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A Replicable Valorisation Model for the Adaptive Reuse of Rationalist Architecture

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Abstract: Adaptive reuse has progressively become a useful approach for generating new values concerning abandoned or underused buildings, sites, and areas to the extent that the topic is no longer conceived and perceived merely as a "bricks-and-mortar" issue. Instead, it has a dual nature: (i) one that is technical, linked to the difficult balance between low costs and fostering sustainable building solutions, and (ii) one that is social, which refers to social equity, well-being, and quality of life. Within this context, urban and architectural transformations are among those human activities that play a key role in shaping the territory in an increasingly invasive acceleration of urbanization processes. However, it is precisely here that adaptive reuse can counteract such alterations. This paper proposes a sustainable, economically feasible, and replicable valorisation model for the evaluation of adaptive reuse possibilities of a particular historical–architectural heritage, which is vast and widespread in Italy and an important example of Rationalist architecture. Such a model incorporates flexible and easily replicable spatial implications precisely because it is specifically related to the characteristics of an open-plan structure. In doing so, it aims to redefine the valorisation model based on a constant dialogue between the project and market analysis; the replicability of project strategies for "families" of historic buildings; and the need for the project's ability to change and adapt according to emerging requirements.

Keywords: valorisation model; decision-making; adaptive reuse; rationalist architecture; sustainable and resilient regeneration

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1. Introduction

Between 1922 and the beginning of the Second World War, thousands of iconic buildings were built in Italy, and all were examples of Rationalist architecture. Although they were linked to this precise historical and political moment with a clear function and symbolism, their exemplary value of the Rationalist movement and Rationalist architects (e.g., Adalberto Libera, Saverio Muratori, Ludovico Quaroni, Giuseppe Samonà and Giuseppe Terragni) is still recognised today [1,2].

More than 500 of these buildings are still present up and down the country, often centrally located in cities, although they are mostly abandoned or underused, having been used for a variety of purposes, both public and private, since the immediate post-war period [2]. They are all characterised by a free plan, in which the load-bearing structure is composed of the staircase core and the external perimeter walls of the building itself, resulting in large rooms or light internal partitions, which are therefore easy to demolish or transform.

These architectural features, which allow for great adaptability and flexibility, were the starting point for our study of a sustainable, economically feasible, and replicable valorisation model. The originality of the proposal lies in its development of a valorisation model specifically related to the characteristics of open-plan Rationalist architecture, also extendable outside the Italian context. Furthermore, the proposal redefines an integrated

idea of valorisation of the historical–architectural heritage and the socio-economic development for buildings that have a fundamental possibility for development and for rebalancing local realities.

Sustainable and resilient urban regeneration today encompasses the transformation of areas or buildings and their neighbourhoods, involving topics with recognised environmental, economic, and social implications. In the context of the Anthropocene, multiple new challenges are emerging for urban areas [3–7], while human activities are altering and affecting the environment. Urban and architectural transformations are among those human activities that play a key role in shaping the territory in what is an increasingly invasive acceleration of urbanisation processes. Nevertheless, this evolution offers opportunities for proposing new approaches and unprecedented transformative solutions [8]. Such complexity is often inherent in projects on a built environment that increasingly loses its original use, specifically on abandoned or underused buildings [9,10]. However, it is precisely here that adaptive reuse can counteract such alterations.

Adaptive reuse has progressively become a valuable approach for generating new values concerning abandoned or underused buildings, sites, and areas [11–13], and the topic is no longer conceived and perceived merely as a "bricks-and-mortar" issue. Indeed, adaptive reuse can be defined as a process of reuse where new and different content is introduced into an existing container—e.g., building, infrastructure, place, area—following the principle of maximum conservation and minimal transformation [14]. In this sense, architecture becomes the key element in encouraging social practices of adaptation to achieve maximum potential and exemplifies the link with the past, which is seen as an opportunity for the future. Furthermore, adaptive reuse results in a strategy that both preserves and enhances the built environment, giving it a new function [15,16] and avoiding the waste of energy and materials that new construction implies [17].

Accordingly, adaptive reuse has a dual nature, since every urban and architectural transformation unfolds in a process that depends on the interaction between different aspects. Firstly, it is technical, linked to the difficult balance between reducing costs and fostering sustainable building solutions. Technical aspects can refer to both environmental and economic benefits, related mainly to a lower consumption of energy and materials [18,19] as well as the cost-effectiveness of adaptation as opposed to demolition and reconstruction [20]. Adaptation is an effective and environmentally responsible approach [21] and a contribution towards achieving circular economies and avoiding soil consumption and a waste of resources [22]. Secondly, it is social, referring to social equity, well-being, and quality of life. Social aspects can refer to positive externalities produced on the real estate value of the building itself in terms of life quality improvement [23] and symbolic and cultural value [24,25]. Here, the project, in its interaction with the world, can be read as a tool to encompass this totality of technical and social aspects, which inevitably implies a certain degree of uncertainty in outcomes. The definition of urban and architectural transformation in these terms frames design activity in a socio-technical system [26–28].

The question that arises is whether it is possible to propose a replicable valorisation model for adaptive reuse, capable of dealing with both technical and social aspects in the enhanced properties. Indeed, transforming abandoned/underused built environments is often complex and problematic, especially in defining and designing potential uses that will guarantee the preservation of tangible and intangible aspects [29] and benefit the sense of community [30]. To properly meet all the needs is thus crucial for understanding the problem: which elements to take into account, how to transform them into design strategies, and how much value will be produced [31].

Given this premise, the paper aims to answer the following research question: how can a sustainable, economically feasible, and replicable valorisation model be defined for the adaptive reuse possibilities of open-plan Rationalist architecture?

By way of answer, we continued a recent debate on the relationship between architectural design and economic-financial evaluations for the adaptive reuse of abandoned buildings [32,33]. In particular, we adapted and expanded the incremental strategy pro-

posed by Ingaramo et al. [32] in terms of (i) analysis of the building and the market area; (ii) development of an adaptive reuse project; and (iii) construction of an incremental architecture and value creation strategy under a holistic and integrated framework, which is also replicable. We illustrate this strategy through its application to the case of the former "Casa Littoria Nicola Bonservizi", located in the city of Genoa, where we tested the relevance of a replicable valorisation model for the adaptive reuse of the Rationalist architectural heritage in the Italian context. It must be stated that, even if the transformation of this building is the real intention of the building's owner (the Municipality of Genoa), as discussed between the property and the authors, this study is not derived from an assignment, and it should be considered as a speculative case, albeit in a real context.

The paper is structured as follows. Section 2 presents the overall research context. Section 3 describes the proposed methodology. Section 4 illustrates the case study and the application. Lastly, Section 5 summarises the conclusions.

2. Research Context: A Specific Italian Asset of Rationalist Architecture

In the first half of the twentieth century, a specific building typology spread throughout Italy, with the construction or repurposing of more than eleven thousand buildings designed and built in a relatively short period. Called "Case del Fascio", they constituted the local headquarters of the National Fascist Party.

Analysis of this vast production gives the impression of having witnessed "a great architectural competition lasting twenty years" [34], in which most of the designers of that era participated. From 1922 onwards, the transition from secret to official locations was proportional to the growth in party membership and the consequent need to provide and create new facilities with larger and more dignified premises. Starting in the 1920s, the regime thus provided general parameters to conform to, with a progressive attempt to define them typologically.

Moreover, each building had to be built with a series of recurring elements in order to make these complexes easily recognisable. In this sense, each building had to feature at least three specific elements: the "piazza-agora" facing the building, which was to serve as a place for gatherings; the "arengarium", from which to harangue the crowd during rallies; and the "Torre Littoria", a tower usually represented as a punctiform monolith, which was a clear allusion to church bell towers.

According to the architectural types to which these buildings were designed, four macro-groups can be identified (this is the authors' own elaboration, based on [34]), which vary concerning the position of the Torre Littoria, and/or the piazza-agora, and/or the internal distribution, and, consequently, the architectural aesthetics (Figure 1).

The first group is characterised by a single architectural volume consisting of both the conference hall, where the party celebrations took place, and the office block. The second group is defined by an L-shaped volume, in which the conference hall and the office block are two different but united portions. The third group is characterised by separate and independent volumes, in which each block has a specific function, and the Littoria Tower is considered as a separate volume. Finally, the fourth group follows the specific needs and characteristics of the plot, often with a trapezoidal appearance.

