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XIX INTERNATIONAL FORUM

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Conference report

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Design for all, a strategic, inclusive and sustainable challenge for the Arab and Norman UNESCO itinerary of Palermo

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Abstract

Sicily, with its seven sites recognized by UNESCO, is the Italian region that can boast the highest number of them: the last elected is the city of Palermo, which since 2015 is also part of the prestigious *World Heritage List*.

The Palermo's Arab and Norman itinerary unfolds through also seven monuments: the Royal Palace, the *Palatina* Chapel, the Churches of *San Giovanni degli Eremiti*, *Martorana* and *San Cataldo*, the Cathedral, the *Zisa* palace and the *Admiral's Bridge*, adding also the Cathedrals of the cities of Cefalù and Monreale.

However, Palermo has some critical issues that make the tourist route difficult and uncomfortable, not easily accessible, because of the limited physical connections that make it difficult, both for citizens and tourists with disabilities to move from one monument to another one.

Communication and easy accessibility become urban and architectural design priorities, as well as the safety of use in the intricate maze of narrows and winding alleys, often presenting stairs or steep slopes inside the historic spaces, having discontinuous stony paving and so creating architectural barriers.

The theme could be extended to many other parts of the historic center and to the expanded use of all the city monuments: Palermo, a Mediterranean capital, becomes a monument and a great architecture of itself, experienced most of the year along the street and in the pedestrian paths, the squares and the other city open spaces.

This study aims to address the issue of accessibility for different users, with particular attention to the fragile ones and different ways of traveling/moving (on foot, by bike, in a wheelchair, etc.), extended to the analysis of the historic city center and with a particular attention to the Arab and Norman itinerary.

Keywords: Palermo, Arab and Norman UNESCO itinerary, design for all, protection, management, sustainable strategies

1. Introduction. From the origins towards the Arab and Norman itinerary for Palermo

The inclusion of an Arab and Norman itinerary for Palermo in the UNESCO *World Heritage List (WHL)* is proof of how much this city can really boast a very strong socio-cultural and historical-artistic richness. With its seven monuments, in addition to the Cathedrals of Monreale and Cefalù, the Palermo candidacy in July 2015 marked the beginning of another "itinerary", not only monumental but also touristic/economic and international, starting a relaunch of a financial recovery and a more aware attitude to the themes of the enhancement and protection of the historic city, the valorization of urban and extra-urban landscape, the decorum and safeguard use of places and architectures.

The UNESCO criteria on the basis of which the nine monuments have been registered in the *WHL* for exceptional characteristics are mainly these two ones:

- *criterion (ii): Arab-Norman Palermo and the Cathedral Churches of Cefalù and Monreale bears witness to a particular political and cultural condition characterized by the fruitful coexistence of people of different origins (Muslim, Byzantine, Latin, Jewish, Lombard, and French). This interchange generated a conscious and unique combination of elements derived from the architectural and artistic techniques of Byzantine, Islamic, and Western traditions. This new style contributed to the developments in the*

architecture of the Tyrrhenian side of southern Italy and spread widely throughout the medieval Mediterranean region; - criterion (iv): Arab-Norman Palermo and the Cathedral Churches of Cefalù and Monreale is an outstanding example of stylistic synthesis that created new spatial, constructive, and decorative concepts through the innovative and coherent re-elaboration of elements from different cultures [1]. Not surprisingly that the Mayor of the city considered the whole itinerary and the seven Palermo's inserted monuments as "tiles" of what he called the "*mosaic of Palermo*", a multiform and diverse net, also multiethnic and having a strong integration and equality.

However, the city reveals in its entirety, not only in the itinerary, its real Arab and Norman essence, its Mediterranean centrality and its role of reference point for all Europe.

The itinerary is part of a larger and more complex project and strategy of enhancement/conservation, which saw the participation of the Sicilian Region, the municipal Administrations of the three cities (Palermo, Monreale and Cefalù), and numerous secular and religious local Institutions (i.e. Superintendence at Monuments, Curia).

