

The case of the Unità Residenziale Est - Ex-Hotel La Serra. The Delphi Method to support intervention scenarios to “re-Type” the City of Ivrea

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Abstract

The modern architectural heritage in Italy – significant in terms of size, heterogeneity and territorial distribution – often is in conditions of degradation or in state of abandon: this is partly due to negligence, but above all to the means of inadequate or totally absent public resources, aimed at ongoing maintenance activities, and to the presence of weak and unattractive markets for private investors. This heritage is identifiable in a set of “fragile” and at risk assets, for which it is essential to activate and strengthen protection processes, particularly related to an enhancement that is able to generate surplus values and trigger income streams. From the disciplinary point of view of the enhancement cycle, the possibility of reuse becomes the necessary condition for the increase of the value itself, both in its monetary meaning (in terms of capital and income value), and in the extra-monetary one, in terms of total economic value, connected to the benefits that this patrimony is able to generate.

An emblematic expression of the modern movement is the Unità Residenziale Est – Ex-hotel La Serra by Iginio Cappai and Pietro Mainardis in Ivrea, a building symbol of the Radical Architecture in Italy, which in the ‘60s in Europe is in conflict with the Modern Movement. This is an element that make the building extremely interesting and counted among the Olivettian architectures built during a phase of rapid industrial development in Ivrea – nowadays considered a dormitory city in search of a new identity that can be based on initiatives to promote and enhance the territory – which started from the beginning of 20th century till the ‘70s. Currently this complex – even in its recognized uniqueness – is still not included in the area covered by the UNESCO Nomitation “Ivrea, industrial city of the 20th century”.

By these premises and considering the strategic value of both the protection actions and the process of identifying and verifying the use destinations on which to base the

valorization, it was decided to experiment and apply to the case study of the *Unità Residenziale Est* a methodological approach aimed at the prefiguration of intervention scenarios, in which the forecasting role and support to decision making is entrusted to the well-known *Delphi Method*. This method, listed among the methods of analysis of the demand and forecast of scenarios of a qualitative and quantitative nature, in its classic version is based on a consultatio process of a panel of experts, structured by successive steps, through the use of repeated questionnaires, interspersed from feedback on the opinions expressed. In this specific case, three

possible scenarios of intervention were submitted to expert, leaders in their areas of competence, using a dossier that summarizes in a clear and exhaustive way the analyses carried out, the strategic objectives to be pursued in the solutions and the methodology itself. An element of innovation and strengthening of the methodology has been the particularly attention payed to the mapping of the stakeholders during the initial briefing phase, preliminary to the drafting of the dossier. Therefore, a preferable scenario was outlined on which assessment convergence was verified, that could constitute a strategic element in the decision-making process.

1. INTRODUCTION

Degradation and state of abandon are often the conditions in which modern architectural heritage in Italy is involved. This Heritage – significant in terms of size, heterogeneity and territorial distribution – often is in state of deterioration or abandonment: this is partly due to negligence, but above all due to the already mentioned scarceness of public resources. By this purpose, it is therefore essential to activate and strengthen protection processes specifically as a function of recovery and regeneration actions that generate surplus value. It is known that the *mise en valeur* constitutes the action of increasing the value of an asset in its strictly monetary, market or income, or non-monetary terms, as a function of the components of Total Economic Value – VET in Italian – (Gallerani, Zanni, Viaggi, 2004) and the flow of generated benefits. Both dimensions – monetary and non-monetary – therefore find themselves having to coexist in different forms and relationships; their partly conflicting nature necessitates a synthesis between individual and collective interests and benefits, in order to pursue valorization. Valorization that requires two joint actions: the elimination of physical degradation that preserves the integrity of the asset and a reuse that guarantees its use (Coscia and Curto, 2003).

The identification and verification of the use destinations therefore assume a strategic importance such as to make it necessary to use specific analyzes to predict current or potential demand. Among many techniques to support decision making and scenario forecasting, the application of the *Delphi Method* in the sphere of Cultural Heritage, thanks to its qualitative and quantitative nature, presents research developments and innovative elements, which are illustrated in the following sections.

