy task and finally they – resigned as they were – decided to take a taxi to get there.

Alas – it was a normal situation in Siena, one of the most visited Italian cities, known mostly for its architecture and its traditional horse race, *palio*, a century-old competition between its districts called *contrade*. It attracts hundreds of tourists eager to get to know the city and its rich culture. Unfortunately, as many other Italian cities and towns, it is difficult to access and to wander around for the disabled. Indeed, its hilltop position, along with historical buildings and streets, makes it difficult to adapt the city to their needs.

It depicts well a wider-scale dilemma, thus the choice between the preservation and protection of the cultural and historical heritage and the adaptation of the latter to the needs of the disabled. Whereas neither may be neglected, they cannot coincide. On one hand, there is the need to keep the protected heritage unspoiled for the generations to come as it has been before, whereas on the other hand there is the need to make it accessible for all. The problem therefore, applies to everywhere; it is not limited to Siena or even Italy. Although, it is precisely in Italy where it becomes a matter of a particular importance. It is so because of a very dense concentration of the cultural areas, Italy being the country with the highest number of World Heritage Sites, along with many otherwise listed sites[1]. It becomes then particularly interesting to study how

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1   The first Italian law for the protection of the "natural beauties" of the landscape dates from 1939.

the problem is being resolved in Italy – on various scales. First, the ways to access the city. Then, how to move around. And finally – how to enter specific buildings.

Arrival to the city

When considering the very problem of arrival, various cities all across the country become an issue due to their construction atop of a hill. What once was a reason to defend and control better the surroundings, to make it more difficult for the enemy army to reach the settlement, today becomes a headache and an obstacle for many.

ill. 2 – The exterior of the escalator at Fontebranda in the city centre of Siena. The exterior walls were built so that the new structure would merge with the stones and bricks of the surrounding buildings and walls. Photo credit: by the author.

If one comes back to the example of Siena, the main accesses (big parking lots and the railway station) are placed below the hilltop in the valley, leaving over sixty meters between the arrival point and the historical centre. Given the fact that the city was the first one in Europe to introduce a LTZ in the 1960s[2] and ever since it maintained its historical centre closed for the massive traffic, a series of escalators were created in order to make the centre easily reachable from the parking lots placed below, in the surrounding valleys. Since it is a complex large-scale and quite successful project, it was acclaimed by many[3]. Indeed, it helped the centre to preserve its historical character and it maintained functional the system of the LTZ. Although the city has surely improved its accessibility, it has not been thought as easily accessible by the disabled. Amongst the escalators built, there is almost none with the appliances that enable the disabled to climb to the centre of

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[2] The Limited Traffic Zone was introduced in 1965 by the city board of mayor Fazio Fabbrini. Interview with Augusto Mazzini from October 30th, 2013.

[3] "*Il progetto senese ha vinto importanti riconoscimenti nazionali e internazionali*" [it. "*The Siena project has won important national and international awards*"]. See: www.sienaparcheggi.com.

the city. Among others, one may count those going upwards from the railway station and from Fontebranda parking lot. Whereas the first is one of the main gateways to the city, the latter is interesting since it was built already inside the city wall perimeter. It lies inside the historical centre, and thus it had to be aesthetically suitable for the protected surroundings[4]. Indeed, it could have been built since its spaces were dug inside the rock and they cannot be seen from outside. The exterior is covered by rocks and bricks similar in colour to the surrounding buildings and city walls. It shows in fact an excellent example of how an accessibility structure may be neatly fitted into a historical and demanding context. However, an important aspect of the Fontebranda escalator, it is the lack of a lift or a stair platform enabling a disabled person to actually use the structure. In fact, whereas it surely helps the elderly inhabitants, unfortunately it remains indifferent for the disabled.

The issue becomes even more pressing when it comes to the structure leading from the railway station to the city centre. The escalator and adjacent stairs are very useful in order to reach quickly the city centre. Although, like in Fontebranda, there are no appliances nor lifts suitable for the disabled. In addition, it seems strange since there were no spatial constraints and it would have been perfectly possible to include some of these structures. In fact, the solution for the railway station escalator is simple and easy: it consists in adding a moving platform along the staircase – a device that would be easily fitting in the existing spaces.