Nowhere else as in Sicily, and in this case in Palermo, is there a concentration of endemic characters, resulting from the sedimentation of colonization that have coexisted in symbiosis, in a clot of historical, geographical, political and cultural contingencies; the eminently Sicilian historical events are part of the broader entire European political history, in that of the territories bordering the Mediterranean Basin, a crossroads between Western Latin, Eastern Byzantine and Islamic cultures: the Islamic government, which established itself in Palermo in 937, obtains the control of the city by building the Emir citadel called *al-Halisah*, also defined *Kalsa*, that means "the Chosen" and in that period Palermo really assumed the role of capital of the Mediterranean, like other cities as – for example - Cordoba, Cairo and Constantinople.

Roger the Norman, who arrived in Sicily after 1055, was crowned as king of Sicily in 1130 into the cathedral of Palermo and the city became the capital of the first Norman kingdom of Sicily, with coexistence between peoples and cohabitation of Christian communities, Orthodox, Muslim and Jewish, becoming a multiracial and multilingual city.

Thanks to the Norman direction, which facilitated trade between northern and southern Italy, also favoring the Pisan, Genoese and Venetian merchants, the cultural rebirth of Sicily and Europe of the twelfth century took place, with the formation of an Euro-Mediterranean cultural *koinè* and an artistic expression, defined precisely as *Arab and Norman*, which placed Sicily at the center of the history of art during the Mediterranean Middle Ages. [2] [3]

It should also be remembered that Palermo, assuming as a Capital in 1130, became a tangible place of Arab and Norman way of living and syncretism, multifaceted and multilingual people, with material and cultural stratifications still now visible and tangible inside the city, due to its urban layout, the concurrence in a same district of churches and mosques, palaces and gardens, the variety of ethnic groups and religions: still in Norman times, the city was surrounded by the lush garden of *Genuardo*, which means "Paradise of Earth", connecting the city with that one of Monreale, with royal gayety pavilions and palaces, such as the *Zisa* one (also the *Maredolce* castle, the superior and inferior *Cuba*, the *Scibene* castle,...) [4].

The Norman client favored and became ambassador of a mixed Byzantine/Islamic/Romanesque culture from beyond the Alps, capable of capturing visitors of the time and then, over the centuries, other travelers of "paths" and "itineraries" such as Goethe, Guy de Maupassant and that of the *Grand Tour voyage*, as well as the cities of Cefalù and Monreale were inextricably linked to the Norman Palermo, due to the legend of the construction of their cathedrals, favoring the dreams of kings who have given rise to admirable examples of architecture.

Precisely the characteristics of strong integration between urban-countryside and landscapes, between architecture and nature are the generating reasons of the Palermo's UNESCO itinerary; its strength absolutely has been perceived during the itinerary itself, in an integrated and symbiotic path, which can be observed by all users, being they citizens or tourists, excluding and neglecting nothing/nobody, with the design aim that any user can join the itinerary in a regime of total visitability [5]. The nine monuments (the Royal Palace, the seat of the oldest parliament in Europe and its *Palatina* Chapel, the Church of S. *Giovanni degli Eremiti*, the Church of S. *Maria dell'Ammiraglio* also called *La Martorana*, the Church of S. *Cataldo* with its typical red little domes, the Cathedral, the *Zisa* palace, the *Admiral's* bridge, the Cathedral of Cefalù, the Cathedral of Monreale) which make up the site "*Arab and Norman Palermo and the Cathedrals of Cefalù and Monreale*", were therefore selected as serial emblems of historical-cultural relevance and because they appear in a good state of conservation, in decent general conditions of accessibility and usability [6].

These are religious or civil buildings of great value, the result of a choral work of workers who were able to reach thresholds of high artistic quality of the Mediterranean Middle Ages, as already specified, representing a synthesis of Arab and Norman artistic and architectural production, single but also capable examples to create a "network" and at the same time organic, some of which rise to real masterpieces for mosaic decoration (i.e. the Cathedrals of Cefalù and Monreale), to constitute an *unicum* (like the *muqarnas* wooden ceiling of the *Palatina* Chapel).