1.1 Delphi Method

The *Delphi Method* finds its genesis and first field of applicability in the military field (Betz, 2003) and develops in the Fifties of the 20th century within the Operative Research and the debate on the tools of the problem

solving approach and in the application setting of the decision making, in order to allow a panel of experts to discuss - in complete anonymity - about the probabilities of future events and their consequences (Coscia, 2007). The notoriety and diffusion of the method is due to a background of research on the scenario analyzes started since the '50s by the Rand Corporation (Brown *et al.*, 1969; Dalkey, 1969; Fink *et al.*, 1984; Jolson e Rossow, 1971; Milkovich, 1972; Yousuf, 2007; Hasson e Keeney, 2011). The credit of the diffusion of the Method goes to the Dalkey and Helmer 's studies (1963) as well as to the first edition of Linstone and Turoff's essay (1975). Following a relaunch in various scientific communities (Mullen, 2000; Linstone and Turoff, 2002; Rondé, 2003), the technique also saw the alternation of moments of strengthening – in some mathematical-formal aspects or thanks to innovation technology support (De Filippi, Coscia, Guido, 2017), as well as in structural aspects of the process (Grupp e Linstone, 1999; Rowe e Wright, 2011; Coscia, Lazzari, Rubino, 2018) – also thanks to the joint use with other techniques, such as Cross-Impact Analysis, the Analytic Hierarchy Process (Brigato, Coscia, Fregonara, 2010; Bañuls e Turoff, 2011; Turskis, Morkunaite, Kutut, 2017).

The technique, as already stressed, is placed by analysts in the category of scenarios surveys, introduced by RAND Corporation in the '50s (Brown *et al.*, 1969; Dalkey, 1969). Although there is no shared taxonomy on qualitative and quantitative techniques – since there isn't univocal view on the parameters with which to build them - it is still valid as the main reference in the Italian field the dissertation of De Luca (2002). This makes a distinction between qualitative and quantitative methods according on the forecast or non-predictive nature of the scenarios and on the contribution or otherwise of the probabilistic statistics. In brief, *Delphi Method* is based on a structured assessment process by an expert application: it is divided into subsequent steps and involves the use of structured questionnaires reiterated to a panel of experts, interspersed with feedback on the opinions expressed. This technique is also characterized by the anonymity to which the panellists must be kept, while at the same time clearly explaining their expertise.

The versatility of the Delphi Method has also allowed the development of numerous variations in countless settings of application: Ethical Delphi, for example, is tested in the field of Life Science (Millar *et al.*, 2007), while for what concerns the political sphere is intended for the use of the Policy Delphi (De Loe *et al.*, 2016).

«[...] Delphi Method has been applied in a large number of domains including (in alphabetical order) academia, administration, agriculture, automotive, banking, criminal justice, economics, education, environmental studies, finance, health care, housing, insurance, management, real estate, sales, strategic planning, tourism, training transportation, and utilities»¹.

The application to this case study therefore poses itself as a further experimentation of the Delphi methodology to support decision making in an area not yet so investigated, namely that of the enhancement of cultural heritage². The reasoning, conducted by the scientific community on scenario planning analyses, in this context, are emphasized, thanks to a final in-depth analysis – at the conclusion of the Delphi process – on the scenario preferable identified by experts, with detailed information on the feasible actions in relation to the specific case study, which is illustrated in the following section.

2. THE CASE STUDY

The avant-gardes of the '60s and '70s develop a new idea of urban city utopia, incorporated within a single building and able to fit in any position within the urban space. Manifesto of this new current of thought is the Unità Residenziale Est - Ex-Hotel La Serra of Ivrea (Figg. 1-2), designed as a typewriter for appearance and functions, to “re-type” the social spaces and generate new connections and meeting points for the eposedian reality but not only. An idea that will remain only on paper: problems in the construction phase, changes during construction, recent fragmentation and sale of space will radically change the image, condemning the building to a *damnatio memoriae* in more recent years.

2.1 Chronicle of the Unità Residenziale Est

«Questo non è un edificio [...] ma è un sistema urbano: un rione, un quadrivio, un alveare, un portico medievale che

¹ GUPTA U.G., CLARKE R. E., *Theory and applications of Delphi technique: a bibliography (1975-1994)*, in *Technological Forecasting & Social Change*, vol. 53, October 1996, pp. 188-189.