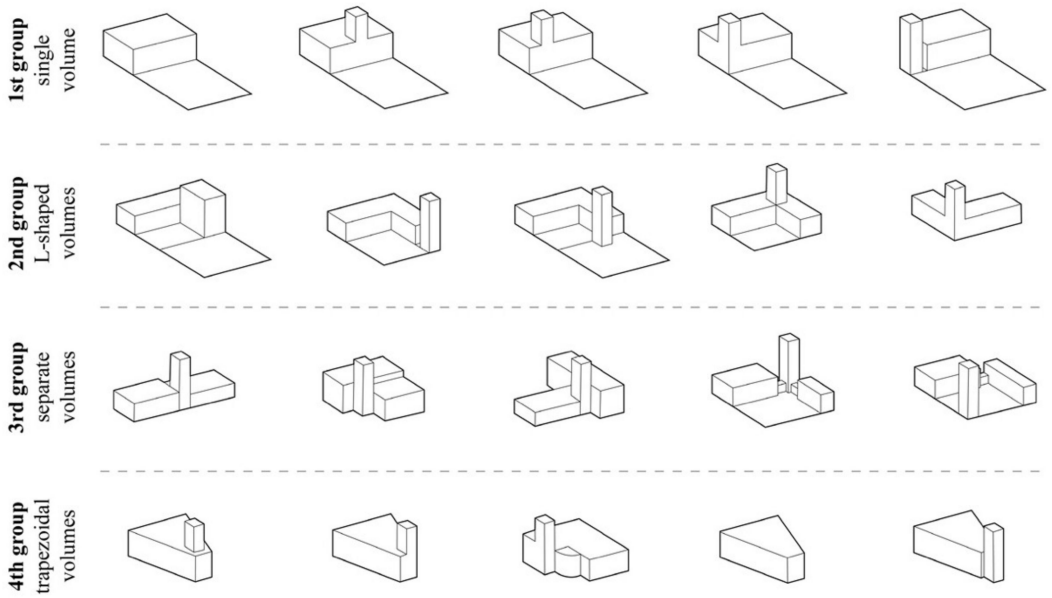


Figure 1. The four macro groups of architectural types.

To provide an account of the scale of the phenomenon dealt with, and, thus, of the importance of proposing a model for its repurposing, 549 buildings exist today [34], some of which have been restored, while others are in a state of abandonment, often having undergone different changes of ownership. A synoptic and diachronic restitution of the "Case del Fascio" (Figure 2) shows the 549 properties, represented by the region with a symbol, according to the temporal representation on the semicircular axis, which is defined in segments and by an indication of the surfaces on the vertical axis from the smallest (Section 1, top) to the largest (Section 4, bottom). It should be specified that the last segment refers to all those buildings that cannot be dated with certainty.

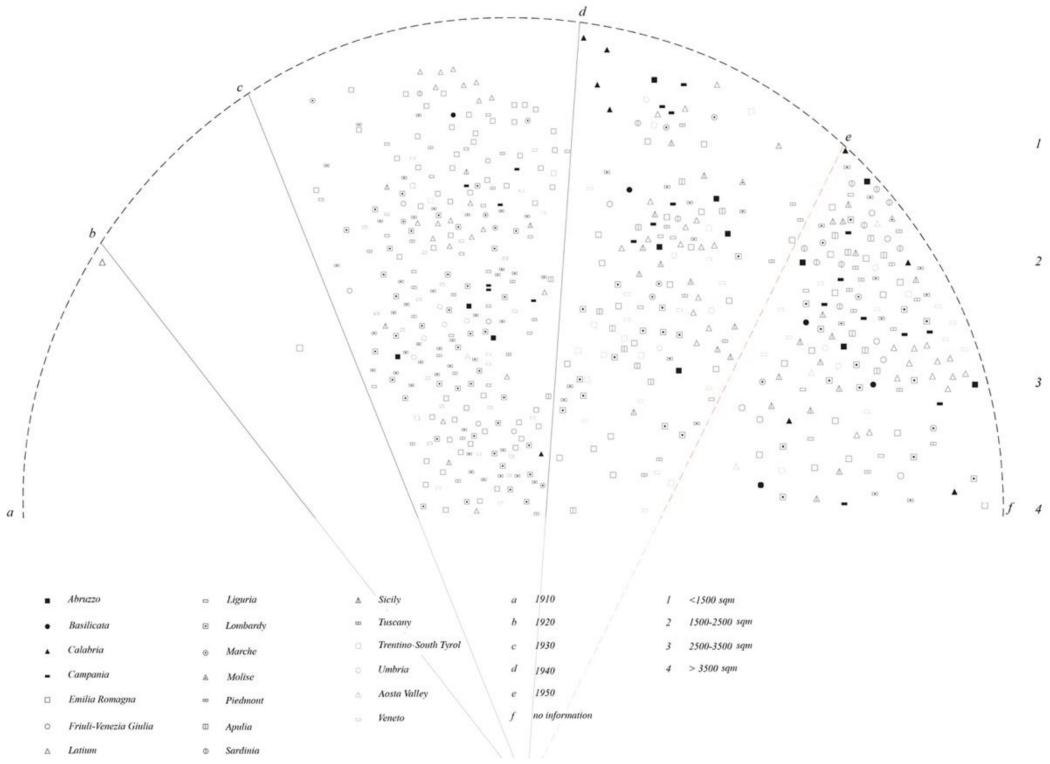


Figure 2. A synoptic and diachronic restitution of the 549 "Case del Fascio".

As the analysis reveals, this can be conceived as a "family" of buildings, and the interest of this research arises precisely from the fact that the sustainable, economically feasible, and replicable valorisation model can be easily adapted to a large number of buildings. In this sense, the reasoning in terms of typology further allows the replicability of the model. The latter is a significant aspect because adaptive reuse operations often have unique characteristics. Such a model is sustainable since it can have flexible and easily replicable spatial dimensions, specifically because it is related to the characteristics of open-plan Rationalist architecture, but also in and of itself because it can be adopted again for adaptive reuse elsewhere.

Indeed, the second CIAM congress (Congrès internationaux d'architecture moderne held in Frankfurt in 1929) dealt with the theme of the cellular dimension of the residence, which is only possible through a flexible use of space, so that it can become a multifunctional place. In this regard, let us recall Le Corbusier's five fundamental points: pilotis, roof garden, free plan, free façade, and ribbon windows [35]. The third term made explicit the concept of flexibility, and it is in the Rationalist period that the use of the free plan becomes the basis for the flexibility of structures, based on which the reiterability of the proposed model can b discussed. Therefore, since the Rationalist buildings we are analysing here can be grouped into four typological macro-families, one might think that each group would be associated with a different interior architecture, but, in fact, this is not the case. All of these buildings are, indeed, characterised by a free plan, in which the load-bearing structure is composed of the staircase core and the external perimeter walls of the building itself to ensure greater spatial flexibility, resulting in large rooms or light internal partitions that are, therefore, easy to demolish or transform. Accordingly, the challenge is to demonstrate how the model can be proposed in such public buildings specifically through their architectural characteristics, thereby turning a controversial piece of our heritage into an opportunity for development.

3. A Methodology for the Requalification of Rationalist Buildings

In this research, we adapted and expanded the incremental strategy proposed by Ingaramo et al. [32] to our specific purpose, articulated here in three phases (Figure 3):

1. Analysis of the building and the market area, which includes a real estate market analysis and a demand analysis.
2. Development of an adaptive reuse project, integrated with the previous analyses and an economic feasibility assessment through a Discounted Cash Flow (DCF) analysis.
3. Construction of an incremental architecture and value creation strategy, adaptable and replicable according to the architectural characteristics of open-plan Rationalist architecture.

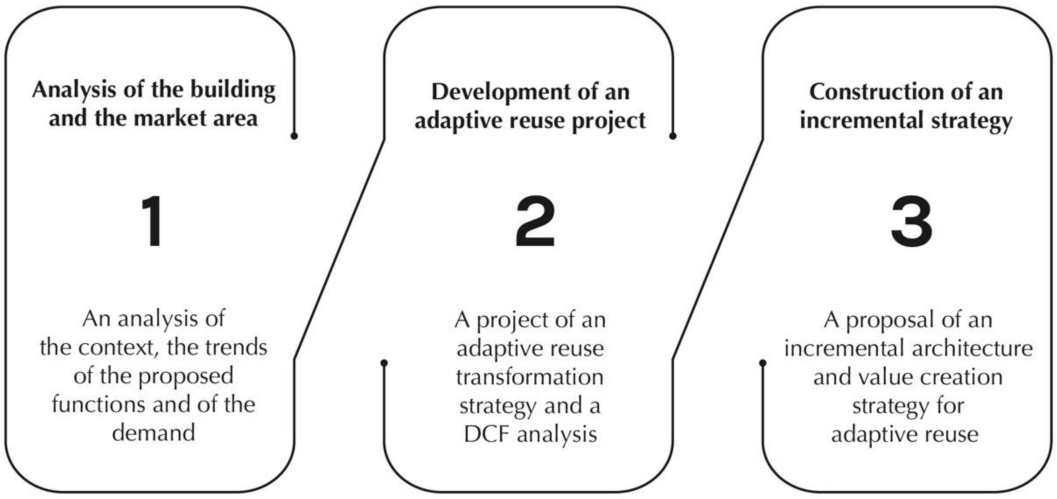


Figure 3. The phases of the methodology.

The different steps of the methodology aim at tackling the highlighted technical, social, economic, and typological issues [9,21]. The possibility of innovative development of these properties, as dormant capitals spread over the territory, emerges precisely because of the various considerations of their potential value—not only economic but other forms of value, too. Consequently, a comprehensive methodological approach must involve exploring and assessing the building, establishing a vision, making the first moves through the project, bringing partners on board, and defining possible design options [13].

First, the analysis of the building and the market area helps to understand the characteristics of the property from both a spatial and an economic point of view as an aid to the conception of an effective design idea, and one that is properly embedded in the existing real estate context. An observation of the data and an understanding of the context are necessary to enable the exploration of reuse possibilities and evaluate their potential. Indeed, the success of an adaptive reuse project depends on a variety of factors, including location and the building's ability to support certain activities, all of which must be evaluated in timely fashion in advance of the proposal [13,21]. The demand analysis allows us to investigate the context and interests of future users. It has technical implications, analysing the possibility of the inclusion of certain specific activities in spatial terms, but also social ones, investigating interest with respect to new functions. It is therefore crucial to create a vision of the possible future of the building that is not only aligned with global and local trends but also able to activate and engage partners from citizens to businesses. Otherwise, the building risks not succeeding in involving and satisfying occupiers [9].

