STUDIES IN HEALTH TECHNOLOGY AND INFORMATICS 297

Transforming our World through Universal Design for Human Development

Proceedings of the Sixth International Conference on Universal Design (UD2022)

Editors: Ilaria Garofolo
Giulia Bencini
Alberto Arenghi

IOS Press

An environment, or any building product or service in it, should ideally be designed to meet the needs of all those who wish to use it. Universal Design is the design and composition of environments, products, and services so that they can be accessed, understood and used to the greatest extent possible by all people, regardless of their age, size, ability or disability. It creates products, services and environments that meet people's needs. In short, Universal Design is good design.

This book presents the proceedings of UD2022, the 6th International Conference on Universal Design, held from 7 - 9 September 2022 in Brescia, Italy. The conference is targeted at professionals and academics interested in the theme of universal design as related to the built environment and the wellbeing of users, but also covers mobility and urban environments, knowledge, and information transfer, bringing together research knowledge and best practice from all over the world. The book contains 72 papers from 13 countries, grouped into 8 sections and covering topics including the design of inclusive natural environments and urban spaces, communities, neighborhoods and cities; housing; healthcare; mobility and transport systems; and universally-designed learning environments, work places, cultural and recreational spaces. One section is devoted to universal design and cultural heritage, which had a particular focus at this edition of the conference.

The book reflects the professional and disciplinary diversity represented in the UD movement, and will be of interest to all those whose work involves inclusive design.

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The image on the front cover represents the Winged Victory of Brescia, a bronze statue from the first century CE. The statue is preserved in the Roman Archaeological Park in Brescia.

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Communities, Sport, Inclusion. Strategies for Parish Complexes Social Reactivation Through Sport Practice Promotion

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Abstract. The following contribution presents some findings deriving from the research project "Sport is Society" by Politecnico di Milano. The research reflects on the built heritage and its ability to be accessible and usable for different users with different needs in its structures and offer of services, focusing on sports activities and spaces. The study refers to collective ecclesiastical structures in the contemporary city. The research in this area demonstrates the possible degrees of innovation regarding the increase in the inclusiveness of private facilities with a public vocation, where sport represents a driver of social inclusion for the community. The research proposes advice to guarantee inclusive sports facilities for the community, highlighting the strict relationship between the inclusive city and the ecclesiastical heritage, as an emerging issue to be investigated and solved. Starting from its relevance and the potential of the structures to become a truly "accessible patrimony", the tool suggests strategies for policymakers and ecclesiastical administrations to make them become "open services" - usable and accessible by all - for and inside the urban community.

Keywords. Inclusive Design; Ecclesiastic Heritage; Social Infrastructure; Healthy Communities; Sport Spaces

1. Introduction

The study refers to collective ecclesiastical structures in the contemporary city, with reference to the facilities for grassroots sports linked to the parishes, commonly called "oratorio" [1].

Within the contemporary city's urban and social regeneration processes, the facilities and public spaces combining physical activity, health promotion, and social inclusion acquire a renewed relevance [2].

The research is part of a broader research project funded by Polisocial Award 2019 awarded by Politecnico di Milano, titled "SPèS - Sport è Società" [Sport is Society]. The research activities were addressed by a multidisciplinary working group composed of

[1] Francesca Daprà, Department of Architecture, Built Environment and Construction Engineering DABC, Politecnico di Milano, Via Ponzio, 31, Milano; francesca.dapra@polimi.it

experts in different fields as building hygiene, architectural design, urban planning and management engineering[2].

The research reflects on the built heritage and its ability to be accessible and usable for different users with different needs [3, 4] in its structures and offer services, focusing on sports activities and spaces.

Universal Design has been defined as the "design of environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design*"* [5]. While the minimum standards on accessibility deal with architectural barriers, this strategy aims to satisfy the needs of the widest range of users regardless their abilities or disabilities [6]. For this reason, an inclusive environment represents a place where everyone can access and take part in the community's activities and services with a common and equal experience.

In this regard, parishes facilities constitute a network of spaces already spread in the city, but often scarcely known, or strategically valued [7]. The enhancement and renovation of such structures and the strengthening of their accessibility and openness to all would contribute to promoting social inclusion and health, working with the proximity network of social and public spaces.

The objective of the paper is to provide a method and strategies to support the promotion of inclusive environments in parish facilities, where sports and leisure activities play a fundamental role in the social empowerment of the Community [8].

2. Method

2.1. Architectural scale

The research method consists of the development of an analytic tool, based on qualitative-quantitative parameters, which involves spatial features of the ecclesiastical facility and its surrounding. The tool analyses the physical space of the oratory and the activities carried out, focusing on the sports sector, to define physical and organizational regeneration strategies.