Those structures however remain at present inaccessible for the disabled, despite their importance in reaching the city centre and improving the general accessibility of Siena. The suggestion for the disabled is thus to choose other parking lots[5] – those that do not require to climb a steep street – or to use sporadically passing public transport to get uphill from the railway station. This solution although is limited and insufficient since it bonds the liberty of moving to the public transport timetable or to the cemented knowledge of the topography of Siena in order to choose the right parking lot[6].

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[4] According to the Italian law, every new construction and every alteration of the existing building in an area of landscape and historical interest must have a positive opinion of the provincial cultural heritage authorities (it. "*sovrintendenza*").

[5] Interview with Siena Parcheggi staff, the manager of the escalators and staircases around Siena from July 14th, 2017.

[6] No information is provided on the preferences for the disabled as one approaches the city along the main roads.

ill. 3 – The interior of the escalator going from the railway station towards the city centre. No devices improving the accessibility for the disabled were included. Photo credit: www.sienaparcheggi.com.

Another Italian city, Perugia, shows although a solution that resolves the problems present in Siena, even in case of the historical centre perimeter. As well as Siena, Perugia's city centre lies atop of a few hills and it is difficult to be accessed by the disabled from outside. Although, a new public transport infrastructure was designed by Jean Nouvel and it was opened in February of 2008 – the minimetrò, a 3.2 kilometres long cable-pulled small tram line that connects the university campus and the railway station to the city centre[7]. Its stations, easily accessible for the disabled, create a truly innovative system of reaching the city centre, equipped with lifts, paths for the blind users and delay of the door closing mechanism in the tram cabins. Its final stations enter under the city centre, making the new structure presence subtle, such as in case of the escalator of Fontebranda in Siena. The difference lies in the adaptation of the entire structure to the needs of the disabled and others who need assistance[8]. The lifts and staircases arrive directly inside the city centre perimeter, but they still do not alter its physical appearance. The final city centre station is connected to indoor spaces inside historical buildings, leaving thus the outdoor cityscape almost unchanged[9]. The citizens and the tourists may arrive to the terminals inside the buildings and then simply go out to the streets of the city. The obvious issue in such a solution is the cost that reached over 100,000,000 euros for the line that consists of seven stations only[10]. That is the main reason why the second line is still in planning and the works have not started yet.

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[7]   The artistic supervision over the project was handed over to Jean Nouvel in 2003. The construction of the infrastructure lasted from 2003 until 2008. See: www.minimetrospa.it.

[8]   As it reads on the website of minimetrò, it was designed to be secure and available "*also for those in need of particular assistance: children, elderly and disabled*". See: www.minimetrospa.it.

[9]   The final stop of Pincetto arrives below some existing buildings and the only outside element is a roof covering the exit from the bus stop.

[10]   The estimated cost was of 70,000,000 euros, although due to the unpredicted construction development it raised to 102,000,000 euros. See: www.minimetrospa.it.

The example of Perugia shows although that the reason of the success of its minimetrò over the escalators in Siena lies in the thorough design and in the consciousness of what needs to be done. Whereas in Perugia, it was clearly stated that the infrastructure was to be available also for those in need of assistance, in Siena the results show there was no such assumption.

ill. 4 – The infrastructure of Perugia minimetrò before it enters under the city centre. This solution enables to access the city easily without altering its historical character. Photo credit: Franco Origlia, Getty Images.

Across the city

The problems although are not limited to the very arrival to the cities. Sometimes the very form of the city makes it difficult to be easily accessible by the disabled. If one thinks about Venice and its narrow streets and multitude of over 400 bridges across the canals, it seems that it is almost impossible for a disabled person to wander around and to see its architecture. However, the city came up with a very interesting project consisting in preparation of maps – possible itineraries across the city that show the areas that may be easily visited by people on a wheelchair. This initiative was a very important one for Venice, mainly because it came from the cooperation of the city administration and its inhabitants. Many itineraries were prepared based on personal experiences of people living in Venice and struggling with those problems daily[11]. Their ideas were gathered and today they are easily accessible on the internet.