Second, the adaptive reuse project tackles the reconfiguration of space as a strategy for saving materials, time, and money [9,20], technically realizable if the existing building is flexible and adaptable to accommodate changing spatial needs. Exploring a building's potential in this sense allows us to define whether it can fit both present requirements and future changes, enabling a technically feasible and economically sustainable investment. Accordingly, the DCF analysis aims not only to evaluate and verify the economic feasibility of the defined scenario, but also to reflect on the potential of the proposal to attract innovative activities as well as more in general ones to involve the community [13], seeking a balance between the proposal of new functions and responsiveness to the market analysis conducted previously.

Third, an incremental architecture and value creation strategy, adaptable and replicable, aims at enhancing the proposal in its typological implications. Innovative activities in a former abandoned building and "perceived new vibrancy" can quickly create positive attention for other abandoned or underused sites, significantly increasing their visibility within a neighborhood [13,20]. Observing the architectural and typological features of a "family" of buildings is thus a prerequisite for understanding and realizing their potential as a resource. Indeed, it would make it possible to activate them as part of the broader urban infrastructure and consider such an adaptive reuse valorisation model as part of a larger system, able to address the potential functions and the performance of other buildings besides the one under consideration.

3.1. Analysis of the Building and the Market Area

The methodology considers a real estate market analysis as a first phase for analysing the trends in the context examined and for detecting the starting conditions for a valuable and sustainable regeneration project [36–38]. Since urban regeneration involves several economic, social, and political actors, a demand analysis is then useful to investigate the recipients of the transformation—who will potentially affect or be affected by the project—in order to reinforce any proposed transformation strategy.

A first step is the observation of the building being converted, linked to the extrinsic and intrinsic characteristics [39]. The extrinsic features relate to the location of the property in a defined context, and to the relationship of the building with its surrounding system and environment (e.g., the efficiency of public services or the location in relation to major connecting arteries). The intrinsic features concern the property's size, condition, and

state, as naturally or artificially incorporated into the property itself (e.g., state of preservation, age of construction). In particular, in adaptive reuse, specific attention is directed both to the analysis of the intrinsic typological characteristics of the building, aimed at enabling maximum reuse with minimum cost, and to the extrinsic characteristics, since the incremental strategy could provide for future expansion of the functions introduced. This framework aims at deepening the specific homogeneous market—a segment—to which the property/function under examination belongs.

A second step is related to international, national and local trends analysis of functions. Indirect sources—which report representative average data and real estate quotations—provide information on prices (€/sqm), rent (€/sqm per year), and also qualitative indications about the real estate market. The study of market trends, at both the international and national levels, makes it possible to highlight the trend of buying and selling, rents and prices, and the characteristics of the demand (surfaces, type of space, type of services, etc.), and then, at the local level, it allows us to understand minimum, maximum, and average values for the identified market segment.

Subsequently, a third step consists of collecting market values and rents on major functions through direct sources, which provide precise quantitative data, and of providing some initial transformation proposals with direct and indirect appraisals [40].

The real estate market analysis first constitutes a preliminary tool for planning strategies, as it collects information on different potential functions in order to rationalise the decision-making process. The study of market trends is useful for providing information on the system that should be modified on the one hand, but also on the opportunities that are related to the whole context and that can influence the process on the other.

The real estate market analysis is then integrated with a structured demand analysis by means of a survey, in which a transformation proposal is submitted to the opinion of some respondents. Analysing the market implies collecting as much information and statistical data as necessary to decide on a transformation.

A final step consists of a demand analysis, with respect to a transformation hypothesis, proposing a questionnaire, and processing the data. Analysing the demand implies a certain purpose, related to the transformation of a property, to collect as much information and statistical data as necessary to make a decision on a transformation. A sample of subjects is presented with a hypothetical transformation and market scenario, within which individuals must declare their individual preferences. Among other questions, in the hypothetical market, from the estimation point of view, units of measurement are used to study such preferences: Willingness to Pay (WTP), as the willingness of the community to pay in order to continue to enjoy a certain good, and Willingness to Accept (WTA), as a willingness to accept a sum of money on the part of the community to give up the use of a certain good [41,42].

Two contributions of this first phase can be highlighted. First, the real estate market analysis represents a valuable tool for detecting technical aspects to be developed in the project. It allows a preliminary understanding of both the context and the potential functions to be pursued in the transformation to be defined. Second, the demand analysis provides knowledge about the potential recipients of the proposal and their needs.

3.2. Development of an Adaptive Reuse Project

The second phase of the methodology relates to the development of an adaptive reuse project and the definition of an economic feasibility assessment through a DCF analysis. Here, an adaptive reuse project proposal is provided, in which the functions hypothesised through the previous phase are verified, adapted, and modified by means of the project itself. This proposal consists of a circular dialogue between market/functions and space/building, which can only occur through the project.

On the one hand, it enables this property to be financially reactivated, with a perspective of co-creation, sharing, and local enhancement, also maintaining and (even) improving the symbolic and cultural value of the buildings. Putting the city and population them-

selves in a position to intervene as users of the building, through their involvement in the surveys, also results in greater integration on a social level. On the other hand, an adaptive reuse project pursues an effective and environmentally responsible approach for technical aspects, avoiding any waste of resources and also benefiting the investors. Such a model allows the avoidance of soil consumption in favour of a proposal for reusing abandoned public estates, which comes with environmental benefits. Accordingly, adapting a building can benefit a sense of community by promoting the preservation of both tangible and intangible values. In this sense, the proposed methodology has been conceived to tackle adaptive reuse in its dual nature, both technical and social.

The adaptive reuse approach is integrated with the previous analyses and an economic feasibility assessment through a DCF analysis. DCF analysis aims to assess the economic feasibility of a transformation hypothesis through a monetary decision support method. Indeed, it is an evaluation technique whose objective is to seek the maximisation of income that can be obtained from an investment. It can be used when defining the profitability of an operation for private individuals to define the transformation value of an area, to quantify the profitability of different intervention scenarios, and to compare them in order to choose, among several alternatives, those that are most convenient [40]. This allows the project to be quantified, providing a measure of the transformation and an account of the process. This analysis is not a definitive answer in the decision-making process but helps the developer to observe the cause-and-effect chains that lead to the creation of the project, to understand its management, and to make it effective [43]. The use of the DCF analysis makes the measurement in monetary terms of the design idea operative in terms of key factors observed with respect to specific design choices. In this sense, it enables the impact of the design in technical terms to be captured, and a more conscious decision about the transformation to be pursued can then be made. Performing all these steps, it is then possible to understand and observe whether the design solution is in line with the aimed adaptive reuse approach.

3.3. Construction of an Incremental Architecture and Value Creation Strategy

The third phase of the methodology concerns the construction of an incremental architecture and value creation strategy, adaptable and replicable according to the architectural characteristics of open-plan Rationalist architecture. The strategy proposal in this third phase starts out from, and is complementary to, the previous ones.

By taking as reference the four key actions suggested for the valorisation of brownfields in Ingaramo et al. [32], we expand them in two ways. First, we adapt them to historical buildings instead of brownfield areas, where the importance of architectural design is even more evident, not just as a matter of scale but as a challenge in dealing with iconic historic buildings. Second, precisely because of the difference between these cases, here the typological analysis of the building "family" for maximum building enhancement—as envisioned by adaptive reuse—allows for further reasoning in terms of replicability of the model. Accordingly, the four phases remain the same in terms of general aims, but are declined in a different way:

1. Launch—to initiate some first possible actions capable of changing the perception of the underused asset. Based on market analysis, a preliminary understanding of both the context and the potential functions to be pursued emerges. In this step, the fundamental role of the project in a process of adaptive reuse becomes evident as a concatenation of actions and decisions, capable of producing effects in the space considered. The project, as a "promise of a possible future" [26], defines a new image of the abandoned building and produces real effects on the market.
2. Valorise—to reflect in terms of the specific architectural characters of the existing building in order to make the most with an adaptive reuse approach. Based on the development of an adaptive reuse strategy, specific actions emerge in the project proposal as well as architectural choices related to the characteristics of adaptability and flexibility of spaces. In this step, the space is conceived as an open system to

allow and promote processes of adaptation in which possible actions become multiple and complex, as a resource for several processes and practices through the project itself [44].

3. Stabilise—to create and consolidate a better strategy in terms of the project's management and operativity. Based on demand and DCF analyses, several modes of interaction with local economies are intensified in which actors, functions, and spaces are held together in terms of co-activities, co-management, and co-use with respect to the characteristics of flexible and adaptable spaces. In this step, the project allows the asset to become a catalyst of different uses and practices for new and various encounters between people and spaces, intensifying something that is already there [45,46].
4. Bet—to invest in attractive and non-ordinary modes of uses of the building. Based on the above-mentioned specifics of spaces, pursued through the project to flexibly accommodate new functions and involve actors, a replicability dimension is reached that brings together modes of management and use of spaces as an adaptive reuse approach adaptable to a "family" of buildings, specifically emerging from the characteristics of open-plan Rationalist architecture. In this step, reflection moves from primarily economic reasoning, assuming that the value of a real estate development is proportional to the achievement of certain states in which it is possibly negotiable [38]. Therefore, given the complexity and high risk of the operation, it is possible to envisage that during the previous steps, it may be difficult to find a buyer/investor. Once the image of the abandoned building has been transformed and some first changes have been executed, the asset will have greater marketability and more innovative functions can be proposed.

