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Improving Sustainability in Architectural Research: Biopsychosocial Requirements in the Design of Urban Spaces

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Abstract: There is an ever increasing interest in identifying the links between architecture and public health and in how urban design can positively influence the latter. The psychology of sustainability and sustainable development represents an innovative research area as a recent contribution to sustainability science and its trans-disciplinary configuration. The research topic deals with the importance and the centrality of the user-centered approach in the observation of the relationships among mankind, technological systems, and built environments, for projects that guarantee the conditions of physical, mental, and social well-being. Starting from the plurality of different disciplinary sectors, from anthropometry and sociology to psychology, "human experience" and user's expectations are explored, understood, and systematized. The analysis of the relationship between health and urban design has allowed researchers to identify design strategies to improve the level of urban livability. The city of Pisa is the case study; mobility within the city is redefined through various levels of the use of space so that paths and areas of inclusion and socialization are re-valued, while new scenarios for some urban spaces open up. In this perspective, the design strategies synthetically follow two main directions: the re-appropriation of these places by the citizens and, at the same time, the promotion of their well-being from both a physical and psychological point of view.

Keywords: urban design; healthy city; psychology of sustainability and sustainable development; sustainability technologies; urban environment; urban health

1. Introduction

The interaction between city, architecture, and inhabitants is a crucial issue of contemporary society [1]. The role of designers, in the field of architecture and urban planning, becomes significant in the realization of democratic and sustainable urban contexts for the direct connections established with the policy of interventions, government actions, and social cohesion. Architecture is a complex phenomenon that involves the art of building, which is changeable and follows three directions: time, space, and social context. In this context the interdisciplinary dialogue connecting the knowledge that conditions the development of the city and the art of manufacturing becomes relevant. Sustainability is an issue with a global impact, and the United Nations have proposed 17 Sustainable Development Goals (SDGs) [2] as the main aims of the Agenda 2020–2030. In September 2015, at an historic UN Summit, world leaders adopted the 17 SDGs of the 2030 Agenda for Sustainable Development. These SDGs officially came into force in 2016 with the Paris Agreement on climate that addressed the need to limit the rise of global temperatures.

In this respect, although environmental design has taken on different nuances and connotations over the course of time, it has always had as its fundamental objective the purpose of guaranteeing the

conditions of well-being for humans by establishing itself as a tool of mediation between humans and the environment for the determination of optimal conditions for life.

Well-being and good health represent a key sustainable development goal to reach good quality of life for all people [3]. The biopsychosocial model [4] in line with the definitions of health by the World Health Organization (1947) pointed out the conceptual shift from health as the absence of illness to that as optimal functioning. Moreover, well-being is considered as a state of complete physical, mental, spiritual, and social well-being rather than merely the absence of disease or infirmity [5,6]. Following in detail the review of the literature [7–10], it is possible to distinguish between two forms of well-being: hedonic well-being [11] and eudaimonic well-being [12,13]. Hedonic well-being comprises an affective evaluation in terms of positive and negative affects [11] and a cognitive evaluation in terms of life satisfaction [14]. Eudaimonic well-being concerns optimal functioning and self-realization [12], life meaning and purposefulness [13], and positive functioning [15].

2. From the Research Area of Psychology of Sustainability and Sustainable Development to Urban Design

The psychology of sustainability and sustainable development [3,9,10] is a new research area enriching the perspective with critical contribution to promote health and well-being, considering a positive approach and paying attention to oxygenating processes. Considering also this perspective in the design of urban spaces, it is a useful and challenging effort to recompose the complexity of environments, paying more attention to the psychological environment. For this reason it is interesting to study in depth the psychology of sustainability and sustainable development [3,9,10] to consider implications for architectural research as well.

Design activity, both in its most experiential, immersive, dynamic aspects [16–18] and in the performative [15] and formal ones [19–21], and finally in operative-participative terms [22–24], has the objective to explore, understand, and systematize "human experience" along with the user's expectations, and to adopt design solutions based on cognitive inputs referring to a plurality of disciplinary sectors (anthropometry, ergonomics, proxemics, physiology, sociology, psychology, etc.). The acquisition that the human being has through metabolic systems and sensory perception, interacting with their habitat in the world, implies that design is not limited only to the physical-formal aspects, but also to an environmental design [25].