The solution lies in the adaptation of the public transport in Venice – the *vaporetto* – to the needs of the disabled[12] and thus every itinerary may begin from a boat stop and cover the surrounding area creating then

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[11] "*Alcuni degli itinerary proposti sono stati segnalati dalle persone disabili residenti in città e dai loro familiari, che hanno volute mettere a disposizione di tutti, con grande passione, la loro esperienza di vita quotidiana*" [it. "*Some of the proposed itineraries have been marked by the disabled resident in the city and by their relatives who wanted to put at everyone's disposal, with great passion, their daily life experience*"]. See: www.comune.venezia.it.

[12] Not all public lines are adapted to the use of the disabled. The lines 1 and 2 have all boats accessible. See: www.comune.venezia.it.

a series of clusters that are accessible for all. Such areas extend although to the first encountered bridges. The maps of the areas are marked with main sights one may be interested to see in each area and they also contain information on the access to particular buildings in the surroundings, making the website *de facto* a guide for the disabled across Venice.
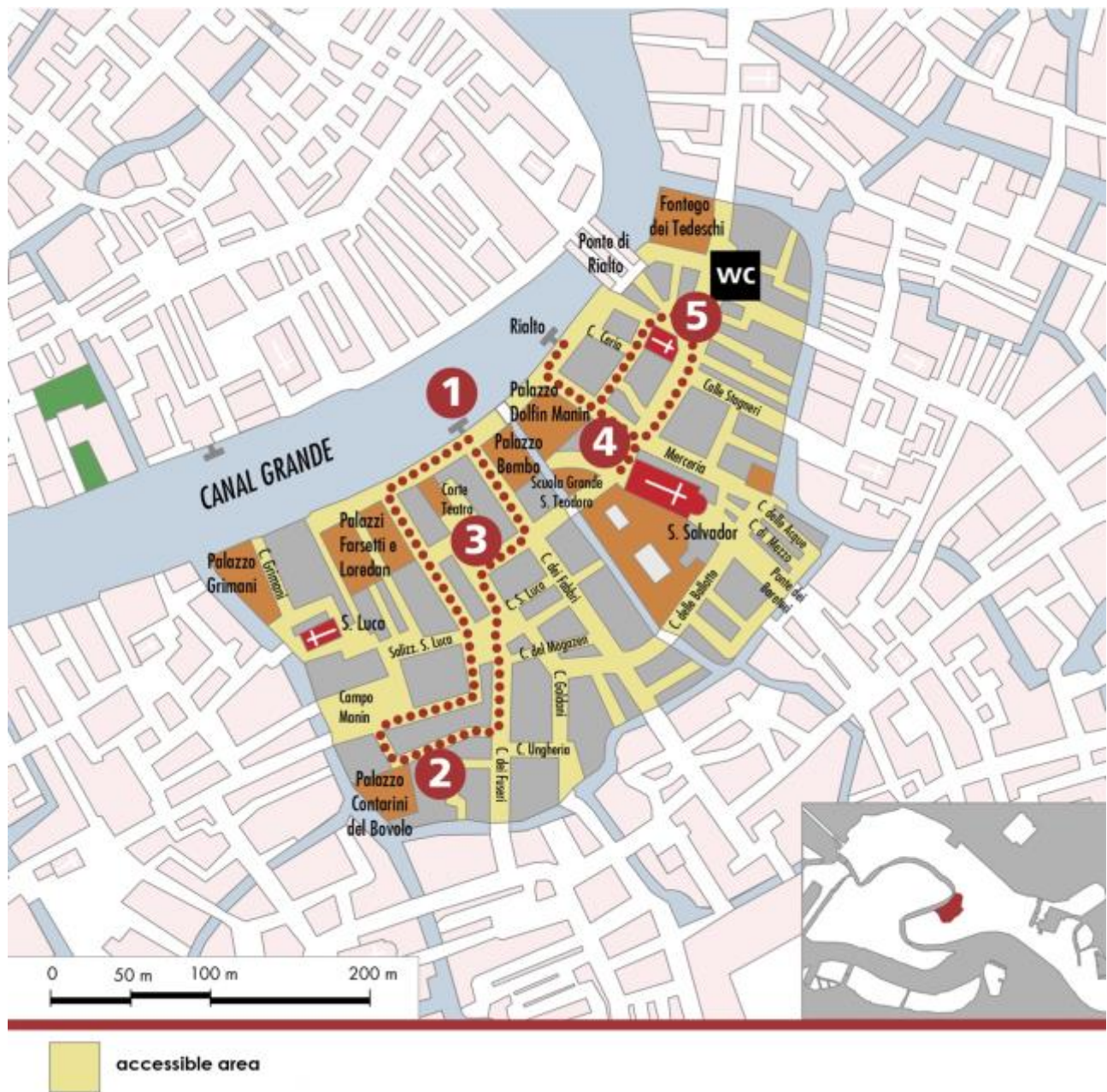
ill. 5 – One of the map fragments of Venice with the area accessible for the disabled. Various parts of the city may be visited thanks to the accessibility of the public transport called vaporetto. Photo credit: Venice Town Hall, www.comune.venezia.it.