It has to be specified that such a strategy can provide a framework; however, the specific adaptive reuse project is then very much linked to the specific project, and, consequently, the key actions in this third phase are deliberately macro-categories of action.

4. The Case Study Application

The proposed model was tested on a case study in order to evaluate its potential and usefulness. After briefly synthesising phase one and two, the application then concentrated on illustrating the third phase, namely, the construction of an incremental architecture and value creation strategy as well as related key actions, which constitute the most original aspect of our proposal.

The former "Casa Littoria Nicola Bonservizi" is located in a nodal point in the city of Genoa, between the historic centre and the coastal areas. The district has a mainly residential vocation, and most of its development has taken place since the 1920s. The neighbourhood is rich in services, most of them schools and premises specifically for education, a number of green areas, and also commercial services, museums, and a church (Figure 4).

The building was designed between 1936 and 1938 (Figure 5) and the plot on which it stands strongly influenced its design, since it is located on a steep incline. This drop in height made two entrances necessary: a more symbolic access at the level of the square through pilotis, and another one eleven metres lower through a garden.

The design envisaged a hierarchical distribution via levels, with the offices on the first floor above street level and the spaces more open to the public in the block below street level, including a lobby, a library, a games room, a bar and a billiard room, the gymnasium, and the caretaker's quarters. Finally, the basement housed the changing rooms, the equipment store, the archive, the armoury, the coal cellar, and the central boiler. In plan, all the levels were organised according to a repeat pattern: the main helicoidal staircase leads to a hallway that distributes the flow towards the various offices, generally between 20 and 25 square metres in size. The staircase is narrowed by a continuous perimeter wall, which is also helical. On the roof, the semicircular pillars of the staircase continue upwards to form a belfry, which is now lacking its bell.

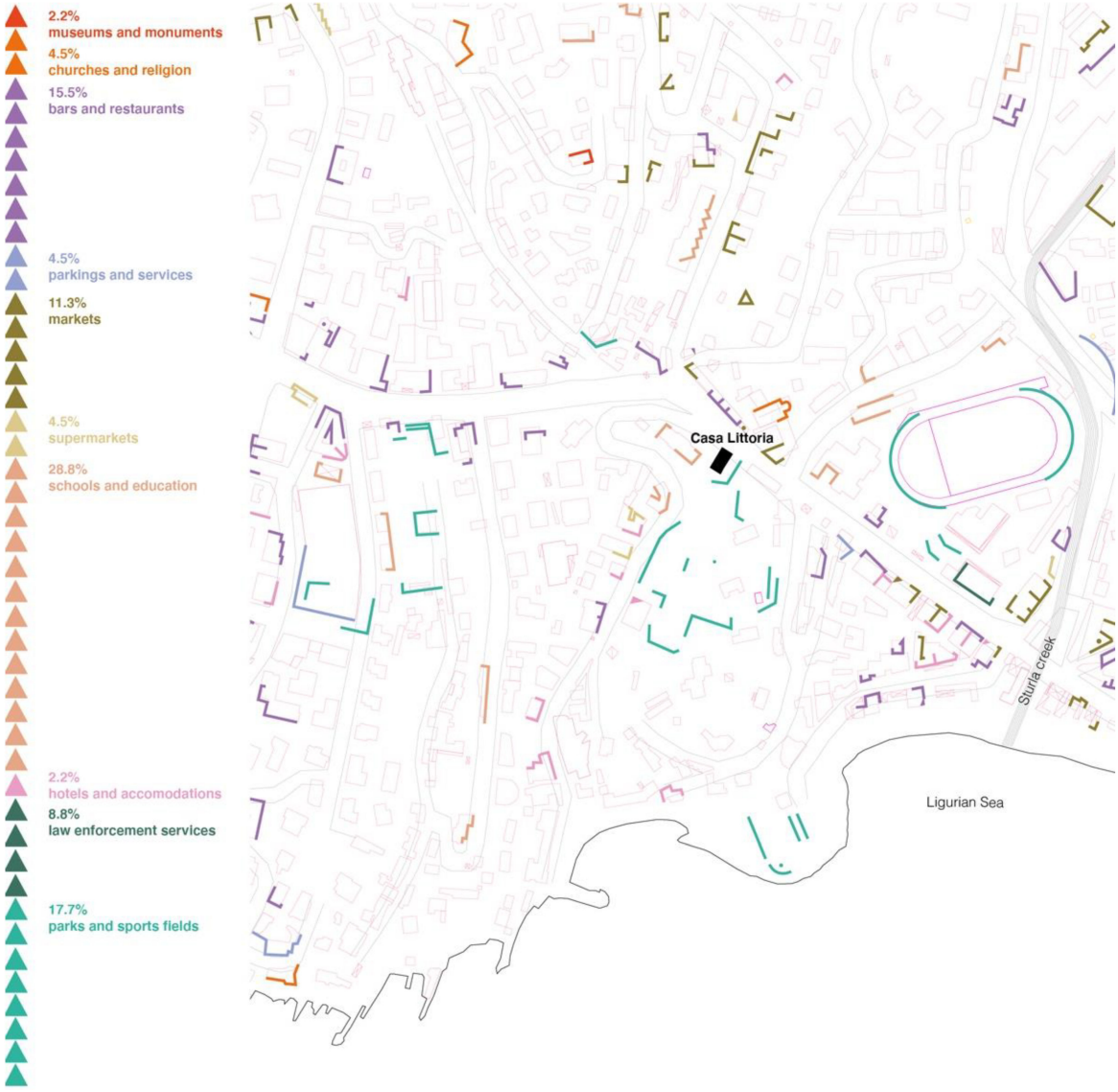


Figure 4. Functions and services in the case study neighbourhood.

The case study has been in a state of abandonment since 2009, after accommodating several associations of former members of various Army Corps. The building can be listed among the cases of "relative building obsolescence" [47], having lost its marketability due to functional obsolescence. Accordingly, investigating and enabling multiple uses could increase and incentivise chances for new profitability, and also trigger adaptive and flexible building designs. Moreover, the case is well suited to this application because it has recently been the subject of discussion and reflections at the municipal level with respect to its repurposing.

This goal can be achieved through a project capable of proposing ideas and functions that best suit the building given the strong architectural value it intends to preserve while also avoiding radical changes to the existing structure and its material consistency. Indeed, the intention is to redefine an identity and social function for the local communities [48]. Moreover, it is important to propose an intervention capable of making the asset usable again, with a repurposing both in terms of redistributing its spaces and in terms of its role within the neighbourhood with which it is interwoven. The activation of such public assets usually starts at a local level, precisely through their re-adaptation and reuse to generate revenue, or through their assignment to associations to maintain them [49].

Figure 5. A view of the case study, the Casa Littoria Nicola Bonservizi, from the street above (source: https://partnership.ilgiornaledellarchitettura.com/2019/04/19/genova-per-la-casa-littoria-di-sturla-si-ricomincia-da-zero/, accessed on 23 March 2023 © Andrea Canziani).

It must be stated that the transformation of this building is a real desire on the part of the building's owner (the Municipality of Genoa). Although not within the framework of a contract with the Municipality, when the study was conducted there were, nonetheless, exchanges of data and documents with this stakeholder. The proposed model therefore aims at rethinking and redesigning the former "Casa Littoria", redefining its relations with the context and enriching the area with missing services through the promotion of activities and initiatives of collective interest.

4.1. Analysis of the Building and the Market Area

This section shows how the real estate market analysis has been used as a tool to inform the preliminary definition of objectives and strategies, bringing to light the context and its trends, and proposing the reuse of the case study in an adaptive reuse manner. Through the study of national and international real estate market trends, a number of main functions were identified, related to catering, hospitality, culture, retail, body care and childcare. Indeed, trends show how, in a post-pandemic context, socio-economic effects have been particularly felt in these sectors, which both respond to the current post-emergency situation and meet possible future needs in line with an adaptive reuse perspective. Homogeneous case study areas were identified in the Sturla district—where the building is located—and the Albaro, Quarto, and Quinto districts. The estimation of average buying and selling and rental values for the different functions was carried out through indirect sources, such as OMI (Italian acronym for "real estate market observatory"). A further analysis was then carried out through direct sources (such as estate agency websites) with respect to the different functions identified. To complete the analysis, further research was conducted in terms of ticket costs, service costs, or costs per hour of work performed for cinema, food, babycare, and selfcare functions.

According to the demand analysis, the possible recipients of this city hub were hypothesised and then divided into three different categories: (i) *Partners*, such as small local businesses that want to offer a service but do not have a space to carry out their activities; (ii) *Supporters*, i.e., local businesses considered as sponsoring companies; (iii) *Customers*, i.e., citizens who could use the services provided in the space. Based on the demand analysis, the potential recipients of the transformation were involved to discuss the proposed

strategy. A double-version questionnaire was adopted, one referring to Customers and one referring to Partners and Supporters. The purpose was precisely to allow each respondent to choose the specific questionnaire relating to the selected target group. 532 questionnaires were submitted, with 226 responses sent and processed (Figure 6). Among the various services, the one related to catering received the most interest (60% of the sample). In addition, the selfcare service, which encompasses wellness and personal care, received positive feedback from both target groups in the sample. The showcase service had an equally positive response among Partners, as they were flexible in the way they participated and supported the proposal. According to the construction of the hypothetical market, the two questionnaires differed and investigated Willingness to Pay with respect to each of the proposed functions. In the case of the *Customers*, the questions referred to the value they attributed to each type of service, with specific values identified from the analysis of national and international trends. In the case of the *Partners*, the questionnaire was differentiated according to the various activities linked to each function and to a monthly payment for using the services.