A habitat can be described in spatial and dimensional terms—height, width, and depth—and in terms of stimulus and response. The basis of the discipline is the osmosis between human sciences and design sciences, able to mutually integrate the knowledge of people's physiological, psychological, and cultural needs with the polytechnic ones, to be converted into design capabilities aimed at safeguarding safety, health, and psycho-physical integrity.

At first glance, urban planning and public health may appear to be two very different fields, but these two areas share a common history. There are cues for their connection that lead to finding a common way to make urban development assume an essential role in health promotion strategies, in the context of a global preventive project aimed at acquiring lifestyles more suited to the preservation of physical and mental well-being. Since the advent of last century's industrialization, which started a rapid demographic increase, including the increase in urbanization and significant human accumulation in urban areas, the interest of the scientific community has grown with regard to the development of new precautionary measures to protect public health from the adverse effects of this urbanization [26,27].

It is therefore necessary to reconstruct a connection between health and urban planning, and this aspect is evidenced by several researches under way, which demonstrate the clear link between spatial planning and human health [28]. It is in this context that urban design can affect, more or less positively, physical activity.

Sedentary life patterns undoubtedly favor the increase of the overweight population. This phenomenon affects not only the richest countries, but will also affect low-income countries. In fact, in

high or rising-income countries obesity tends to strike gradually the lower middle classes, whereas in low-income countries obesity is particularly common in the affluent classes [29].

The origin of design attentive to the well-being of the user was born in the industrial field through the development of principles that promote the satisfaction and the well-being of the worker and enhance the productivity of the company. It is not by chance that in the USA, in the years 1920–1930, for the first time the words "human engineering" and "human factors" were used to generally designate the themes of human relationships in industrial practice [30].

Soon afterwards the human factors engineering discipline also developed in Europe, where particular attention was paid to industrial issues. It was at first concerned with the consideration of the single workplace or the mechanical tool to be used, viewed in a way that was detached from its context of use. Subsequently, the need for a complex reading of all human activities emerged and profoundly widened the field of interest of the project, putting as a priority the observation of the multiple interactions in the relationship between humans and their environment of life and work.

However, the human–working environment and human–living environment relationships were only considered from a dimensional point of view, through the study of the spatial movements that the body describes in the performance of work (anthropometry) and the study of the physical energy spent on occupying space and overcoming gravity (ergonomics) to "abolish fatigue" or minimize the environmental pressures that are tangential or accidentally linked with a given activity, in order to allow humans to be efficient from the point of view of productivity. Humans create objects to satisfy their needs by dimensioning those objects in relation to themselves. This is why humans' limbs were once the basis of each unit of measurement. Even today the concept of size is for us more graspable if we know how to bring it back, for example, to the height of many men or the width of many arms [31]. Humans become, therefore, the unit of measure of the project of spaces for human activities. Without the human scale as a reference, the graphic representations of environments and buildings give a wrong idea of the dimensions of these constructions, and we are surprised to see how far from the truth, and generally smaller, they appear. This misunderstanding derives from coordinating the dimensions of a space or an object with respect to any random relationship rather than from the one and right basic measure: humans.

An important evolution in the relationship between humans and life space came with the emergence of the bioclimatic approach [32]. The need to control the environmental dimension, through a more effective regulation of the climate and energy issues, led to the need to consider for the first time a different point of view in the evaluation of the quality of architecture, based on the analysis of the mechanisms of the relationships between the human body and elements of the climate environment that influence the comfort of built spaces. In this sense, a central measure in architecture becomes the human organism, i.e., the complex of physical and psychological reactions consequent to the environmental stimuli of luminous, sonorous, climatic, spatial, and biological nature that invest the subjects in the fruition of built spaces. In this context, reference is made to the concept of interface in relation to architecture, seen as a system for controlling environmental conditions, a meso-environment, a place for interaction between the individual and the natural environment [1]. Thus, the object of environmental planning becomes not only physical space but also mental space, an area in which it is possible to share one's emotional experience without losing its individuality, without being dominated by what occurs in the outside world. In industrial design, the user-centered design (UCD) approach was created in 1970 in the field of cognitive psychology. It is configured as a method of project evaluation based on the users' involvement and aimed at responding to the needs and expectations of the people who use the product, on the basis of the collection and systemic evaluation of the skills, attitudes, and needs (needs and expectations) of the people involved in the survey, in order to design products that can be used with maximum efficiency, maximum satisfaction, and minimum physical and mental stress.