A similar solution was studied in Milan where a series of itineraries for the disabled, including those on wheelchairs as well as blind people, was prepared. A specific website was launched at the occasion of EXPO 2015 in Milan. Among other services, it offers a list of 12 itineraries across various parts of the city with specific descriptions of important sights and buildings, including the access and the adaptation to the needs of the disabled. Thus, qualified staff from the disabled associations working in the Milan area prepared the descriptions and indications giving trustworthy and objective information[13]. The success of this project was

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[13] See: www.milanopertutti.it.

proved by awarding Milan the Access City Award 2016 for the accessible-friendly city. In the decision of the commission, it was stated in fact that the city has proved "*excellent and consistent accessibility efforts*"[14].

Indeed, the policy brought forward in Venice and in Milan seems to be a just compromise between the needs of the disabled and the preservation of the historical heritage. Although it lies rather in the field of city planning policies and management rather than architectural development, it remarkably helps to reduce visible accessibility structures across the cities.

Another, yet still interesting solution was proposed in Perugia. Although it does not imply any architectural intervention, it enables to make city more accessible for the disabled: a small number of electrical vehicles is available to rent for free in order to be able to move in the areas of the city centre with more steep slopes and streets[15].

Even if these solutions may be quite common for many cities – and the example of the itineraries for the disabled both in Venice and in Milan may be a proof – the most interesting and the most complex problem is connected to the accessibility to the buildings. Whereas the mobility problems in a city may follow similar patterns in different cities, it is much more difficult on a scale of a single building, each one with its own form and history.

Access to the buildings

The main problem of the protected buildings and the access for the disabled people lies in the historical conformation of those constructions atop of the steps. In fact, many public buildings – but also some private ones – were built atop of a series of stairs. A church, a public palace, a town hall, a castle and many others were once built in that way in order to show their importance.

These steps in front of the public buildings mark the representative entrance to the building and thus constructing an additional structure, such as a ramp or a moving platform would have changed their appearance too drastically. In fact, in San Petronio church in Bologna, the provincial cultural heritage authorities refused to create a ramp along the steps in front of the main facade of the building[16], which is one of the symbols of the city. The alternative solution was although proposed – it consists in using one of the rear service entrances to the church that do not require climbing over any steps. Thanks to that proposal, the facade may remain unchanged and the accessibility is guaranteed in a simple manner, similar to the policy of the city accessibility maps in Venice or Milan.

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[14] See: www.ec.europa.eu/social.

[15] The project "Perugia Easy to Go" foresaw "*electric vehicles for disabled persons to enable a better visit of the historic centre*". See: www.turismo.comune.perugia.it.

[16] The problem of additional structures in front of the church facade present in the article "San Petronio, il metal detector in via de' Pignattari, alll'ingresso dei disabili" in *Resto del Carlino* from February 24th, 2015.

ill. 6 – Façade of the San Petronio church in Bologna, one of the symbols of the city. No devices were authorised along the façade, the access for the disabled was established at one of the former service entrances. Photo credit: Wikipedia Commons.

When there is although no such possibility, the accessibility is often granted thanks to a ramp that is positioned in a remote part of the building that is less visible but yet still functional. Such a solution was chosen for instance in the Uffizi Gallery in Florence where the *portico* along the buildings rises three steps above the pavement level. The access ramp was placed in a lateral street and therefore, without disturbing the courtyard between the two wings of the building. In fact, due to the Italian law restrictions, the heritage authorities have always to approve an accessibility solution in a protected building and thus often the most visible structures are declined in order to find a more moderate manner of access, as in case of Bologna.