The tool is structured in a framework of three Macro-areas with related criteria: Urban and architectural aspects (I); Technological-functional-spatial aspects (II); organizational-management aspects (III).

The Macro-area *Urban and Architectural aspects* (I) allows the evaluation of visibility and recognizability of the parish and the accesses, the approach to the facility, the accessibility through public transport and active transportation choices for healthy

[2] The research project "SPèS – Sport is Society. Social regeneration, health promotion and urban inclusion, through the reactivation of the sports infrastructure system of the Ambrosian parish complexes" was funded by PoliSocial Award 2019, Politecnico di Milano and developed by researchers from three Departments of Politecnico di Milano (Department of Architecture, Built Environment and Construction Engineering DABC, Department of Architecture and Urban Studies DAStU and Department of Management, Economics and Industrial Engineering DIG). The project has been supported by ICS (Istituto per il Credito Sportivo), and developed in collaboration with CSI (Centro Sportivo Italiano), FOM (Fondazione Oratori Milanesi), Comune di Milano, the Regional Committee of the Italian National Olympic Committee (CONI Lombardia) and the General Welfare Directorate of Regione Lombardia together with Local Health Agency in Milan (ATS Milano Città Metropolitana).

lifestyles promotion and the presence of architectural barriers, separation of paths, and wayfinding [9, 10].

The Macro-area *Technological - Functional - Spatial aspects* (II) investigates the parish centre's functional, spatial, and dimensional organization, identifying unused and/or available spaces and their potential for intervention.

Finally, the Macro-area *Organizational and Management aspects* (III) focuses on the evaluation of the different users' that use the parish facility, analyzing their age, frequency of the sports activities, typology of sports, and voluntary staff involved.

Among the different criteria of the tool, issues such as accessibility and usability of the environment and the users' inclusion are considered, allowing an objective evaluation [11]. In particular, the tool considers the following criteria in the first Macro-area (table 1).

Table 1 Framework of the tool's Macro-area I - Urban and Architectural aspects.

Macro-Areas	Criteria	Indicators
1. Urban and Architectural aspects	***1.1 Recognizability and identity***	Level of recognizability of the parish facility in the neighborhood
		Level of community services offered by the parish facility
		Presence of collaborations with parishes facilities in the surrounding area
		Collaborations with the municipality and/or associations and/or local authorities
		Level of the historical and architectural value of the spaces of the parish facility
	1.2 Context	Level of proximity of green areas to the parish facility
		Presence of playing areas near the parish facility
		Quality level of aggregation spaces within the parish facility
		Presence of outdoor gathering spaces around the parish facility
		Presence of public and private sports facilities in the parish facility
	1.3 Reachability	Level of accessibility to the parish or oratory via bike paths
		Presence of bicycle stops inside and outside the parish
		Presence of dedicated parking spaces near the parish
		Level of accessibility to the parish by public transport
	1.4 Usability and accessibility	Level of accessibility to the parish via bike paths
		Presence of bicycle stops inside and outside the parish facility
		Presence of dedicated parking spaces near the parish facility

Recognizability and identity (1.1) evaluates the recognizability of the parish complex both to support orientation and the community's identity of the neighbourhood.

Context (1.2) analyzes the services for the citizens to understand the relationships between the neighbourhood and the parish facility.

Reachability (1.3) maps the public and private mobility services to allow people to reach the parish facility through active transportation choices for healthy lifestyles promotion.

Usability and accessibility (1.4) analyzes the characteristics of accessibility of the facility both physical usability and wayfinding [Fig.1].

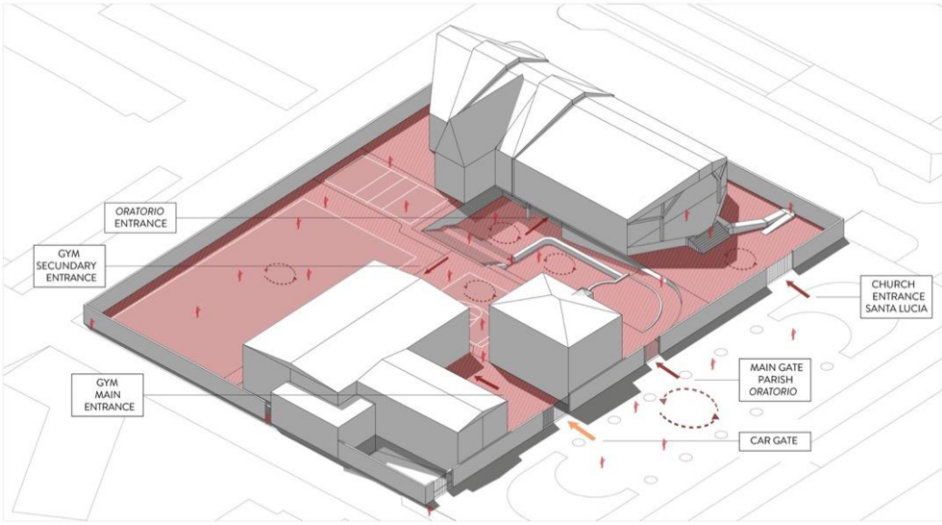

Figure 1. Volumetric representation of the accessibility and fluxes of a parish facility in Milan (Santa Lucia, Quarto Oggiaro). @Project SPèS, 2022.