² Some experiments are worthy of note, which, although simulated in the academic context (Debrevi, 2014, Brigato, 2009, Razzano and Soldano, 2005), have identified and analyzed the most controversial technical steps.

Also, the main reference is the master's degree of Dalpiaz, Infortuna (Dalpiaz, Infortuna, 2018).

raccolga tutti i suoni e i percorsi [...] abitativi, mercantili, amministrativi, ricreativi. Non ha quindi una faccia [...], ma ha degli scorci [...], delle vedute e delle predisposizioni al paesaggio, al corpo della città [...]»³.

On the second rebirth of Olivetti, towards the end of the '70s, there is the need to provide the City of Ivrea with new spaces for the community. From this premise develops the project of the two Venetian architects Iginio Cappai (1932-1999) and Pietro Mainardis (1932-2007): an organic building that is not only a functional container, but an urban system, a connected city, incorporated into a structure that contains inside housing cells and services.

The Unità Residenziale Est is conceived as a structural grid that recalls the frame of a typewriter, to which the individual units are connected – as the buttons of the machine – offset on four levels of a single projecting element. These are not categorized according to the type of use, but following the designers' idea to create meeting points in relation to the outside; a network of connections that guarantees the use of the various services by users (Giusti, 2003). The building is located in a border area and since the start of the work will have a troubled life: after just a year after obtaining the building permit, in 1969 the works are interrupted due to the discovery of some ruins of the Roman era. A variation to the original project that integrates these structures will allow the works to start again the following year; this will be followed by a second variant in 1975. No official opening but a progressive one: first the sports facilities, then the residential areas, the restaurant and the bar and finally the rooms for cultural and congress activities such as the concert hall, the dome and the cinema. Commercial spaces will only start after years and will be short-lived.

The variants will overwhelm the project from both a functional and a technological point of view: instead of prefabrication a mixed solution – with traditional techniques – will be preferred. The functional variations will have far more serious repercussions: the housing units, provided for the temporary stay of visiting technicians and intellectuals (Cappai and Mainardis, 1973), are converted into a hotel and then into private residences.

These changes will result in a massive and progressive exclusive and non-inclusive use of spaces, undermining the original idea of *promenade architecturale* and becoming a trigger for marginalization, degradation and state of abandon.

«[...] Scritte vandaliche, lamiere, esfoliazioni, ruggine, corridoi e negozi chiusi da saracinesce, gomma a bolle sollevata e compromessa, la macchina scricchiola,

³ VOLPONI P., *La macchina sociale. Un'architettura-ponte tra fabbrica e città*, in *Architettura. Cronache e storia*, n. 249, 1976, pp. 130-132: 130.

mostrando un degrado diffuso nella quasi totalità dell'edificio»⁴.

The causes of the decline can be traced back to a series of factors: after the definitive closure of the hotel in 2001, the building will be progressively fragmented and sold to private individuals, delineating itself in current functional forms.

A desire to recover the social vocation of the building (2001) by the company Effetto Serra S.p.a., but it will have a short life due to the too high costs of investments in the face of poor profitability; the project failed in 2015 and from now on the fate of the East Residential Unit is marked: a slow decline towards degradation and a state of abandon. Fires and vandalism will eventually lead residents to close parts of the structure. Weak positive signals are recorded only by the swimming pool, which maintains its original vocation, and by the currently expanding sports center.

It is therefore extremely desirable to re-emerge the value and memory component of the complex, together with a hypothesis of coordinated and planned management of the building that considers it as a complex system, a machine in constant evolution.

«Un piano per la sua conservazione che possa promuovere la Serra come organismo unitario, oggetto di design, spazio per la creatività e la socialità, che è parte di una storia sociale e architettonica, eccezionale non solo per la comunità eporediese»⁵.