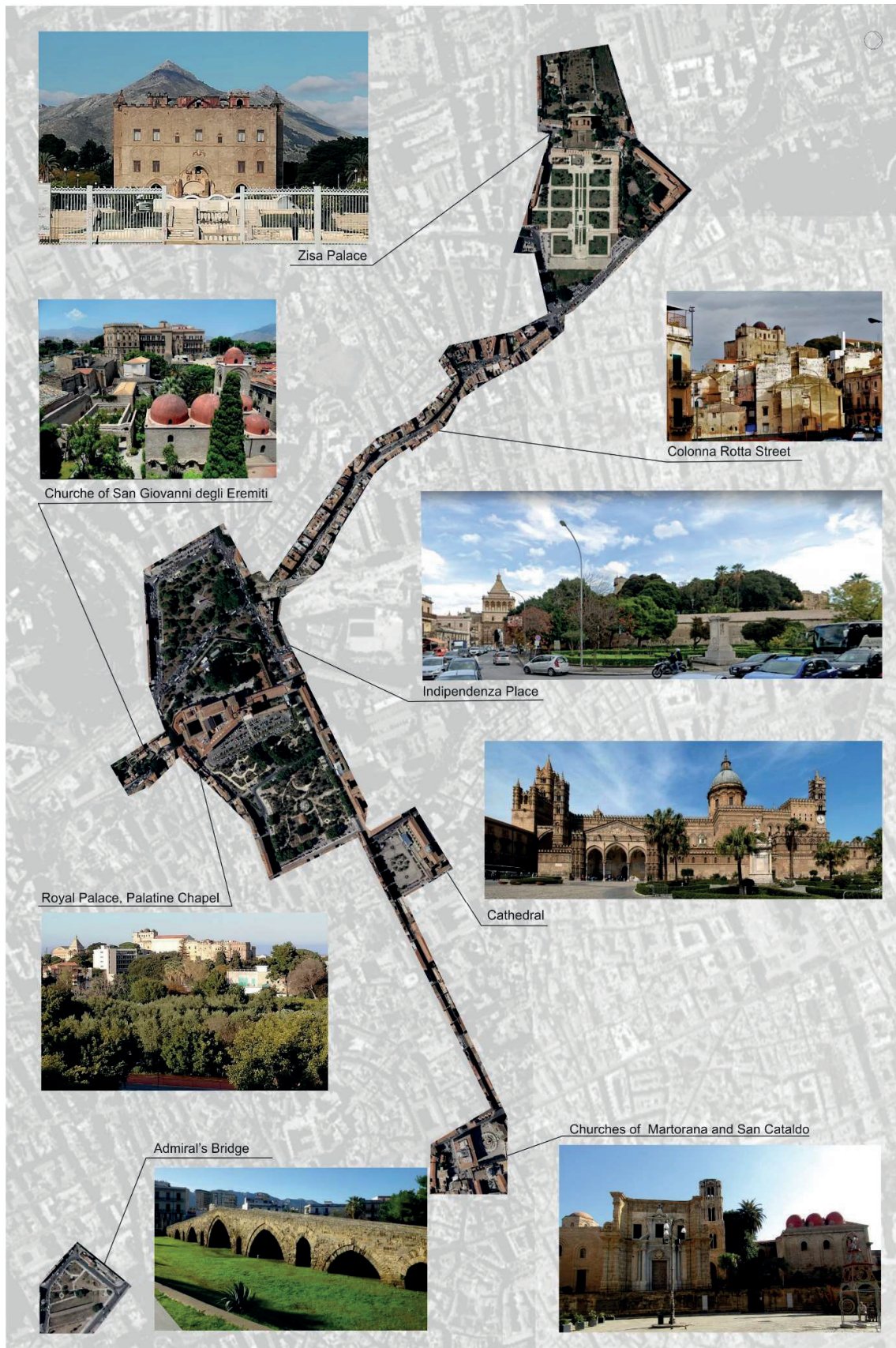


Fig. 1: Map of the Arab and Norman itinerary in Palermo, where it is clear that the *Admiral's* bridge and the *Zisa* palace are difficult to reach by foot (image elaborated by the Authors).

The route/itinerary is made today quite easy through the pedestrianization of most of the interconnection spaces: starting from the Royal Palace/*Palatina* Chapel, with the possibility of visiting the church of S. *Giovanni degli Eremiti*, crossing the Cathedral square and therefore being able to visit the Cathedral itself, along the *Cassaro* (current *Corso Vittorio Emanuele* main street) it is can easily to reach the Church of S. *Cataldo* and S. *Maria dell'Ammiraglio*, while the *Zisa* palace remains a little more isolated (also the *Admiral's* bridge), but however it is easy to reach through a maze of alleys and roads that are still suitable for vehicles, starting from *Indipendenza* square. From the same *Indipendenza* square then, going up the *Calatafimi* driveway, it can be possible to reach the city of Monreale, while only by car or train to reach the city of Cefalù [7].