The contribution of this research consists in focusing the attention of the environmental project on the relationships, i.e., the direct or indirect links, between user system, system used, and context of use

rather than on defining the characteristics of the object-space itself, the service, or the environmental situation to be achieved or adapted.

3. Materials and Methods

It is then the interaction between humans, objects, and environment that make up the object of the design, where the object can be a technological system, a building component, a domestic instrument, or a service, and the environment is a place or a situation where activities are carried out. In their actions, individuals establish reciprocal relationships with the systems, developed to carry out the activities of daily life, with the other subjects, in relation to which the activities are structured and organized, and with the environment, which is the scenario where humans and the systems are placed and which they adequately adjust within the context of these activities. Seen in terms of acquisition of information, human–object–environment relationships can be interpreted globally as a progressive functional interaction between the different systems, a sort of communication exchanged through privileged channels, in the performance of life and work activities.

The research highlighted different levels of interaction:

- physical, when the relationship is mainly of a confirmatory and dimensional nature, and is established with systems that need to be manipulated and used through body contact;
- cognitive-sensorial, since the quality of this kind of interaction depends on the proportional compatibility between the systems and integrates with the sensorial one, which is understood as the appropriateness and coherence of the stimuli emitted by the physical systems with the physiological structures of the individuals.

The design process is aimed at intervening on the information network that is established between the systems to control the level of complexity and affect the quality of the communication exchanged. The personality of a human being is not a reality in itself, but lives only in relation with the world around them and with the things and relationships that constitute their life [33], so an unsuitable life environment not only hinders or prevents the carrying out of activities, but conditions the formation of the authentic self of the human being and the development of their personality.

In this anthropocentric vision of environmental planning, the user of the objects of the systems in a given environment lives and relates to a designed environment that assumes the role of "prosthetic" place, which therefore has behavioral consequences on the user, conditioning the modalities of relationship with space and people. Each element of the built environment represents a sort of container that is not organized simply to allow the activities and functions to which it is linked, but actually generates a specific form of behavior in its users (Table 1).

The importance and the centrality of the human-centered approach is evident in the observation of the relationships established between humans, technological systems, and built environments, to design according to both the anatomical and metric needs (anthropometric vision of optimized design) and those connected to the sphere of perception, cognitive processes, and the social sphere. Even if this prosthetic vision of the designed environment can be declined according to the various design scales (from objects to living spaces and to the design of open spaces), it takes on particular interest when compared to the theme of the project of open spaces in our cities and their ability to favor the vital functions of those who use it. The open spaces of the city can thus overcome the current conception of technically equipped spaces for movement, and be reinterpreted as places of movement, where to rebuild and cultivate virtuous and regenerative relationships between the moving inhabitants and the city resources. It is therefore a matter of placing the user at the center in its variability and of considering their relationship with the built environment, not only as metric-dimensional but embracing the cognitive and social dimensions too.

Table 1. The human–environment interaction; human reactions are related to the physical elements of the environment.

Human Relationship Factors		**Physical Elements Factors of the Environment**
Cultural Moral Social Historical	➡ **HUMAN** ⬅	Physiological (Bright, Sound) Geologic (Bright, Sound) Climatic (Spatial, Vital) Geographical (Spatial, Vital)
Influential Elements		**Human Reactions**
Environmental (Space + Biological) Physical (Bright + Sound)	➡ HUMAN ➡	Physical Psychological

The life environment does not end in the physical dimension, but is strongly influenced by the social structure within which a person leads their own existence (family, community, and society). In this line of thought, environmental planning is configured as a fundamental tool in defining the contents of the environmental project in a renewed conception of the relationship between citizen, user, and urban environment.

A vision is needed that can reconstruct a profitable reconnection between health, urban planning and environmental planning, in line with current evidence and research on the cultural and organizational transition from public health to urban health.

The need to take care of humans, of the environment, and of resources involves a new responsibility for environmental design, which is not limited to the creation of smart objects and smart cities but is able to affect the behavior of people so that they are smart and active themselves. The aim is to build awareness—of the individual, the community, and the context—leading to a change in lifestyle.

In the light of this broader connotation of human well-being, the aim of environmental planning is today mainly that of health, conceived as a state of physical, mental, and social well-being. This attention can be found in the relationship between health and the friendly, active, and adaptive design of the city's open spaces that become the means by which to evaluate the health and safety conditions that the city itself is able to offer to its inhabitants—conditions that can be altered to improve the level of livability.