2.2 Ivrea, industrial city of the 20th century

The will to pass on to posterity the intrinsic universal value of an industrial site like the one of Ivrea, as the result of the vision of an innovative project from an architectural, urban, cultural and social point of view, is the basis of the nomination of *Ivrea, industrial city of the 20th century* for enrollment on the UNESCO World Heritage List. The idea to propose the nomination was in 2008 by the initiative of the Municipality of Ivrea and the Adriano Olivetti Foundation; the project reaches the first important milestone in 2012, with the enrollment of the proposal in the Tentative List – the national propositive list – of UNESCO.

In February 2016, the proposal passed the second completeness check (after the preliminary one in 2015), passing from 2017 to the next evaluation cycle.

The territory affected by the application includes a large area of industries, services and residences (Fig. 3).

Central core of the Core Zone – or Nominated Property –

is Guglielmo Jervis street, around which gravitate all the Olivettian architecture dedicated to production, services to industry and residence, typical of the Adriano Olivetti's experimentations. Around this barycentre the Buffer Zone develops, identified by the structural relationships that exist between the building and the territorial context on which it insists; the area is bounded to the north by the Dora Baltea river, to the south by the railway and to the east by the City of Ivrea.

Considering both the aforementioned critical issues and the analysis of the existing Management System, a Management Plan has been drawn up which provides for strategies aimed at the knowledge, conservation, interpretation and promotion of the site. These strategies are organized through action plans for the short, medium and long term, thanks to a coordinated action of owners, institutions, stakeholders – local, national and international – on five thematic areas: coordination, conservation and knowledge, capacity building, communication and education, fruition. The local community is also expected to participate.

The nomination was finally examined during the 42nd session of the World Heritage Committee and on 1st July 2018 the City of Ivrea became part of the UNESCO World Heritage; however, the Unità Residenziale Est – initially considered on the list – is definitively the great excluded (Coscia and Curto, 2017).

3. METHODOLOGICAL ITER

The Unità Residenziale Est is therefore a case on which to experiment the Delphi Method, since it is in a decision phase in which hypotheses of reuse have been abandoned, but in which it would be absolutely strategic to start an “expert” investigation to outline scenarios of valorization. The choice fell on this approach, thanks also to the studies carried out in the preliminary phase, which highlighted an inseparable relationship between the building and the surrounding territory and the problems previously highlighted.

We proceeded by steps: starting from an initial knowledge, and subsequently through the definition of the elements characterizing the method – objectives, experts and metaprojectual alternatives of intervention – we then analyzed the outputs to identify a preferable scenario and identify guidelines for the future.

3.1 Step I - Knowledge

The knowledge step has developed from a territorial analysis – historical, demographic, socio-economic and tourism – which highlighted how the City of Ivrea, despite the crisis, is trying to find its own identity, starting from initiatives that promote and enhance the territory, through the planning of interventions on an urban scale and stimulating tourism thanks to a rich cultural and event offer.

⁴ GIUSTI M. A., *Ivrea: architettura parlante. Una macchina da scrivere nella città*, in *Ananke*, n. 69, 2013, p. 70.

⁵ *Ibid.*, p.70.



Figure 1 - The building site of the Unità Residenziale Est in a vintage photo
(Reference: Caccia Gherardini, 2016)



Figure 2 - The Unità Residenziale Est today
(Reference: Photo by the Authors, 14.10.2017)



Figure 3 - Ivrea, industrial city of the 20th century
 (Reference: *Processing by the Authors*)

In this phase the mapping of the stakeholders was of fundamental importance; thanks to a series of meetings culminating in the congress held at the Salone dei 2000 in the Officine ICO – which saw the joint participation of the Municipality of Ivrea, the Polytechnic University of Turin and other organizations in the area, such as Confindustria Canavese – it was possible to outline a complete picture of the various stakeholders⁶.

⁶ The conference “Oltre Olivetti. Scenari per il futuro di Ivrea. Il patrimonio come occasione di rigenerazione urbana e di

The transposition of these experiences was merged into the definition of the Delphi dossier (Fig. 4-5) – the initial technical moment of the Method – in which not only the objectives but also the panel of experts were identified, as “evaluators” of the metaprojectual alternatives developed during the Dossier preparation step.

sviluppo” was held in 2017 at the end of the university experience at the Politecnico di Torino, gained in the Atelier “Restauro e Valorizzazione del Patrimonio” organized by Prof. Rocco Curto and by Prof. Lisa Accurti.