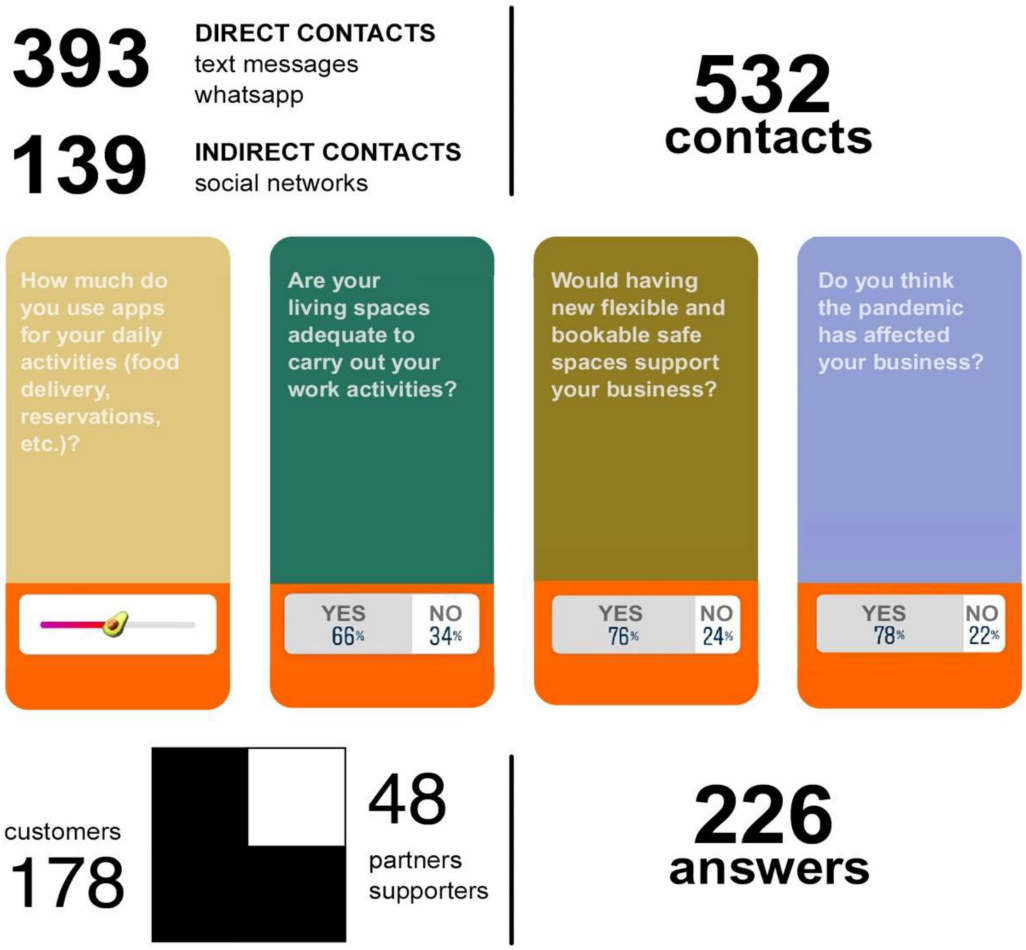


Figure 6. An overview of the contacts and answers in the demand analysis.

4.2. Development of an Adaptive Reuse Project

Starting from the previous analyses, a project was developed that maintained the architectural features of the pre-existing building, according to a principle of adaptive reuse. A modular aggregation was conceptualised, in units divided by size into 30 square metres (small, S), 60 square metres (medium, M), 90 square metres (large, L), and 120 square metres (extra large, XL), resulting in four types of standard and replicable modules. The uses of the building were therefore defined, based on the existing floor plan characterised by a substantially modular layout (Figure 7).

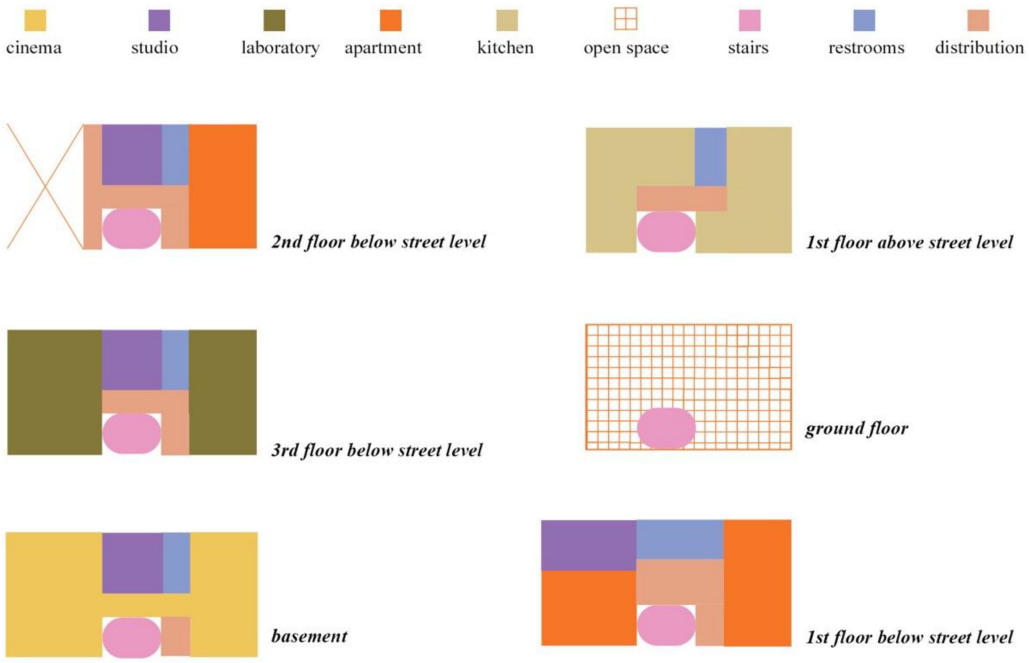


Figure 7. Definition of a reuse project.

Starting from these functions and spaces, a reuse project was defined for the entire building. The internal vertical distribution remained the same, with the helical staircase connecting all floors and a second linear staircase connecting the third and second floors below. The only addition to the existing building was the external insertion of the lift, necessary for making the building compliant with regulations and accessible to all. From a design point of view, the project's intention was to maintain the external appearance of the existing building by working on small touches related to the repainting of the building itself, which had been left in a state of neglect for several years.

A DCF analysis was then used for providing a monetary measure of the feasibility of the transformation and underlining the process and the steps through which it could be attained. Exploring this topic in depth is beyond the scope of this paper, but mention must be made of some features related to the construction cost and the profitability indicators.

As far as the construction costs are concerned, one part relates to restoration, one to new construction, and one to the interior fitting out of the building, with a view to adaptive reuse. The cost of new construction was estimated through a Regional Price List. The estimated cost of the fittings was hypothesised through research on furniture catalogues. The final transformation cost, quite low compared to major renovation, is indicative of the intentionality of the intervention, aimed at the adaptive reuse of a building of historical-architectural value. The analysis was calculated on an annual periodisation with a duration of the intervention of 15 years. Accordingly, in the definition of the profitability indicators of the operation, the Net Present Value is 12%, calculated with financing, with a payback period of seven years.

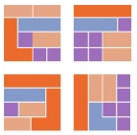
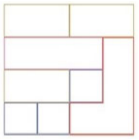
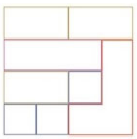
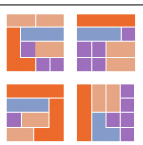
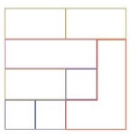
4.3. Construction of an Incremental Architecture and Value Creation Strategy

4.3.1. Launch

The aim to change the perception of the building was firstly pursued by drawing on the conducted analysis in the context of the case study (see Section 4.1).

The "*launch* action" was defined by considering the building as a connector between portions of the neighbourhood and as a city hub for collecting actions and weaving relationships between work, leisure, and culture. Accordingly, some specific actions and choices in the transformation can be traced back to certain aesthetic-architectural characteristics linked to Rationalist architecture (Table 1).

Table 1. Architectural actions and choices based on key elements of an open-plan Rationalist architecture.