Ultimately, environmental quality is directly related to the ability of the city to be friendly, active, and adaptive, conditions, thanks to a UCD approach, that determine its attractiveness for users in the carrying out of the various activities planned. Urban spaces must therefore be characterized not only by aesthetic-formal dictates, but also by other factors that fundamentally influence accessibility, livability, use, and ultimately the quality of the activities carried out by users. A new way of thinking and planning a sustainable space that is attentive to human needs, aspirations and abilities is necessary and able to produce holistic bio-psycho-physical wellness solutions by adopting tools for participation in social well-being; because the public space is a key element of individual and social well-being, a place of community collective life, and an expression of their identity and diversity of their common cultural and natural heritage [34].

Public urban space can be defined as the space created by the exteriors of the buildings, an important dimension obtained from the sum of different exteriors (streets, squares, parks, etc.) and their possible combinations. The operational difficulty of investigating such a complex and generic field has led to the adoption of a method of decomposing the urban environment into elementary spaces that involve simplifications, approximations, and conventional assumptions as a starting point for the description of an urban environment. The knowledge of the level of complexity of the urban

system therefore entails the choice of simplifying it and identifying as a strategic level of intervention urban portions of the consolidated city capable of generating healthy behaviors [35].

The Human's Ergonomics Factors [36] focus on the systems in which human beings interact with their environment. In fact, it is not possible to think of an activity that does not involve a certain type of interaction between human beings and the surroundings. These relationships are of various kinds and nature; there are relationships that are established between humans and the components of the built environment, between humans and urban space, and between humans and other humans [37]. The human–human system is given by the set of interpersonal relationships and communication activities that establish themselves among the members of a community in order to favor and/or improve the usability and livability of an urban space: the opportunities and the need to meet allows one to share experiences, to talk, to exchange opinions, to perform social functions, and to lead to more active and healthy lifestyles.

The viewing angle determines the user-visible space based on the movement speed, so the elementary reference space can therefore be represented as an urban room, later named room-walk, composed of elementary components: the pedestrian path (slow mobility is the basic element for physically, socially, and actively enjoying the city) and multi-purpose space and equipment (Figure 1). A clear and adequate path allows you to walk fast, but the creation of an environment that invites people to wander or take a break, offering the possibility of stops, a rest, or refreshment areas, increases the level of diversity and interest of the room-walk.

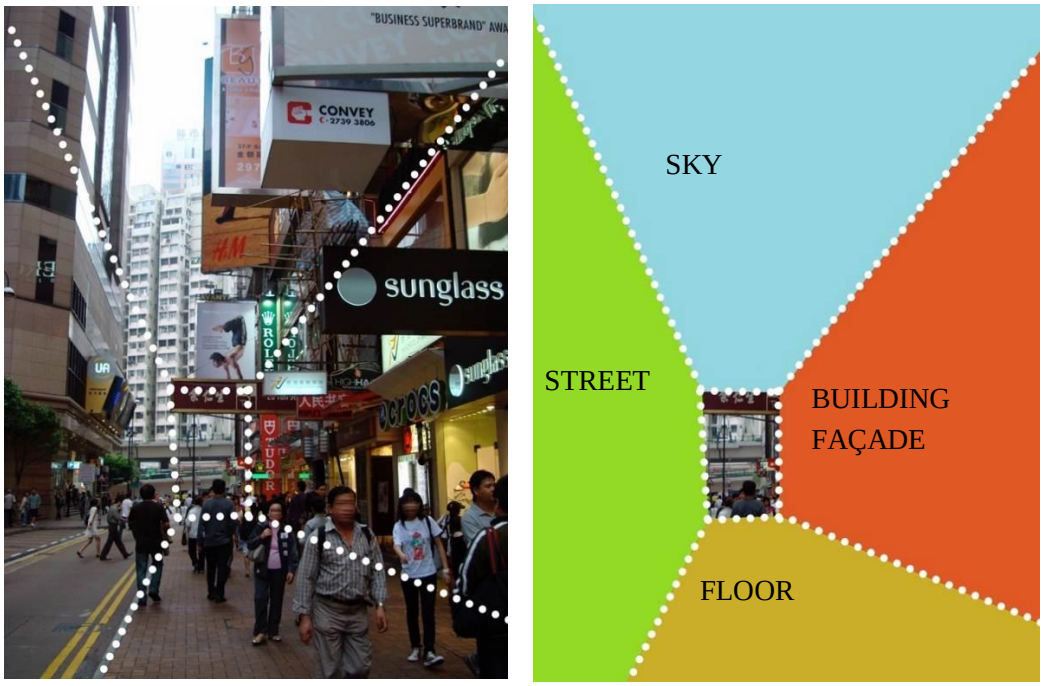

Figure 1. Active design is a discipline that promotes sporting activity through a proactive reinterpretation of the context, focusing on the design of efficient and stimulating spaces for users. The room-walk constitutes a dynamic space where one can move in a period of time in which sensory perception establishes relationships between urban user and space, between user and urban equipment, and between user and user.