In Palermo, almost all the monuments, except the *Zisa* palace and the *Admiral's* bridge, fall within the historic center; in addition to the *General Regulatory Urban Plan* (P.R.G.) this area is also affected by the *General Urban Traffic Plan* (PGTU), which also regulates the mobility of the historic city, with particular attention to the pedestrianization of many parts of it, limiting vehicular traffic and enhancing accessibility [8].



Fig. 2: The Church of S. *Giovanni degli Eremiti*. Comparison with the road network before the UNESCO recognition (photo by the authors).



Fig. 3: *Vittorio Emanuele* main street, going to the *Martorana* Church. Comparison with the road network before the UNESCO recognition (photo by the Authors).



Fig. 4: (on the left) View from above of the city with its narrow, winding and steeply sloping streets and alleys, often with heavy vehicular traffic and difficult to walk (photo by the Authors); (on the right) the *Admiral's bridge*, with its difficult access and heavy walk way (<https://mapio.net/s/56987175/>).

2. Around the city, walking along the main and the hidden paths of the itinerary

The characterization of the current places and architectures of the Palermo's UNESCO itinerary is the result, in the historical city and in the expanded one, as well as in the countryside, of evolutions and stratifications: if swamps have been drained inside the city and the sea subtracted from the port area, limestone plateaus or valleys have been also connected and terracing due to different positions of the limestone banks and riverbeds or military walkways of the ancient walls, and what was once the countryside over time has become a consolidated city, with its chaotic development and its preferential roads; above all, what before it was the territory that separated small and large centers, gradually has turn into a conurbation and has shortened, with the infrastructural network, far distances.

Nevertheless, today the "urban landscape" steeped in history is perceived in a positive way and it is sometimes strongly and energetically correlated to a monument and its appurtenances, as well as the absolute anonymity of some extra urban contexts, in which currently authoritative and prestigious monuments are inserted, is negatively perceived. We must underline that the mentioned nine sites, making up the stages of the itinerary, they include not only the monuments but also their pertinences, equally important and of value, and for these reasons, in order to protect the individual parts, some important and significant *buffer zones* of first and second level have been planned for the itinerary itself, having a complementary and subsidiary role.

The first level *buffer zones* have, as their objective, the protection of the visual, structural and functional identity of each single monumental site, and they are identified in the urban tissue or neighboring landscape areas, while the second level *buffer zones* are acknowledged on a wider system of urban, socio-cultural and landscape relations, taking into account the perimeter of protection existing at the territorial level; our study focuses particularly the first level *buffer zones*, representing those in which it will be necessary to verify and promote additional measures aimed at encouraging the *design for all* measures, as well as an adequate pedestrianization and urban decorum [7].

Until the 2015 candidacy, Palermo appeared to tourists fascinating and contradictory and the visit of the monuments included in the UNESCO itinerary not only for foreign visitors but also for many other citizens was really difficult, especially if done by foot, as the city was not very equipped with agile routes, with adequate services and modes of connection/transportation. From the point of view of accessibility, the accesses to the monuments were often located in a different height position from that of the square or road in front of it, furthermore as regards the safety of use, the streets and squares or open spaces were often paved with paving compact stones in the historic city, with narrow sidewalks and sometimes the coexistence between pedestrian tourist flows and an intense vehicular traffic, and visual communication is closed absent or almost absent, especially for fragile users.

The itinerary also represents its strong "immaterial" characterization and therefore not easily usable because it lacks physical connections, that are able to allow direct passage from one site to another: communication, accessibility and safety of use were and are the only conditions of a compatible and possible use and visit ability [9].