	Key Elements of an Open-Plan Rationalist Architecture		**Architectural Actions and Choices**
LAUNCH		Distribution spaces (load-bearing staircase core)	Connection between different street levels through various functions at different levels
		Flexible partitions	Coexistence of several functions
		Modular layout	Flexible and adaptable shaping of functions
VALORISE		Flexible partitions	Reasoning about the elements according to their permanence in terms of aggregations
		Modular layout	Modular aggregation accommodating four types of standard and replicable modules
		Open-plan (load-bearing external walls)	Differentiated uses of the same room as a "container"
STABILISE		Distribution spaces (load-bearing staircase core)	Enhancement of several alternative accommodations of functions and actors
		Flexible partitions	Configurations in the same room without restricting the activity that can be carried out
		Open-plan (load-bearing external walls)	Possibility of transferring activities to other spaces
BET		Modular layout	Potential multifunctionality and different management of spaces
		Open-plan (load-bearing external walls)	Capacity of the system to modify itself in relation to the needs

First, the space in which the building is inserted as a connector between different street levels in conjunction with an important square of the neighbourhood places it in an interesting distributional condition. Although the building is not located in a central area of Genoa, it is nevertheless inserted in a context rich in services, both in its micro-zone and in the neighbouring areas. The distribution spaces (organised with a core of load-bearing stairs) make it possible to propose different functions at the various levels, differentiating the offer according to the tendencies that have emerged. Second, the building has a surface area (more than 2000 square metres, distributed over five floors) that is large enough to allow several functions to coexist. According to the "*launch* key action", the proposals related first of all to defining the functions to be accommodated, with the conception of a start-up. Based on the needs that arose, the proposal was called "FAR ENOUGH", which can be summarised as "FAR.E" (in Italian, a translation of "making") and declined in the following possible activities: Farecibo (as "making food"), related to catering, restaurant, bar; Farecasa (as "making home"), related to hospitality; Farecreativo (as "making creative"), related to culture, events; Vetrina (as "showcase"), related to retail; Selfcare, related to bodycare; and Babycare, related to childcare, babysitting, and tutoring.

4.3.2. Valorise

The aim to make the most of an adaptive reuse approach was then pursued through a reflection in accordance with the specific architectural characters of the existing building in terms of adaptability and flexibility of spaces.

The "*valorise* action" was defined by structuring a search for spatial and distributional typologies related to different functions—residential, commercial, productive—of different sizes in relation to the current distribution and size of the rooms and in an adaptive reuse strategy of the existing building. Accordingly, again some specific actions and choices in the transformation can be traced back to the peculiar aesthetic-spatial characteristics linked to Rationalist architecture (Table 1).

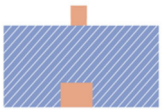
First, the presence of flexible partitions makes it possible to have several configurations in the same space without restricting the activity that can be carried out inside. Second, the potential of defined units in a modular layout allows the building to be subdivided coherently.

According to the key action "valorise", proposals are in relation to the characterisation of spaces. On the basis of the hypothesised unit sizes (S, M, L, XL), combinations of functions were distributed on the different levels, responding to the services that FAR.E proposes (food, home, creative labs, showcase, selfcare, babycare). The functions were translated into the abovementioned modules, as studios (S), two-room studios (M), workshops (M or L), kitchens (XL), and also a combination of the previous ones (XL). Starting from this distribution of functions and spaces, a reuse project was defined for the entire 2130 square metre development of the building (Figure 8).

The project shows one of the possible schematisations of the uses in the building (Table 2). The modules, thanks to the flexibility in the plan and the adaptability of the design, can be functionalised as the user prefers.

The internal vertical distribution remained the same, with the helical staircase connecting all floors. The external part was also rethought through the insertion of a playground, with the possibility of adding a screen on a new rigid structure containing some basketball hoops and, thus, also making the space into an open-air cinema. The only addition to the existing building was the external insertion of the lift, necessary for making the building compliant with regulations and accessible to all.

Table 2. Definition of the modules and schematisation for the project.

Floor	Existing Spaces	Project	Modules and Schematisations
1st floor above street level			Two modules are proposed (ochre-colored), arranged in a specular manner (kitchens, 120 sqm), hosting activities of experimentation, study, and cooking workshop, both for aspiring chefs and for users who book lessons (in light orange is the distribution space)
Ground floor			The original gate has been retained for greater privatisation of the building, and there is a covered square and play area for children (in blue, netted because it is an outdoor space)
1st floor below street level			Three modules are proposed, one studio (in violet, 30 sqm) and two two-room studios (in dark orange, 60 sqm), which can be organised with respect to different functions and activities through light vertical partitions or considered in tandem (120 sqm)
2nd floor below street level			Two modules are proposed (in blue, one of 90 sqm and one of 60 sqm), arranged for babycare and babysitting services, with some areas used as workspaces for drawing and colouring, and others used for listening to fairy tales and stories and more generally for reading
3rd floor below street level			Three modules are proposed, one studio (in violet, 30 sqm) and two workshops (in blue, one of 90 sqm and one of 60 sqm), to carry out different leisure activities
Basement			Three modules are proposed, one studio (in violet, 30 sqm), one two-room studio (in dark orange, 60 sqm), and one workshop (in blue, 90 sqm)

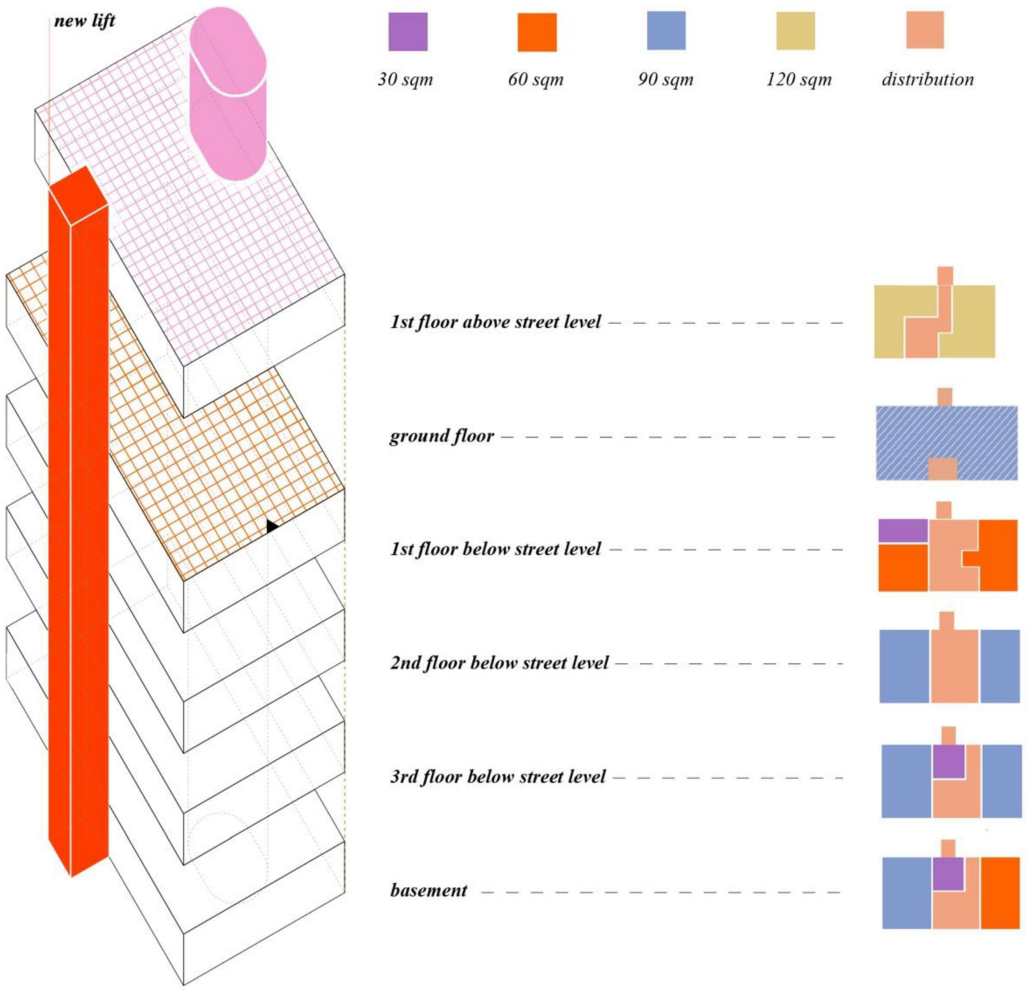


Figure 8. Definition of a reuse scheme (the modules—and their colours—are specified in Table 2).

4.3.3. Stabilise

The aim to create and consolidate a better strategy in terms of the project's management and operativity was further elaborated through the demand and DCF analyses (see Sections 4.1 and 4.2).

The "stabilise action" was pursued through the complementarity between a functional organisation and a relational system: the first was defined by means of designated spaces; the latter was not defined a priori, but through the users' utilisation, as a strategy open to diverse and emerging insights into the promotion of local economies. Accordingly, some specific actions and choices in the transformation can be traced back to aesthetic-architectural characteristics linked to Rationalist architecture (Table 1).

Thus, the distribution space, configured in a free and flexible manner, was considered as a support for enhancing the potential for several alternative accommodations of functions and actors. Since the units are designed to be proportional to each other (30, 60, 90, 120 sqm), flexible partitions then allow all the new activities and functions to be distributed. As a result, configurations have emerged without limiting the activity that can be performed in the same room as well as new formulas for value creation, promoted through processes organised directly by demand and potential actors. Finally, the open-plan concept allows a differentiated use of the same room, related to which is the possibility of transferring the activities to other spaces, according to the emerging needs of the involved actors. On the basis of the various activities linked to each function and a payment to be made monthly to use the FAR.E. service, the actors do not actually rent a space on an ongoing basis to carry out their activity, but rather have their own space available when needed (i.e., a service), integrating their activity in an overlap of functions.