The approach to the user-centered project of urban space therefore entails placing the user at the center of the room-walk and encourages considerations from the point of view of their perspective. Considering therefore the user's perspective, this urban room coincides with what we have called "personal space," a space of tension between humans and the environment, a design interface in which complex relationships are established between the user and the environment [35].

Urban user–equipment, user–urban space, and user–user relationships depend on a number of factors that are subjective in nature and difficult to control, and others that can be influenced by the project. We can identify two groups of variables that influence these relationships: the modulators of the bio-psycho-sensorial sphere, of the ergonomic sphere, and of the social sphere that make up the filters with which we perceive the external world; and the external variables, which are the physical, cognitive, and social dimensions of the project that determine the behaviors and actions of the users, respectively, of passive use (such as the parking space), of active use (such as pedestrian–cycle paths and fitness areas), and of social use (such as spaces managed by citizens).

The room-walk is therefore not a neutral scenario but an operating factor [16,35,38]. The environment, understood as an entity of support to the person, as a sort of carpet in which the plot consists of physical factors and the warp by social factors [39], has the ability to adequately support the lives of people depending on its physical characteristics and the efficiency of the social support network available. The set of relations that develop between these two groups of variables determines the equilibrium of the urban system by favoring or hindering the conditions of antropo-dimensional and psycho-physical well-being, and anthropo-dynamic and social well-being (Table 2).

Table 2. Table of the system requirements that the project will have to satisfy based on the needs of the users, respecting the context of use. (1) Antropo-dimensional and psycho-physical well-being. (2) Anthropo-dynamic and social well-being.

System Requirements		
Psycho-Sensory Sphere		**Ergonomic Sphere**
Visual well-being Hearing well-being Olfactory well-being Microclimatic well-being	**HUMAN**	Accessibility to sport Easy use Dimensional suitability Safety in use

Rethinking the city also means transforming the typical places of the crisis of the modern city into new opportunities to become the privileged seat of social exchange, or healthy environments, with a new vision of the sustainability of urban spaces able to support human healthy behavior and well-being.

4. Result: An Experimental Design in the City: Proposing Reflections for the City of Pisa

The design strategies are also identifiable in the design experimentation conducted in the city of Pisa. The research project is to redefine mobility within the city, through various levels of use. The main objective of the study was therefore to develop some proactive reflections for the city, assuming movement is an opportunity for development, growth, and transformation, aimed at the well-being of the citizen and of the city itself. The city of Pisa is known all over the world for its historical architectural heritage culminating in the Piazza dei Miracoli and the Leaning Tower. The city has unfortunately been affected for years by a deterioration of urban spaces especially in the historic center [40,41]—a deterioration that also affects the livability of the city as well as the happiness [42–44] and well-being of citizens [45,46].

The proposed interventions focus on the recovery and redevelopment of the historical-architectural heritage and the urban environment, the infrastructures linked to tourism, and the rebirth of the historic center, not only for the revival of traditional and neighborhood commercial activities but also for the enhancement of the offer aimed at pedestrian mobility with the rediscovery of paths and areas of inclusion and socialization (Figure 2) [47]. The study was developed through an initial phase of cognitive analysis of the urban fabric, passing through the criticalities encountered by the citizens—thanks also to the help of the participatory planning tool with questionnaires and interviews—to define the structural problems of reconversion of areas where interventions are proposed.