Fig. 5: (on the left) Monuments of the itinerary placed on terraces (churches of *Martorana* and *S. Cataldo*); (on the right) stretches of the urban road network with strong altimetry drops, connected by stairs (*Danisinni* depression), (photo by the Authors)

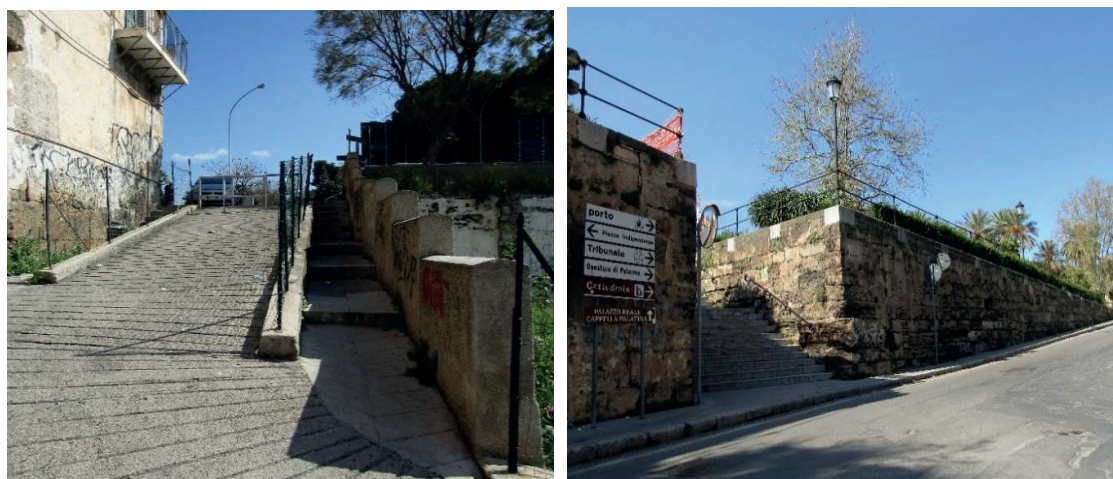


Fig. 6: (on the left) Ramps for overcoming the altimetry difference in between the *Indipendenza* square and *Colonna Rotta* street, preferential direction of the path towards the *Zisa* palace; (on the right) narrow pavement in correspondence of *Bastione* street, with steep stairs leading to *Vittoria* square and the Royal Palace (photo by the Authors).

3. Protection, management, sustainable strategies and design for all for the itinerary

It is widely known how the three innovative concepts of accessibility, visit-ability and adaptability, must be understood as levels of quality of the physical living space, with a strong evolution of the "special" architectural design because it was projected for fragile people, towards a more global concept of *Inclusive Design* or *Universal Design* or, finally, *Design for All*, sustainable design that plays an important role in the processes of social inclusion: all environments, public and private, should be designed taking in mind the different needs of people. The application of concepts related to the principles of *Universal Design* (U.D.), according to the *Research Center of the University of North Carolina*, considers seven fundamental "Principles": 1 - *equity* - fair use: usable by anyone; 2 - *flexibility* - flexible use: adapts to different skills; 3 - *simplicity* - simple and intuitive use: the use is easy to understand; 4 - *perceptibility* - transmitting actual sensory information, 5 - *error tolerance* - minimizing risks or unwanted actions; 6 - *containment of physical effort* - use with minimum fatigue; 7 - *sufficient measures and spaces* - make the space suitable for access and use.

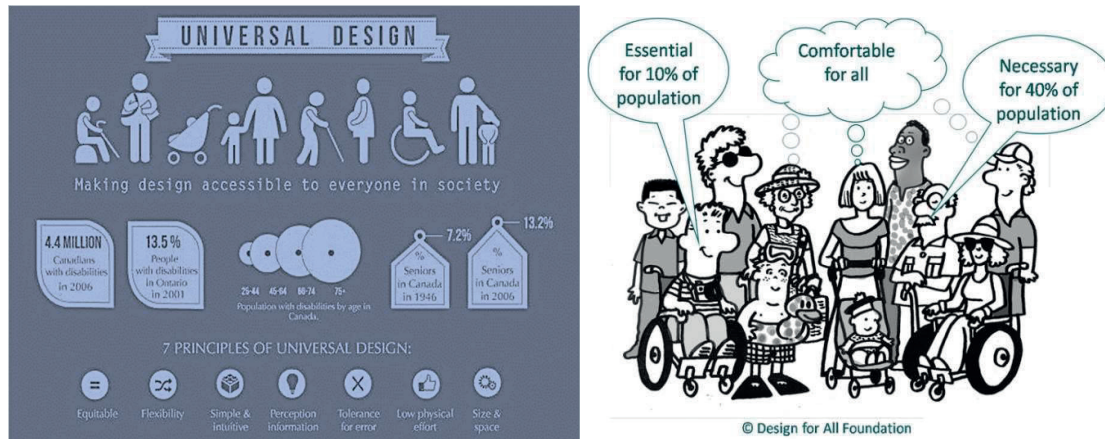


Fig. 7: The seven principles of Universal Design. (<http://www.ordinearchitetti.mi.it/download/file/20432>)