According to the key action "stabilise", proposals are in relation to actors' involvement. The aim is therefore to design a place where people can go to conduct their business or, also, for recreational purposes, with the possibility, at the same time, of entrusting their children to a service that looks after them. There can be no reuse project without a community of people being involved in it, and FAR.E embodies it perfectly, representing the activities designed to respect concepts of co-distance, co-working, co-living, co-creating, and co-supporting in order to keep the city, the economy, and the citizens active.

4.3.4. Bet

The "bet action" was established by defining a management programme in which the building was transformed into a sort of "vertical city" capable of interacting and redefining itself according to the contingencies of everyday life. Indeed, the hypothesis is that the start-up FAR.E, as the entity in charge of project implementation, will also deal with the management and operation over time in terms of booking services, checking the availability of spaces, and ensuring that the process is always adaptable and flexible to new requests or needs. The activities are bookable by users through an app or directly from the website, as the essential activators and at the same time users of the new city hub.

Two actions can be highlighted. First, the modularity of the rooms ensures that the prerequisites for the "neutrality" of the space are in place, which is the foundation for the multifunctionality sought. This idea allows for space sharing and, consequently, for more flexible space management. The fact that certain parts of the building are not defined by the designer but can be shaped by each user with respect to his/her needs and also with respect to performing different functions is the innovative management element that attracts residents, entrepreneurs, innovators, and possibly investors. Second, the flexibility of spaces works in synergy with respect to the repurposing of this architectural typology. The adaptability can thus be defined as the capacity of the system to cope with contingencies of new, often unforeseen conditions and needs, renewing attraction for a wide variety of users, even unexpected at the very beginning of the management proposal.

According to the key action "bet", the aim is to provide a multifunctional system that continuously redefines the relations with the context and enriches the area with missing services, thanks to the adaptability of spaces and the bookability of activities.

4.4. Replicability of the Model

This system has been verified as equally and easily replicable in other cases, based on the abovementioned aesthetic–architectural characteristics of this "family" of buildings. To verify the model, the floor plans or the four typological macro-families of the buildings were used and schematised in order to reproduce the insertion of the modules of the project, with the possibility of modifying their appearance with reference to the intended use, as in the case study analysed (Figure 9).

The concept of FAR.E, based on the previous analyses, was further developed while maintaining the architectural features of the pre-existing building according to a principle of adaptive reuse, which is also useful for the reiteration of the model in similar contexts. Certainly, adaptive reuse is potentially useful for any type of abandoned building, but in this specific case, this building typology, characterised by its particular internal structure and distributional layout, as pointed out, turns out to be an extremely functional model that can be concretely reused according to schemes.

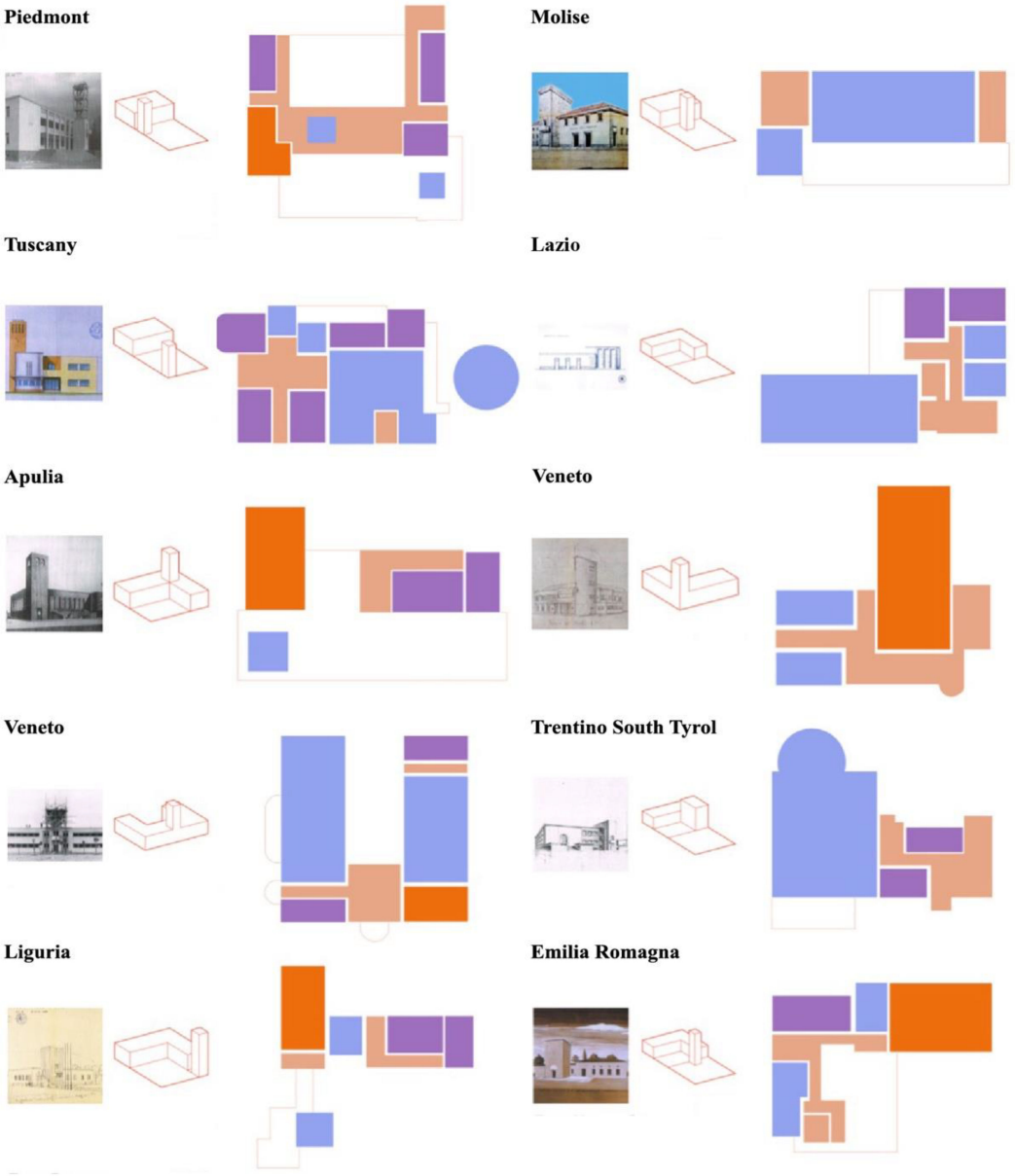


Figure 9. Replicability of the model applied to a sample of cases.

5. Conclusions

In this article, we propose a sustainable, economically feasible, and replicable valorisation model for the adaptive reuse of Rationalist open-plan architecture.

The paper makes three main potential contributions to the literature. The first derives from the identification and discussion of the possibility of transforming a controversial piece of heritage into an opportunity for urban and territorial development, thanks to its carefully analysed and exploited architectural characteristics in a constant dialogue between project and market. The second provides a specific perspective for defining replicable valorisation projects for "families" of historic buildings of Rationalist architecture that are potentially sustainable and successful, intercepting non-ordinary ways of using abandoned buildings and defining a replicable management model. The third contribution marks a further element in the interdisciplinary debate on the relationship between market analysis and design. Indeed, a sustainable reuse of real estate is fundamental for the preservation of the cultural, historical, and architectural values of existing buildings, and it can be attained if the project is constantly changing based on market needs and it manages to embody them.

We recognise two main limitations of the research.

First, as stated in the introduction, the case study should be considered a speculative case, albeit in a real context. Further insights into testing the methodology could derive from applying it to an actual project—considering, to take a few examples, a real client, a real budget, a real timeline, or real adaptive reuse—that would provide a further and more detailed way of learning regarding the project due to it emerging from an actual case.

The second limitation is in the application of the model to a single case study. However, in the previous parts of this section, we explore the potential for replicability with a first schematic verification of the model. Therefore, even if the approach has been tested only once, it can be considered as a transferable tool to support choices in a valorisation context of adaptive reuse.

In conclusion, as future perspectives, additional and real applications can be proposed in order to improve and expand the applicability and reiterability of the model itself.