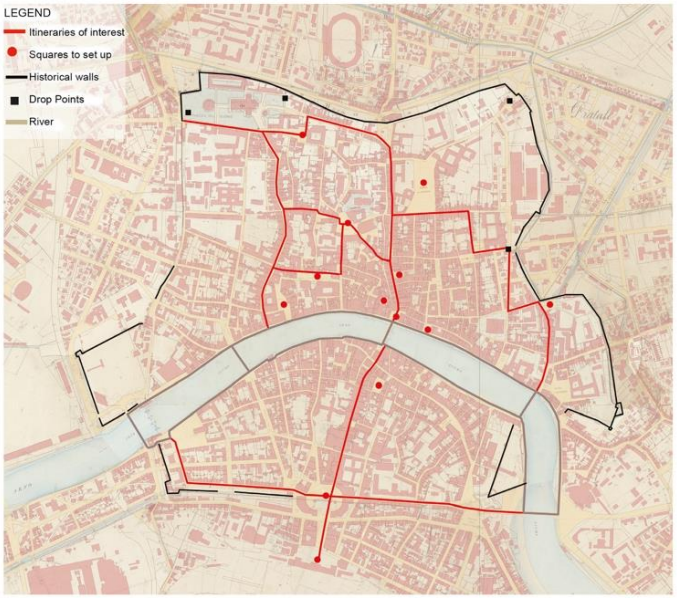

Figure 2. Pisa: the complex system of paths, of urban spaces, and of the architectures identified as a starting point for research. In the legend from top to bottom: itineraries of interest, squares to set up, walls, drop points, and the river.

Health and urban space are two realities that need to progress in close connection; one of the main challenges of the 21st century is the fight against obesity and the incentive for movement, and Pisa has lent itself in its entirety as a center for scientific-cultural elaboration on an international level. In developing the design strategy, it was decided, following the constructive originality of the building, to break up the urban fabric on three levels:

- the +1 level, the city walls,
- the 0 level, public space with its streets, squares, and architecture, and
- the −1 level, the river.

In the overall rereading of the Pisan urban organism, a fundamental role is assumed by the walls, an indispensable corollary and connotative of the medieval settlement. For example, in the building route, it is important to define new points of descent chosen in correspondence with the areas of high sociality or of great historical and landscape value. These new places can become real terraces in the city and give passersby a moment of rest and, at the same time, the opportunity to appreciate the view from a special and optimal point (Figure 3). For Level 0, or the public space enjoyed by people, it is useful to start from a reflection based on the concept of recycling, reuse, and re-appropriation of the spaces of everyday life that smell of the old. The spaces of particular historical-architectural interest, the symbolic places, have sometimes undergone interventions that have distorted their true essence. A new project direction should be oriented toward operating on what is felt as a non-place, precisely because it is not experienced by the community; the enhancement of these spaces could therefore give rise to a new urban fabric, a new network of functions and relationships, a network merged finally with that of the consolidated historical city. New pedestrian paths that cross the secondary lines of the urban center to favor the harmonization of the three main anthropic flows (the student, the tourist, and the *cives*) (Figure 4) are identified. Level−1 provides for the rereading and the new use of the spaces along the banks of the river, especially during the beautiful season, a period when the flow of the river is limited; a new perspective therefore from which we overlook the city, without the urban traffic, is highly suggestive, with the benefit of considerably decreasing the chaos that invades the banks of the river in spring and summer. The project takes the form of an expansion of the existing quay surface by means of floating structures that can be removed during the winter, with installations of different

functions capable of satisfying the attractions and needs of a large number of users, such as play areas, refreshment areas, urban gardens, and solariums (Figures 5 and 6).

Figure 3. At the top, the path at an altitude above the walls (Level +1) allows for a new perspective of the monumental complex of Piazza dei Miracoli. Below, a design proposal for one of the points of descent from the path above the walls.

Figure 4. On the left, Pisa, Piazza Gambacorti. On the right, the proposal with a skatepark, consisting of temporary and mobile elements, as a tool to innovate the urban scene and social gathering moments.