These principles are broader the basis of an accessible design to all, without barriers and have been developed to be applied in the widest possible number of sectors such as construction, transport, work environments, tourism activities and sports, also including communication technologies because *design for all* criteria are aimed at ensuring the participation of all in the world of information technology. The *Universal Design* approach also draws a new *raison d'être* from the debate that led to the *International Classification of Functioning, Disability and Health (ICF)*, which intends to order functioning, disability and health under the encouragement of *World Health Organization (WHO)* [10].

The ICF not only assesses disability and handicap, but is applicable to all people, even those in perfect health. The ICF language was created specifically to be internationally and inter-culturally used with very diversified objectives, both for a specific clinical use or even for epidemiological and health policy studies. The aims of *Universal Design* tend to "simplify everyone's life" by creating products, environments and communications that are universally usable at a low cost (if not free) with benefits for people of all ages and for the different forms of disability, based on and approaching the principles of equity and inclusion and producing benefits that offer everyone access opportunities while respecting individualities and personal peculiarities [11] [12].

From the point of view of the architectural design and communication strategies linked to the object of our study and therefore of the correspondence and adherence to the principles and objectives mentioned above of the Palermo's itinerary, this would mean - for example - the introduction of smooth floors into open spaces and confined spaces, entrances without steps and/or stairs, rough surfaces that require minimal effort for their practicability, stable, solid and non-slip surfaces, some easy systems for improving the outdoor comfort of resting and resting places that wind between one monument and another one; also, an adequate audio communications associated with information visible on the display, a greater visibility of information with associated audio redundancy, a greater visual contrast on panels and indications; the use of intuitive graphics (ideograms) with associated text descriptions, a clear visual indication methods to limit dependence on audio sources, the choice of language in speech synthesis tools; we would add also the rational use of access ramps to overcome altitude differences, bright routes in correspondence of dark or dimly lit environments, web pages that provide alternative text to describe images, instructions that provide information both by voice and video, labels affixed to the control buttons of equipment printed with larger fonts, some devices that allow visitors to choose to listen to or read the descriptions. While respecting the social and civil rights of all citizens, *Design for All* intends to design products, structures, infrastructures, programs and services in a synergic and coordinated manner, guaranteeing all people, as far as possible, to be able to move around the built environment, autonomously and to carry out all the activities that are possible (social, work, educational, recreational, tourist, ...) in a simple and intuitive way, in full safety and health, thus avoiding subsequent adaptations or providing for specialist interventions [13] [14] [15].

The design solutions must be appropriate, commensurate with the individual's performance capabilities, including everyone's needs, in order to avoid any form of discrimination. From all this considerations, it follows that the Palermo's UNESCO itinerary requires an integrated system for tourist accommodation, which can facilitate visits and the understanding/knowledge of the various monumental sites. In the areas adjacent to the sites, already at the time of the application, an analysis of the current state of the places had highlighted the need for some actions aimed at the implementation of protection, safety and usability, including the progressive pedestrianization and easy reaching of the mentioned *buffer zones* of first level, making the connecting paths of monumental emergencies safer and designed from the point of view of *design for all*, also equipping them with information signs, improving urban pavements and connecting sections with different slopes or difficult to reach for fragile users, ...



Fig. 8: (on the left) The entrance to *S. Giovanni degli Eremiti* Church still presents some critical issues due to the lack of connecting ramps; (on the right) the communication system between the various monuments is facilitated by a service of rented push scooters, strategically located along the tourist route, in this case at *Bologni* square (photos of the Authors).