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References

1. Prisco, L.; Stornelli, F. *Le Architetture del Novecento a Roma, Luigi Moretti e la Casa Della GIL a Trastevere. Lo Spazio Ritrovato*; Palombi Editori: Rome, Italy, 2010.
2. Pietrogrande, E. *Trentaquattro Case del Fascio. Settant'anni Dopo*; Marsilio: Venice, Italy, 2014.
3. Bettencourt, L.M.A.; Lobo, J.; Helbing, D.; Kühnert, C.; West, G.B. Growth, innovation, scaling, and the pace of life in cities. *Proc. Natl. Acad. Sci. USA* **2007**, *104*, 7301–7306. [CrossRef] [PubMed]
4. Steffen, W.; Richardson, K.; Rockström, J.; Cornell, S.E.; Fetzer, I.; Bennett, E.M.; Biggs, R.; Carpenter, S.R.; De Vries, W.; De Qit, C.A.; et al. Planetary boundaries: Guiding human development on a changing planet. *Science* **2015**, *347*, 1259855. [CrossRef] [PubMed]
5. McPhearson, T.; Parnell, S.; Simon, D.; Gaffney, O.; Elmqvis, T.; Bai, X.; Roberts, D.; Revi, A. Scientists must have a say in the future of cities. *Nature* **2016**, *538*, 165–166. [CrossRef]
6. Bai, X.; Dawson, R.J.; Ürge-Vorsatz, D.; Delgado, G.C.; Dhakal, S.; Dodman, D.; Leonardsen, L.; Masson-Delmotte, V.; Roberts, D.C.; Schultz, S. Six research priorities for cities and climate change. *Nature* **2018**, *555*, 23–25. [CrossRef]
7. Dell'Ovo, M.; Dell'Anna, F.; Simonelli, R.; Sdino, L. Enhancing the cultural heritage through adaptive reuse. A multicriteria approach to evaluate the Castello Visconteo in Cusago (Italy). *Sustainability* **2021**, *13*, 4440. [CrossRef]
8. Elmqvist, T.; Andersson, E.; Frantzeskaki, N.; McPhearson, T.; Olsson, P.; Gaffney, O.; Takeuchi, K.; Folke, C. Sustainability and resilience for transformation in the urban century. *Nat. Sustain.* **2019**, *2*, 267–273. [CrossRef]
9. Bullen, P.A.; Love, P.E.D. Factors influencing the adaptive re-use of buildings. *J. Eng. Des. Technol.* **2011**, *9*, 32–46. [CrossRef]
10. Conejos, S.; Yung, E.H.K.; Chan, E.H.W. Evaluation of urban sustainability and adaptive reuse of built heritage areas: A case study on conservation in Hong Kong's CBD. *J. Des. Res.* **2014**, *12*, 260–279. [CrossRef]
11. Abastante, F.; Corrente, S.; Lami, I.M.; Greco, S.; Mecca, B. The introduction of the SRF-II method to compare hypothesis of adaptive reuse for an iconic historical building. *Oper. Res. Int. J.* **2022**, *22*, 2397–2436. [CrossRef]
12. Gaballo, M.; Mecca, B.; Abastante, F. Adaptive reuse and sustainability protocols in Italy: Relationship with circular economy. *Sustainability* **2021**, *13*, 8077.
13. Robiglio, M. The adaptive reuse toolkit. How cities can turn their industrial legacy into infrastructure for innovation and growth. *Urban. Reg. Policy Pap.* **2016**, *38*, 5–38.
14. Robiglio, M. *RE–USA: 20 American Stories of Adaptive Reuse: A Toolkit for Post-Industrial Cities*; Jovis Verga GmbH: Berlin, Germany, 2017.
15. Dewiyana, E.; Ibrahim, N.; Hidayah, H.N. The green aspects of adaptive reuse of Hotel Penaga. *Procedia. Soc. Behav. Sci.* **2016**, *222*, 631–643. [CrossRef]
16. Permata, D.D.; Kuswandy, A.S.; Riza, A.I.; Sakti, P.F.; Diana, T.I. The centrum-bandung: Adaptive reuse at heritage building as sustainable architecture. *IOP Conf. Ser. Earth Environ. Sci.* **2020**, *409*, 012036. [CrossRef]
17. Todella, E.; Quaglio, C.; Lami, I.M. Projecting the underused. Increasing the transformation value of residential spaces through their adaptive reuse. *Lect. Notes Netw. Syst.* **2022**, *482*, 1476–1485.

18. Young, E.H.K.; Chan, E.H.W. Implementation challenges to the adaptive reuse of heritage buildings: Towards the goals of sustainable, low carbon cities. *Habitat. Int.* **2012**, *36*, 352–361. [CrossRef]
19. De Gregorio, S.; De Vita, M.; De Berardinis, P.; Palmero, L.; Risdonne, A. Designing the sustainable adaptive reuse of industrial heritage to enhance the local context. *Sustainability* **2020**, *12*, 9059. [CrossRef]
20. Douglas, J. *Building Adaptation*, 2nd ed.; Butterworth-Heinemann: Oxford, UK, 2006.
21. Elefante, C. The greenest building is . . . one that is already built. *Forum. J.* **2007**, *21*, 26–38.
22. Foster, G. Circular economy strategies for adaptive reuse of cultural heritage buildings to reduce environmental impacts. *Resour. Conserv. Recycl.* **2020**, *152*, 104507. [CrossRef]
23. Sanchez, B.; Esfahani, M.E.; Haas, C. A methodology to analyze the net environmental impacts and building's cost performance of an adaptive reuse project: A case study of the Waterloo County Courthouse renovations. *Environ. Syst. Decis.* **2019**, *39*, 419–438. [CrossRef]
24. Loach, K.; Rowley, J.; Griffiths, J. Cultural sustainability as a strategy for the survival of museums and libraries. *Int. J. Cult. Policy* **2017**, *23*, 186–198. [CrossRef]
25. Lami, I.M.; Mecca, B. Assessing social sustainability for achieving sustainable architecture. *Sustainability* **2021**, *13*, 142. [CrossRef]
26. Armando, A.; Durbiano, G. *Teoria del Progetto Architettonico. Dai Disegni agli Effetti*; Carocci: Rome, Italy, 2017.
27. Yaneva, A. *Five Ways to Make Architecture Political: An Introduction to the Politics of Design Practice*; Bloomsbury Publishing: London, UK, 2017.
28. Lami, I.M.; Todella, E. A multi-methodological combination of the strategic choice approach and the Analytic Network Process: From facts to values and vice versa. *Eur. J. Oper. Res.* **2023**, *307*, 802–812. [CrossRef]
29. Lami, I.M.; Mecca, B.; Todella, E. Valuation and design for economic and social value creation. *Lect. Notes Netw. Syst.* **2022**, *482*, 1465–1475.
30. Lami, I.M. Shapes, rules and values. In *Abandoned Buildings in Contemporary Cities: Smart Conditions for Actions*; Lami, I.M., Ed.; Springer: Cham, Switzerland, 2020; Volume 168, pp. 149–162.
31. Schroeder, T. Giving meaning to the concept of sustainability in architectural design practices: Setting out the analytical framework of translation. *Sustainability* **2018**, *10*, 1710. [CrossRef]
32. Ingaramo, R.; Lami, I.M.; Robiglio, M. How to activate the value in existing stocks through adaptive reuse: An incremental architecture strategy. *Sustainability* **2022**, *14*, 5514. [CrossRef]
33. Quaglio, C.; Todella, E.; Lami, I.M. Adequate housing and Covid-19: Assessing the potential for value creation through the project. *Sustainability* **2021**, *13*, 10563. [CrossRef]
34. Mangione, F. *Le Case del Fascio in Italia e Nelle Terre D'oltr Emare*; MiBACT: Rome, Italy, 2003.
35. *Le Corbusier, Vers une Architecture*; Edition Vincent: Paris, France, 1923.
36. Newell, G. The changing real estate market transparency in the European real estate markets. *J. Prop. Invest. Finan.* **2016**, *34*, 407–420. [CrossRef]
37. Sadayuki, T.; Harano, K.; Yamazaki, F. Market transparency and international real estate investment. *J. Prop. Invest. Finan.* **2019**, *37*, 503–518. [CrossRef]
38. Hoesli, M.; Gibson, R.; Shan, J. The valuation of illiquid assets: A focus on private equity and real estate. *J. Altern. Invest.* **2022**, *25*, 111–128.
39. Morri, G.; Di Benedetto, P. *Valutazione Immobiliare. Metodologie e Casi*; EGEA: Milan, Italy, 2017.
40. Baum, A.; Crosby, N.; Devaney, S. *Property Investment Appraisal*, 4th ed.; Wiley Blackwell: Oxford, UK, 2021.
41. Mitchell, R.C.; Carson, R.T. *Using Surveys to Value Public Goods: The Contingent Valuation Method. Resources for the Future*; Routledge: Washington, DC, USA, 1989.
42. Lami, I.M.; Mecca, B. Architectural project appraisal: An active learning process. *Valori e Valutazioni* **2021**, *28*, 3–20. [CrossRef]
43. Lami, I.M. Transport infrastructure and planning policies: The importance of financial analysis. The Crossrail of Milan and Turin. In *Governing Cities on the Move: Functional and Management Perspectives on Transformations of Urban Infrastructures in European Agglomerations*; Dijst, M., Thomas, I., Eds.; Routledge: London, UK, 2018; pp. 151–184.
44. Baum, M. City as loft. In *City as Loft: Adaptive Reuse as a Resource for Sustainable Urban Development*; Baum, M., Christiaanse, K., Eds.; Verlag: Zurich, Switzerland, 2012.
45. Schneider, T.; Till, J. *Flexible Housing*; Elsevier: Amsterdam, The Netherlands, 2007.
46. Baima, L.; Robiglio, M. Intensity of uses and spatial devices. In *Abandoned Buildings in Contemporary Cities: Smart Conditions for Actions*; Lami, I.M., Ed.; Springer: Cham, Switzerland, 2020; Volume 168, pp. 29–48.
47. Buitelaar, E.; Moroni, S.; De Franco, A. Building obsolescence in the evolving city. Reframing property vacancy and abandonment in the light of urban dynamics and complexity. *Cities* **2021**, *108*, 102964. [CrossRef]
48. Moroni, S.; De Franco, A.; Bellè, B.M. Unused private and public buildings: Re-discussing merely empty and truly abandoned situations, with particular reference to the case of Italy and the city of Milan. *J. Urban Aff.* **2020**, *42*, 1299–1320. [CrossRef]
49. Németh, J.; Langhorst, J. Rethinking urban transformation: Temporary uses for vacant land. *Cities* **2014**, *40*, 143–150. [CrossRef]