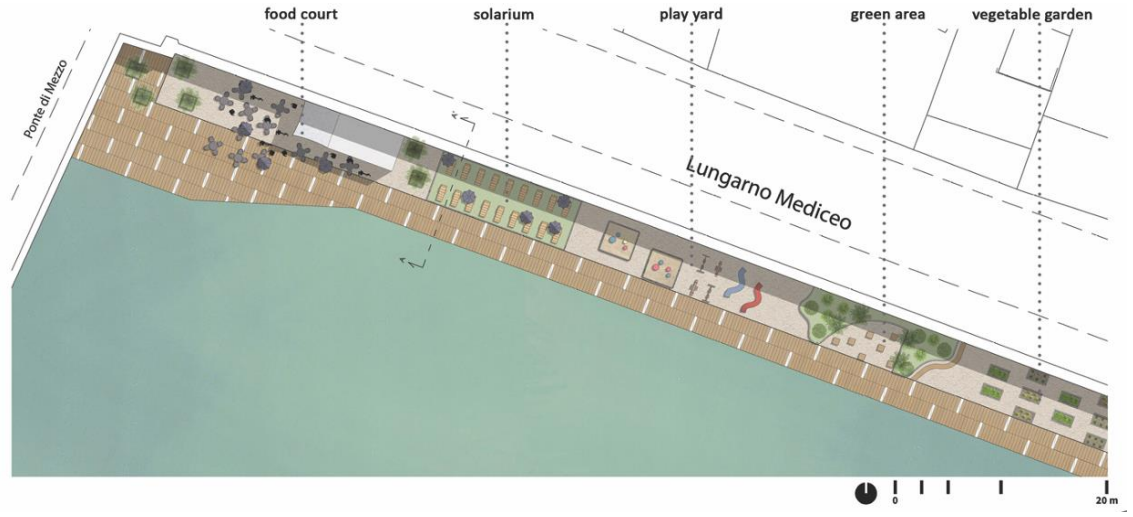

Figure 5. Pisa, the plan of redevelopment proposals with new functions.

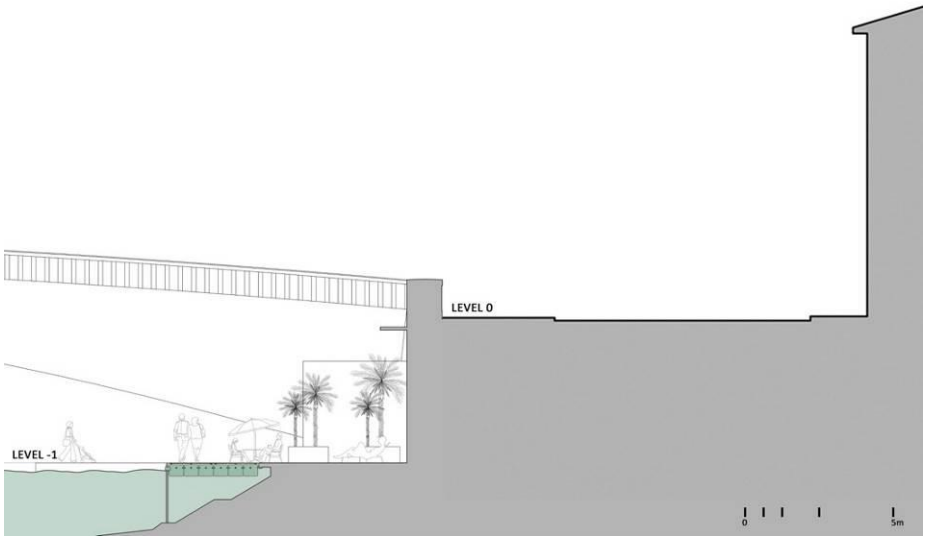

Figure 6. Project section of the existing quay and its floating extension; the new public space, created at the river level, is characterized by stopping places, routes, and temporary commercial activities.

5. Discussion

The results of the research illustrate how the pleasant experience of low-pace mobility, walking or cycling, is different for each user and is obviously based on many factors, some of which are influenced by the project, while others are impossible to check [48–50]. The paths identified in the city of Pisa allow both slow mobility and perception of the city and are integrated with project proposals. However, it is still difficult to find a procedure to enable the person to move. This problem, however, affects other fields of study from the social to the psychological to the medical. There is a need for the development of transdisciplinary research.

Regardless of the available level of control, there is a set of key requirements, which contribute to an active experience of such spaces. The requirements and strategies have been organized into two groups:

- anthropo-dimensional and psycho-physical well-being;
- anthropo-dynamic and social well-being.

The former refers to the ability of urban space to be stimulating from a sensory and comfortable point of view because it is correctly sized. The fundamental elements to make a place recognizable and not anonymous comprise the dimensional relationship between the components that structure the urban space (extremely wide or narrow streets attract attention). Moreover, the presence of hierarchies—geometric, dimensional, and formal—between the different elements that structure the urban spaces allows us to define uses and recognizability, giving back a feeling of physical and psychological well-being to users.

The latter group refers to the ability of the urban space to favor physical movement (anthropo-dynamic well-being), as it is viable, varied, flexible, connected, and participatory, and refers to the user participation in defining the ways of using space (social well-being).