In detail, the "Management Plan" of the itinerary has provided for particular attention to the degree of usability and accessibility of the sites, for this reason the strategic planning of tourism management has taken into account the conditions of accessibility of the site in terms of distance and time of travel from the main nodes of the infrastructural network of the city of Palermo, with the aim of solving the main shortcomings in terms of extended visit ability (not only for users with disabilities in terms of mobility), with appropriate dedicated assistance services and waiting spaces, at the access to the sites and along the route, removal of all architectural barriers

In particular, regarding the critical issues, the church of *San Giovanni degli Eremiti* presented, for example, really a difficult access to the monument at the time of the candidacy, due to visitor access from a secondary entrance and entrance to the church from a small metal staircase, and also the Church of *S. Maria dell'Ammiraglio* (*Martorana* church) presented an inadequate organization of the visit service; the *Zisa* palace has shown some accessibility problems inside the monument, the *Admiral's* bridge was accessible only on a panoramic and external level.

We also believe it is useful to underline that, also for the purpose of better planned actions in terms of social and cultural enhancement, the candidacy then also provided for the creation of eco-sustainable cycle-pedestrian connections with an high historical-landscape characterization, such as that between the cities of Palermo and Monreale, crossing the valley of the ancient *Kemonia* creek-Garofala valley, the path of the *Boccadifalco* drain, the *Luparello* plain and the former railway section of the *Palermo-Camporeale* line, not problematic for the purposes of height differences and therefore sweet and extremely favorable to cycle-pedestrian paths.

As regards the creation of tourist routes, sustainable and integrated with the traditional ones of the site, also a route inside the *Danisinni* depression, presents itself as a pedestrian connection axis between the Royal Palace-*Palatina* Chapel and the *Zisa* palace, inside a district - that of *Danisinni* - which still maintains the agricultural connotation (citrus groves, vegetable gardens), the permanence of the water, the remains of the ancient and homonymous stone quarry (*pirrera*), in a path that starting from the Royal Palace and crossing the Independence square reaches the district of *Danisinni* (across *Cappuccini* street, *Danisinni* street, *Danisinni* square) then can reach the *Zisa* street and the homonymous *Zisa* square, using some appropriate and necessary actions both of urban redevelopment of the areas, involvement of the local population and preparation of extended accessibility, both for residents and tourists.

The spaces that are located between the various monumental excellences can become an ideal, functional and physical connection system.

The climate of the city of Palermo enjoys a particular orographic condition that keeps it uniform for the different seasons of the year: winters are not very rainy and maintain a temperature of about 15 degrees centigrade, pleasant and easy for foreign tourists accustomed to climatic more rigid conditions. In summer, however, the presence of humidity and poor ventilation produce critical climatic conditions for those who, on foot or with small vehicles of transport, are forced to cross parts of the historic city with temperatures exceeding 40 degrees centigrade.

There are currently no welcoming conditions on these routes, especially for fragile users or those with mobility difficulties. This could be compensated through a punctual system of strategic places, currently in disuse, which appropriately designed for the improvement of environmental comfort, they can

constitute some connecting elements, resting and aggregation points both for the tourist and servicing all citizens.

To summarize the actions envisaged to favor services intended for fragile users, it's necessary the creation of access ramps for users with reduced mobility, brochures and information panels with *Braille* language in each monument, auditory paths, tourist guides and interpreters of the language of signs, tactile models of every single monument, tourist routes differentiated according to users and supported by multimedia products. To ensure greater accessibility, eco-sustainable shuttles are also provided for the transport of visitors from one monument to another, especially for thematic itineraries outside 1palermo and for people with disabilities.

All this aimed at increasing the number of disabled visitors to the sites, enhancing the accessibility level of the facilitated transport service, training specialized tourist guides and disabled assistance staff; by promoting and favoring the overall accessibility of the urban territory, the right to mobility can be guaranteed to the entire catchment area, not only tourists but any disadvantaged segment of the population (mothers and small children, the elderly, people with respiratory difficulties and heart problems, ...), the so-called "weak" or "at risk" users.

4. Conclusions. Actions already foreseen and objectives to be achieved

The issue of physical, sensorial and cultural accessibility of the architectural and landscape heritage is linked to that of the "democratization of culture". Accessibility is, in fact, now seen as a tool for achieving cultural and social equality. The *United Nations 2030 Agenda for Sustainable Development* also contains several references to accessibility divided into 17 Goals.

The Goal "*Making cities inclusive, safe, resilient and sustainable*" commits all World States to provide safe and sustainable access to transport systems, as well as universal access to green and public spaces, paying particular attention to the most vulnerable categories of society such as women, the elderly, children, people with disabilities.