Whereas the most important buildings may benefit from the support of the heritage authorities and from alternate entrances, in most cases the disabled have to cope with the problem of a single step or a few ones placed at the entrance of almost every building. Historically it was meant to be the protection of the indoor spaces from flooding with rainwater and dirt from the streets. It helped also to resolve problems connected to the humidity absorbed from the ground. Whereas it remains useful, it creates a major obstacle for every disabled person.

A solution for such an issue was proposed in the winning competition entry design for the Museo degli Innocenti in Florence from 2008. The proposal considered a mechanical device instead of a simple door. It would have enabled both preserving the difference in floor level between the outside and the inside and providing, when the museum would be open, a small ramp that would fold back once it is closed at the end of the day. In such manner, a folding ramp would grant the accessibility for the disabled but it would not

have altered permanently the cityscape[17]. Whereas the competition entry proposed a complicated mechanism in order to move different parts of the structure, it would have been possible to adapt a much simpler device for common buildings. In fact, a similar device yet much smaller, consisting in simply lowering the entrance step thanks to a hinge, could have been a solution for the mass problem. The mechanism would be rather small and it would not affect the exterior appearance of the buildings.

However, even if the entrance device to the museum looked promising in the renderings, due to the technical difficulties, the idea was abandoned and the solution was replaced with a new normal stone ramp built in front of the entrance[18]. Whether the fate of the device for the Museo degli Innocenti depicts the difficulties that will be faced by the rotating step mechanism, it is yet to be seen, since there was yet no application of that solution.

ill. 7 – Rendering of the entrance to the Museo degli Innocenti. The mechanical device was to enable to enter directly from the street level to the building, but was abandoned during the design process. Photo credit: Ipostudio Architetti.

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[17] In the description of the entry by Ipostudio, one reads: "*Obiettivo principale del progetto è (…) l'invenzione di un nuovo accesso per tutti, gestanti, anziani, genitori con carrozzine, disabili che, direttamente dalla piazza, possano facilmente accedere a tutti i luoghi della struttura*" [it. "*The main purpose of the design is (…) the invention of a new access for all: pregnant, elderly, parents with prams and disabled who may easily access all the areas of the building directly from the square*"]. See: www.divisare.com.

[18] The present-day photographs of the entrance show a stone ramp in front of the entrance not present in the competition entry renderings. The change was introduced during the approval of the design for the building permission.

Impossible compromise

Although, some buildings and structures cannot be adapted to the needs of the disabled. It would have been impossible to adapt them in order to fulfil their needs because the change would have had to alter significantly the historical structure. Thus, it seems difficult to think about an aesthetic and fitting improvement, for instance, for the Campidoglio staircase or the famous Spanish Stairs in Rome. The very nature of these structures lies in the inaccessibility for the disabled and it seems difficult to provide a system to resolve that problem. Certainly, it is possible to access easily the bottom and the top part of the stairs from somewhere else, but it will remain impossible to climb along the stairs with assistance of any new device. It is difficult to imagine the staircase designed by Michelangelo with added moving platform or another structure.

In some cases, the policy of the cultural heritage sites lies in enabling a visit for the disabled provided they are accompanied. For instance, the Boboli gardens in Florence have easily accessible alternate entrances, although due to the landform and the rising hills inside the gardens and to the gravel along all the paths, it seems impossible for a disabled person to be independent while on wheelchair on their own. However, with another person, the visit seems to be possible[19].

A partial solution to these problems seems to emerge however in Palermo. The city council promoted a similar accessibility map to those from Venice and Milan, although with some additional features. Although not yet functional, it was stated that the city would prepare a virtual tour in some of the buildings that cannot be accessible, such as Martorana church or Catena church[20]. At present, such features are not ready yet. Although, with the recent development of the augmented reality and its various uses[21], a truly immersive virtual visit may be an opportunity not to underestimate when talking about the accessibility of the historical heritage for the disabled. One may question however whether such solution is sufficient to fulfil the right to cherish the cultural and architectural heritage by the disabled citizens, and in addition, that question brings to another, more complex one.