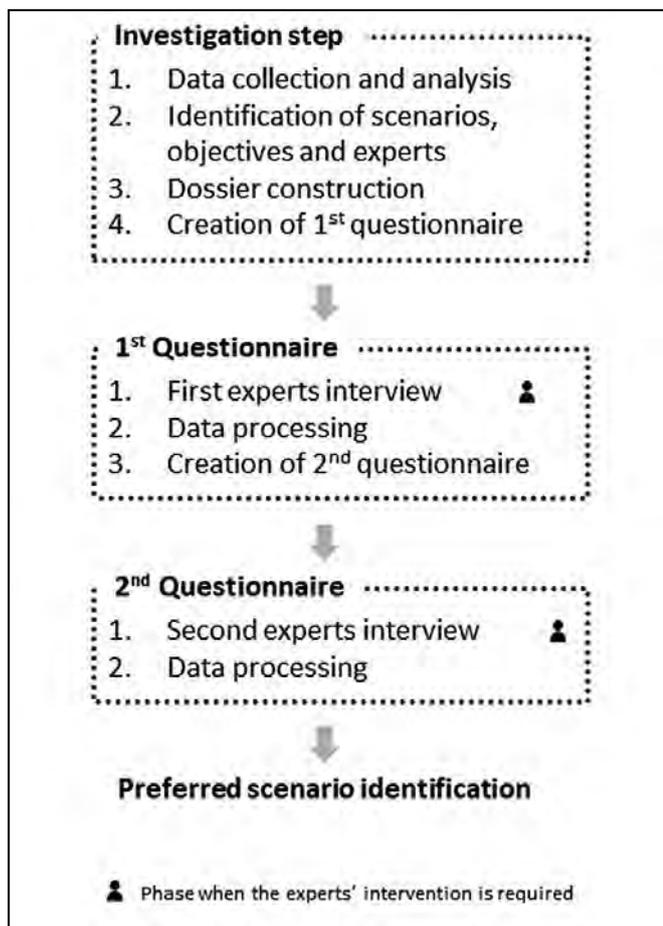


Figure 6 - Procedural steps
(Reference: *Processing by the Authors*)

3.2 Step II - Delphi Method implementation

After defining the dossier, we proceeded with the various procedural steps of the Delphi Method (Fig. 6).

From the publications (Nedeva *et al.*, 1996; Rowe and Wright, 2001; Brigato, Coscia, Fregonara, 2010) it emerges that the selection of experts turns out to be one of the most debated moments of the whole process; recent studies still question the ideal number of panelists to be involved as well as the ways in which to weigh their judgment on the basis of the specific skills of each member.

Emphasizing the expertise of the individual members, seen not as stakeholders, but considered as pure experts – leaders in their areas of expertise – thus minimizing the arbitrariness component⁷.

⁷ To learn more about the criteria used for the selection of the expert panel: ROWE G., WRIGHT G., "Expert opinions in forecasting. The role of Delphi technique" in Armstrong S. (a cura di), *Principles of Forecasting. A Handbook for Researchers and Practitioners*, Springer, Boston 2001, pp. 125-144.

The experts, whose complete anonymity was guaranteed during the interview, were therefore identified in five professional figures:

- an Urbanist, as an expert able to consider the urban impact of the project as well as its inclusion within spatial planning dynamics;
- a Conservative Architect, as an expert able to assess the compatibility of functions in relation to the architectural characteristics of the asset;
- an Economist, as an expert able to assess the feasibility of the intervention at the time of implementation, as well as the sustainability of future management;
- an Event Manager, as a specialist in organizing and managing temporary cultural and commercial events;
- a Found Raiser, as an expert in the sphere of financing local development projects.

Regarding the objectives, five have been identified:

- the Economic feasibility, that is the degree of economic feasibility at the moment of the realization of the restoration/refurbishment intervention and for the future management of the complex;
- Compatibility with the asset, defined as the degree of compatibility of the new functions with the asset;
- Territorial competitiveness, that is the strengthening of the existing supply system, both economic and cultural, through the integration and collaboration between new and existing realities on the territory;
- Social regeneration, to be understood as the capacity of the intervention to trigger urban and social regeneration operations;
- the Processes and synergies, that are the possible repercussions that the intervention will have in terms of participated processes among the population, public institutions and local realities.