Even in Italy, overcoming obstacles for maximum use by users has represented - from 2008 to today - one of the major fields of intervention of the Ministry of Cultural Heritage and Activities and Tourism (MIBAC) which has published the "*Guidelines for the overcoming of architectural barriers in places of cultural interest*".

The debate on how it is possible to reconcile the safeguard and protection of the sites guaranteeing, at the same time, a wider use of the heritage and its transmission to future generations is very contemporary, especially as regards the methods of breaking down the barriers for total accessibility of historical monuments and cultural sites, taking into account architectural constraints and respecting legal requirements [18]. This issue becomes even more sensitive when it refers to sites or monuments inscribed on the *UNESCO World Heritage List*, which should be universal and bring together cultures, and which are not yet fully accessible and must facilitate access to users without threatening the value of the heritage. buildings and the environment in which they are inserted.

Far beyond the strict attention so far aimed at adapting to the programmatic objectives of the UNESCO candidacy management plan, in recent years in the city of Palermo there has been a much more conscious and always more reasoned attention to the issues of accessibility and *Design for all*; the municipal administration website aimed at tourists has implemented information on monuments accessible to the disabled, the blind or visually impaired, ... [19].

In some monuments of the itinerary, pedestrianization has been carried out (*S. Giovanni degli Eremiti* church, *Martorana* church with *Bellini* square have in front of monuments some pedestrian and car free spaces), ... , something has been done for sustainable mobility with shuttle buses dedicated, bike-sharing systems and even electric scooters, moreover, as regards the parking places, strategic points have been identified on the path that brings together *S. Giovanni degli Eremiti* church, with Royal palace, the Cathedral and the *Zisa* garden system, in order to organize dedicated spaces equipped with sustainable safeguards for the improvement of environmental outdoor comfort, as well as for the improvement of accessibility. This virtuous example could be a reference model for the other points of the Arab and Norman route. Finally, we recall that since 2004 to 2008, on the occasion of the restoration of the mosaics and wooden structures of the *Palatina* Chapel thanks to the sponsorship of the patron Reinhold Würth, damaged by the earthquake that occurred in 2002, the 800-day long construction site was able to complete a special and meticulous restoration, which also allowed the mosaics to be studied in depth, even those in a higher and not easily legible position, by means of a convenient scaffolding useful not only for restoration building phases but also for tourist use, with the unique possibility for visitors to be able to admire from near both the mosaic decoration and the wooden and painted *muqarnas* of the wooden ceiling. Certainly an example of not perfect example of accessibility to all, but surely a proof of virtuous collaboration between restoration, sustainable tourism, enhancement of cultural heritage.

In this sense, it is typical of the character of the city, Palermo has done more and will demonstrate its figure and its character in future.

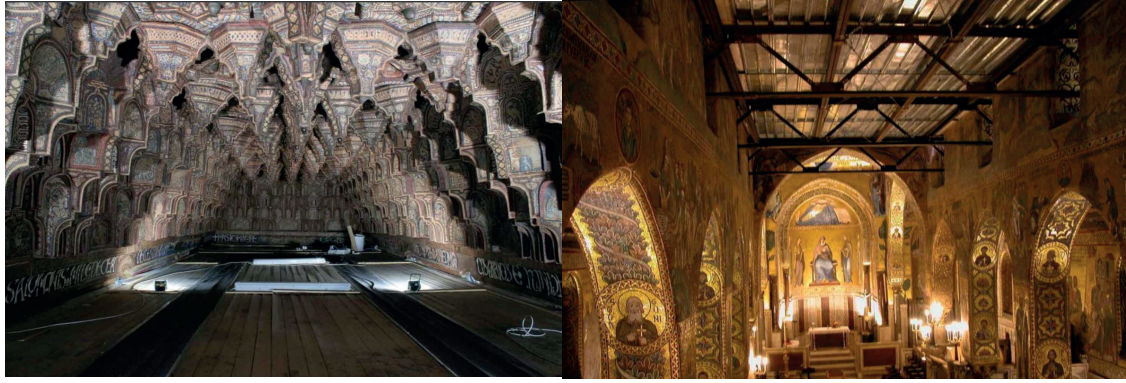


Fig. 9: The *Palatina* Chapel with the scaffolding useful to restoration but also reliable and open to touristic visitors (photo by the BB.CC.AA. Superintendence of Palermo).

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