Between the progress and the present

The advancement of technology, such as the augmented reality, leads in fact to another doubt. Various breakthroughs in construction technology made it possible to create new forms, new images and to look for new solutions. It has been happening in other fields too, for instance medicine. The march forward in medical research may lead to pondering questions like: may the problems such as disability and limited mobility be finally resolved soon? An infamous example of medicine's leap forwards is the history of Oscar Pistorius[22]. Putting aside other aspects, in the field of medicine, he showed how to tame disability and that new technologies might actually be a solution and that they may resolve the disability problem at the very core of it. A solution which, for the moment being, is out of range for many and cannot be applied on big scale

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19 It reads "*il giardino è percorribile con un accompagnatore*" [it. "*the garden is accessible in a company of another person*"]. See: www.firenzeturismo.it.

20 "*Presto presenteremo anche le tecnologie all'avanguardia che permetteranno alle persone disabili di poter visitare virtualmente i luoghi inaccessibile (…) come la chiesa della Martorana, della Catena o anche Villa Niscemi*" [it. "*Soon we will present the avantguard technologies that will let the disabled to virtually visit the inaccessible places (…) such as Martorana church, Catena church or Villa Niscemi*"]. See: article "Nasce Palermo accessibile: una mappa per turisti disabili" at www.siciliainformazioni.com from March 25th, 2016.

21 For instance, the augmented reality is already used as a therapy for people who became disabled due to an injury. See: www.vrs.org.uk.

22 Oscar Pistorius, a South African runner was qualified for the 2012 Olympic Games and he participated in the 400 meters men semi-final. He was the first amputee disabled runner to compete at the Olympic Games. He was able to participate thanks to his prosthetics, a pair of carbon-fibre running blades.

due to its cost although[23]. It is however worth considering that with time passing, a similar idea may become easily accessible for all suffering from disability. This idea leads to the final consideration – how to make architectural heritage accessible for all without altering it while waiting for a major medicine technology breakthrough.

In fact, given the progress of technologies, it is plausible to think that in the upcoming years the new solutions would arise and resolve many of disability problems. This however cannot mean that architectural solutions today may be neglected – as long as they are to give the possibility of access to the present-day disabled.
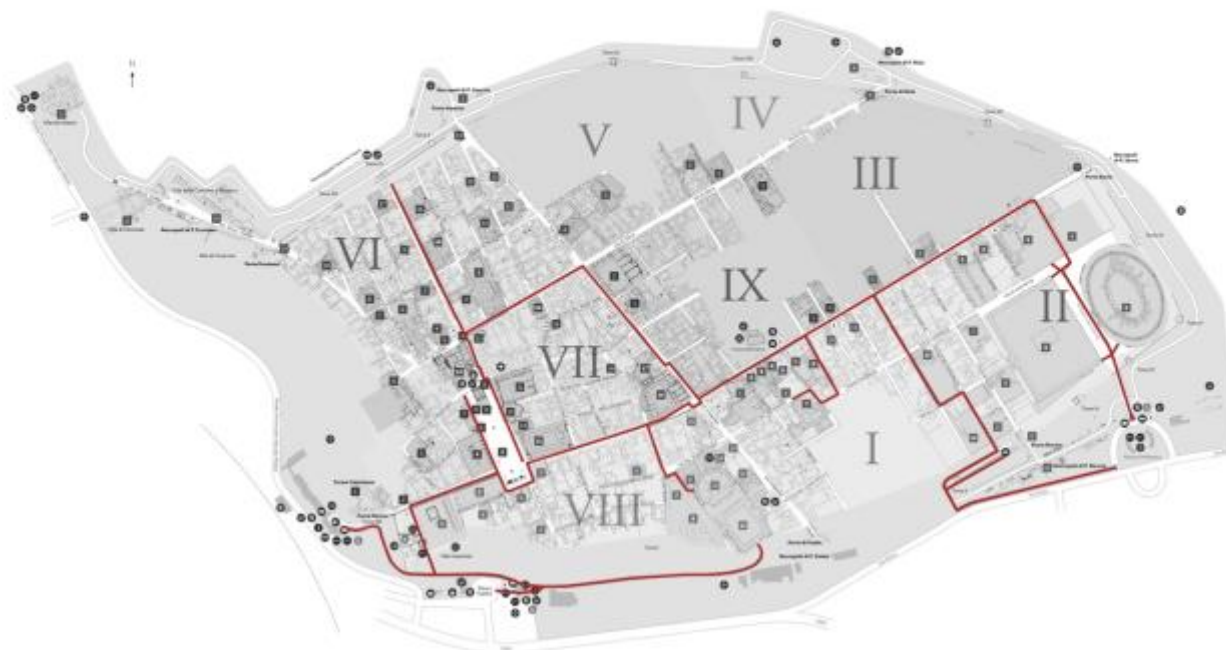
ill. 8 – The itinerary "Pompeii for all" inside the ruins. Map of the new accessible itineraries. Photo credit: Parco Archeologico Pompei, www.pompeiisites.org.