The perception of urban space and of architectures can undoubtedly vary according to the height and distance of a point of view from what has been observed, but these parameters can also change the conception of the arguments connected to these elements. This can become a moment of research and experimentation by introducing new interpretations of the city and of the built environment in general. Starting from these assumptions, the research has made thorough investigations in the form of case studies, together with analyses of the state of the places, listening to the needs of Pisa, its center, and its context. The initial intentions of the experimentation, which took place through the project proposals,

are based on the quality of urban growth based on pedestrianization as an element of valorization: the city is read for its livability in perspective, both temporal and spatial.

The proposals, observing the concept of urban planning according to new models for humans and their needs, allow for the recovery of places of life through mobility, introducing distances to be covered by pedestrians and increasing public transport. It therefore allows individuals to recreate a pleasant environment in which to live, work, and have leisure, encouraging socialization, facilitating sustainable mobility with the use of the bicycle, and finding outdoor places to practice physical activity. Rethinking the use of the existing urban space, especially the hidden space, in a new way contributes to its recovery and enhancement; in some project strategies, the public space enters into synergy with the existing building heritage, thus obtaining an integrated system of architectures and open spaces in the service of the individual; others are in harmony with some excellent examples and studies about urban revitalization [51–57].

In this context, the boundary walls, the squares, the wide openings and streets, the river with its docks and stopovers, and the green system are transformed into new opportunities of growth for the city of Pisa, with pedestrian and cycling itineraries of greater interest. Along these paths there are sometimes poorly exploited architectures and public spaces; this is why some squares, being able to become new focal points of the whole city, have tried to assign a new structure, even with new functions, to transform them into attractive poles. The project proposals always try to listen to the vocations of the place, understanding its attitudes and the spontaneous uses by the people; an example is proposed for the level of the river. Here the project is expressed in a widening of the existing quay surface through a floating structure, removable in winter where necessary, in order to arrange various activities, such as restaurants, solariums, play areas, and urban gardens, to attract a large population and discover a new usability of the spaces. An intervention would not only grant a further visual perspective of the city, undoubtedly excluding car traffic, but could also lighten the historical center from the chaos of the crowd that, invading the Lungarni especially at night, often becomes incompatible with the residential character of the neighborhood, without this being decentralized. Furthermore, the reappropriation of some important urban spaces, by the community, can be a tool to develop forms of urban design that positively influence the perception of urban safety in the urban environment.

6. Conclusions

This research specifies the importance and the centrality of the user-centered approach in the observation of the relationships established between individual, technological systems and built environments, to design according to a more complex perspective. This perspective in design asks for not only anatomical and metric needs (anthropometric vision) but also for needs connected to the sphere of perception, of cognitive processes, and of the social sphere (anthropocentric vision) considering carefully the recent contribution emerging from the new area of the psychology of sustainability and sustainable development [3,9,10].

Among the factors that must be considered for environmental planning, accessibility is one that mostly questions the requirements and expectations of the inhabitant and responds to a demand for fairness and social inclusion. This also encourages the practice of active lifestyles in everyday life for the maintenance of a healthy life through movement and healthy eating. The idea is that urban and architectural space can contribute to this goal, facilitating behaviors and habits in line with the needs of a healthy and socially active life. In this context, a greater planning vision, capable of favoring the reconnection between health, urban planning, and environmental planning, in line with current research on the cultural and organizational transition from Public Health to Urban Health, is desirable.

Today there are many virtuous examples on an urban scale carried out internationally; on the other hand, in Italy there are still numerous areas for the development of this theme. The need for the care of the person, resources, and the environment must not be limited to the creation of smart objects and smart cities; awareness on the individual, on the community and on the context that leads to changing lifestyles in sustainable environments must be built [58–63], considering also the

psychological environment and new empirical evidence based on new research on the psychology of sustainability and sustainable development [3,9,10].

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48. The illustrated work is a synthesis of two researches, the first one started in 2013, conducted at the Department of Energy, Systems, Land and Construction Engineering of the University of Pisa (DESTeC), on the relationships between architecture, planning and public health in close connection with the project "Pisa città che cammina" born with the aim of countering the epidemic spread of obesity by promoting active lifestyles and promoted by the Municipal Administration of Pisa, with technical support- of the European Institute for the Prevention and Therapy of Obesity and of the Hospital-University of Pisa, with the contribution of UISP—Pisa Committee. The second one F.A.AD, financed with ex 60% (PRA) published under the title Faad City.
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