The Delphi method applied on the scenario analysis for alternatives of valorization sees to stress this preliminary phase of identification of the intervention concepts, as well as of the construction of the Delphi dossier. It's in this methodological step that the evaluator (then an interviewer) defines the three metaprojective scenarios, through which the experts express their judgment, in relation to the objectives:

- Alternative A (Fig. 7) – or *Ivrea sotterranea* – which involves the overlapping of three types of routes: archaeological, cultural and Olivetti. The intervention is to be considered "low profile", because through a series of actions on the product it is guaranteed the minimum use in terms of security and accessibility (minimum work amount);
- Alternative B (Fig. 8) – or *Lifestyle Design Olivetti* – which involves the overlapping of four types of routes: archaeological, cultural, sports (external) and Olivetti. The project involves some transformations, as besides ensuring partial use in terms of security and accessibility, a partial refunctionalization of unused internal spaces is envisaged (significant work amount).

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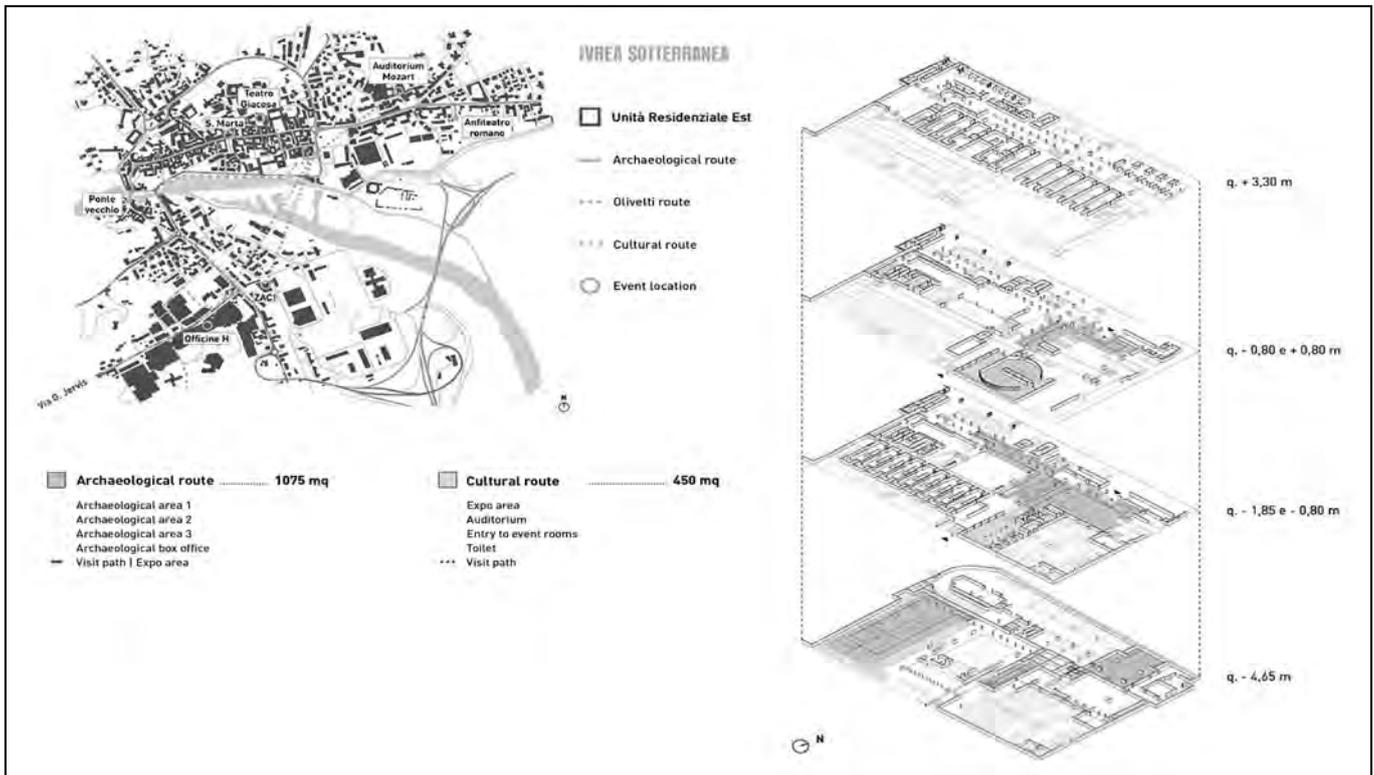