Overall, the tool developed allows analyzing the current scenario of existing parish facilities also in terms of accessibility and usability to support their renovation in terms of inclusion of different users with various needs.

2.2. Urban scale

Together with the structural analysis, an urban analysis [12] in Milan (Italy) through GIS-based software was addressed to reflect on the level of urban accessibility and the characteristics of the *oratorio* system [Fig.2].

The urban analysis took in consideration: the population health status, demographic and social issues, sports infrastructures availability, and accessibility of the structures. In particular, the accessibility of the parish's facilities at the macro scale was analyzed considering the following aspects about the urban soft mobility [13]:

- accessibility by foot: the mapping of the isochrones of 5, 10 and 15 minutes walking distance from the parish facilities;
- accessibility by Local Surface public transport: the mapping of stops and lines of streetcars, buses and trolleybuses and existing urban green spaces (of all types);
- accessibility by rail public transport: subway lines and stops; railway lines and stops;
- accessibility by soft mobility: existing and planned bicycle routes.

The analysis helped to select 5 Case Studies for the application of the tool in different social and urban contexts [14], to suggest strategies and actions for the improvement of the parish facilities in terms of accessibility and inclusion.

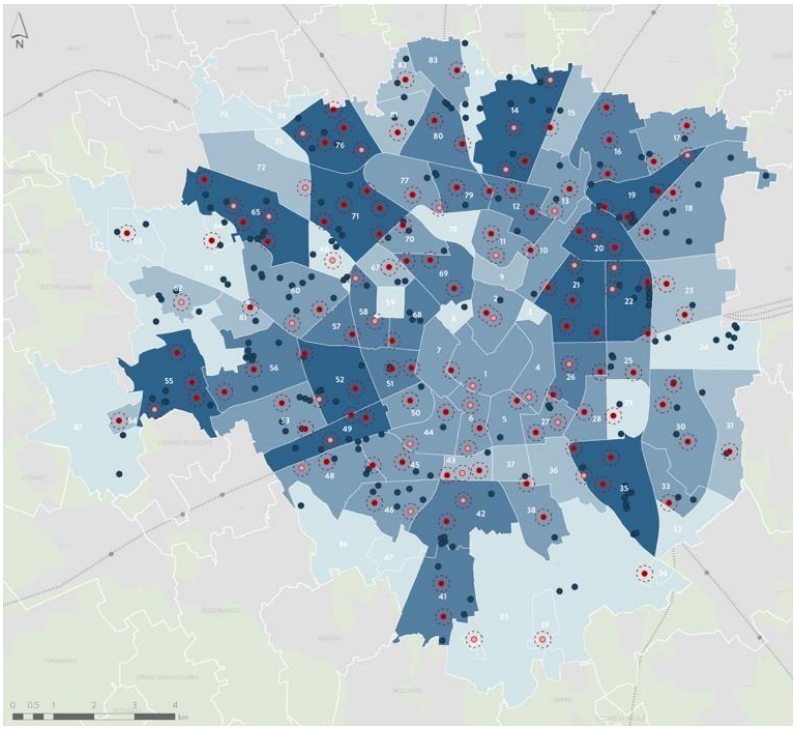

Figure 2. GIS-based Map of the city of Milan showing youth density, parish structures (red dots) and public sport infrastructures (blue dots). @Project SPèS, 2022.

3. Results

The application of the analytic tool highlights the level of usability and accessibility of the structures and the users of the facilities, as well as the possible degrees of innovation and inclusion to strengthen the public and collective vocation of these places [15].

The case studies were selected in different areas of the city, for a heterogeneous reading of urban situations and circumstances, with elements of interest or criticality on the sporting front: for instance, some of the cases had an important sporting activity, with a lack of spaces, and others, on the other hand, had several under-utilized spaces. Also from the social and urban planning point of view, the case studies involved intermediate areas, accessible and well connected, while some suburban areas with a lack of services and transport.

Although at the urban level they are already highly accessible and connected to mobility networks, at the architectonical one most of them present critical aspects related to architectural barriers, routes separation, and wayfinding. Moreover, the fact that they are part of cultural heritage often involves maintenance problems and needs for renovation difficult to solve.