An interesting solution was proposed at the archaeological site of Pompeii in southern Italy. The world-known ruins of the Roman city destroyed by the eruption of Mount Vesuvius create a difficult environment for the disabled: the street level is much lower than the sidewalks and it becomes impossible to cross a street. Moreover, many buildings cannot be accessed due to the steps at the entrance and some areas are difficult to enter because of ground paths that are tiring to use a wheelchair on. Therefore, starting in 2015, the archaeological park was witness to the works of the project "Pompeii for all", finalised in December of 2016[24]. The project introduced a new itinerary, 3 kilometres long, designed in order to be accessible for the disabled. It consists of new, naturally paved paths across the site, some ramps, and passages enabling to cross the streets along the ancient Roman crossings. In such way, all tourists may visit both public areas of the ancient city, but also some major private villas inside the complex. It was an important issue since it enabled a visit not only to disabled tourists but, as it was underlined by the director of Grande Progetto Pompei Luigi Curatoli, also to parents with prams and those with visual impairment[25]. Moreover, the project consisted also

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23   The cost of each limb is estimated at $15,000-18,000 given they use high quality materials and they are custom-made. See: www.wired.com.
24   The project "Pompeii for all" [it. "Pompei per tutti"] was launched in 2015, it was opened on December 2nd, 2016 in the presence of the Minister of Culture.
25   See: *Declaration of the General Director of Grande Progetto Pompei Luigi Curatoli*, www.pompeiisites.org.

in guaranteeing the maximum security to the visitors: bracelet sensors may be given to the visitors and thanks to them every unusual movement, such as a fall or emergency, may be easily detected.

It is also worth underlining that the construction of the itinerary and the accessibility structures was preceded by archaeological excavation that were extremely helpful in understanding the relationship between the various elements of the ancient city – a house, a workshop and a street[26]. Simultaneously, the works enabled to restore some elements of the ancient ruin complex, such as street cobbles and pavement stones[27]. It shows in fact that a new accessibility structure is not necessarily an obstacle and a nuisance for the historical buildings and that both can benefit one from another.

As the designers of the project underline, the entire programme was thought and executed according to three major points: resistance, reversibility and aesthetic compatibility with the archaeological site[28]. It was guaranteed by the participation of some disabled organisation in the design process, along with a group of archaeologists, architects, engineers and restauration experts, but also by various trials of materials[29] to be safely used at the construction site. Indeed, the results of the entire programme were largely acclaimed as an important step forward in improving the accessibility for the disabled.

The example of Pompeii is very clear and illustrative in showing what is important in today's designs aimed at improving the accessibility of cities and buildings to the disabled. It respects both the historical heritage and the security or the well-being of the disabled visitors. Although, the solutions to the problems of the disabled are many and they often come from various sources – engineering possibilities as in Perugia, personal experiences as in case of the maps of Venice or others. It seems although that the common ground of all these solution is the cooperation of multidisciplinary groups that – thanks to the exchange of know-how and various experiences – may propose new solutions and improve the existing ones.

ill. 9 – The itinerary "Pompeii for all" inside the ruins. Passage along the ancient pedestrian crossing. Photo credit: www.lifegate.it.

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26 Interview with Laura d'Esposito, archaeologist and operating director for the project "Pompei for all". See: www.repubblica.it.

27 Interview with Marialaura Iadanza, archaeologist from the provincial cultural heritage authorities. See: www.repubblica.it.

28 Interview with Francesco Sirano, the responsible for the project "Pompeii for all". See: www.repubblica.it.

29 Various trials were tested in order to obtain the optimal mixture to be used as the paving of the pathways. Finally, a mixture of hydraulic lime was chosen, given its compatibility with the site and the lack of use of concrete. See: www.pompeiisites.org. Many professionals were working on the project, see: *Declaration of the Director of Cultural Heritage Authority for Pompeii Massimo Osanna*, www.pompeiisites.org.