3.1. SWOT Analysis

The application of the tool to the 5 pilot cases – together with some surveys and interviews with the communities involved – highlights some transversal elements that emerged from the experimentation. Overall synthesis of the results has been represented through the SWOT analysis, which makes it possible to examine the strengths, weaknesses, opportunities and threats of a project in order to support decision-making and the achievement of an objective.

The **strengths** that emerged in terms of accessibility and inclusion are:

- parish facilities are often highly connected and accessible by the public transport network;
- most facilities include spaces that can be used for different sports activities (e.g., gym, soccer fields, basketball, volleyball, etc.), both inside and outside the oratories, encouraging the promotion of physical activity for different users;
- parishes offer a variety of educational-aggregational services for youth people (sports services), families and in some cases for the elderly to promote social inclusion;
- the refreshment areas, as well as the sports areas, can be used as places to promote social aggregation for the whole community;
- often, the parishes have important outdoor areas, and are not always exploited to their full potential.

In addition, the **weaknesses** analyzed in terms of accessibility and inclusion are:

- several sport areas in some parishes are poorly visible, accessible or valued, while they could represent a great reference for the community and the promotion of physical activity;
- several parishes have architectural barriers in the main entrances, where becomes necessary the use a secondary entrance for persons that use wheelchairs or parents with strollers;
- the wayfinding system of structures is often poor, especially in indoor environments and in the connection between outdoor and indoor environments, so only people who know the spaces can orient themselves;
- the refreshments areas and support spaces for sports activities are often not adequate to the needs of users since they are not accessible or small compared to real needs;
- the activities for the elderly in many cases should be improved and increased for their needs.

The potential **opportunities** that emerged to promote social inclusion are:

- several parishes desire to offer sports for people with and without disabilities taking advantage of the collaborations already in place with associations, however, this requires adequate facilities;
- parishes could ensure a larger and more varied offering of sport and physical activities for different age groups;
- parish facilities can represent socially attractive centres for all citizens and become health-promoting environments for the community thanks to inclusive sport activities (e.g. different ages and cultures, individuals and associations, etc.).

Finally, the **threats** to care about are to be able to promote social inclusion are:

- the space's management becomes a problem especially during the daily hours, because of the lack of volunteers and/or staff, this can also generate problems in terms of security of spaces;
- unused spaces that are not used daily generate additional maintenance costs, as well as not being a source of revenue;
- poor spaces enhancement can lead to a lower presence of the community users in the parish.

3.2. Strategies

In light of the application of the tool and the general SWOT analysis, it is possible to propose different strategies for the oratorio-system, to give some hints that could be applied to all the facilities.

Accessibility, usability and well-being promotion:

- due to the historical nature of the structures, different entrances need to be used: at least one of them should be fully accessible with ramps and technological solutions suitable for the inclusiveness of the users;
- to facilitate the separation of paths and to increase the accessibility of the oratory and sports spaces through the use of existing secondary accesses;
- to implement wayfinding between indoor and outdoor spaces (wall and/or floor) with maps, graphic indications and tactile guidelines;
- to renovate some existing underused sports facilities such as theatre halls or gyms, transforming them into multifunctional spaces including support spaces (locker rooms, storage, etc.) that can operate at different times of the day [16];
- to integrate covers and/or technological elements to create shaded outdoor areas during the summer season to promote more gathering spaces for users;
- to ensure homogeneous outdoor lighting to promote safety and security of all the areas at different times of the day;
- to maintain the outdoor areas and to integrate them with play areas for children and seating for users to promote community social aggregation.

Community social inclusion improvement:

- to strengthen the synergy with associations in the neighbourhood to implement sports activities;
- to implement the presence of volunteers and/or staff to support the spaces' management;
- to involve the elderly population in the practice of sports with ad hoc activities and/or management of spaces through volunteering;
- to involve the young population in interventions of "participatory" activities of requalification and activation for the management of sports activities;
- to search for synergies with sports organizations in the area for the funding and management of renovated sport spaces.

4. Conclusions

The research demonstrated the possible degrees of innovation regarding the increase in the inclusiveness of private facilities with a public vocation, where sport represents a driver of social inclusion for the community.

Starting from its actual relevance, and the potential of the facilities to become a truly "accessible patrimony" for all, the tool suggests hints and strategies for policymakers and ecclesiastical administrations make them become "open services" - usable and accessible by all - for and inside the urban community. This way, the relevance of the strengthening of the inclusive city or the city of proximity matches with the renovation of existing ecclesiastical heritage, as an emerging issue to be investigated and solved. The optimization of the *oratorio* facilities by applying multi-criteria and scientific tools leads to the increase of knowledge and consciousness about the built heritage and its role in building a city for all.

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