Figure 7 - Alternative A
(Reference: Processing by the Authors)

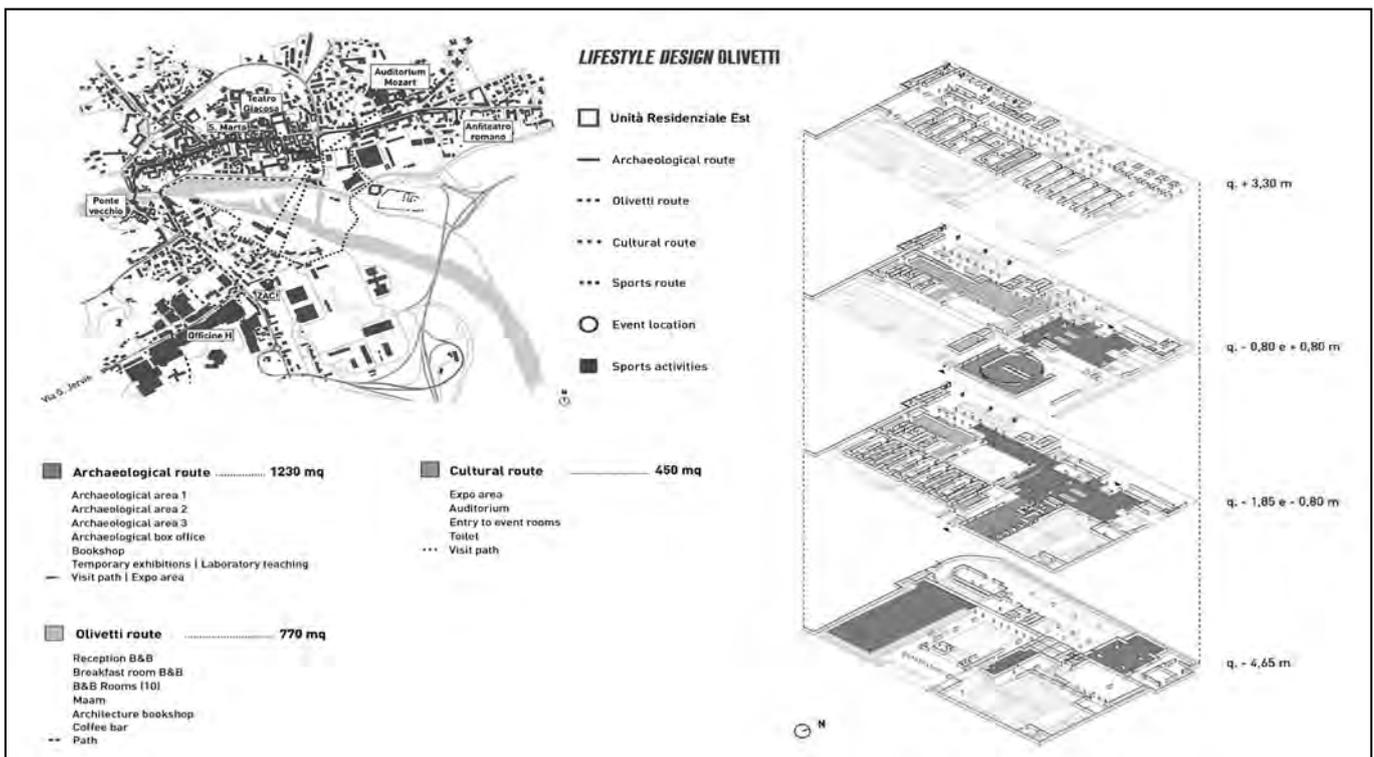


Figure 8 - Alternative B
(Reference: Processing by the Authors)

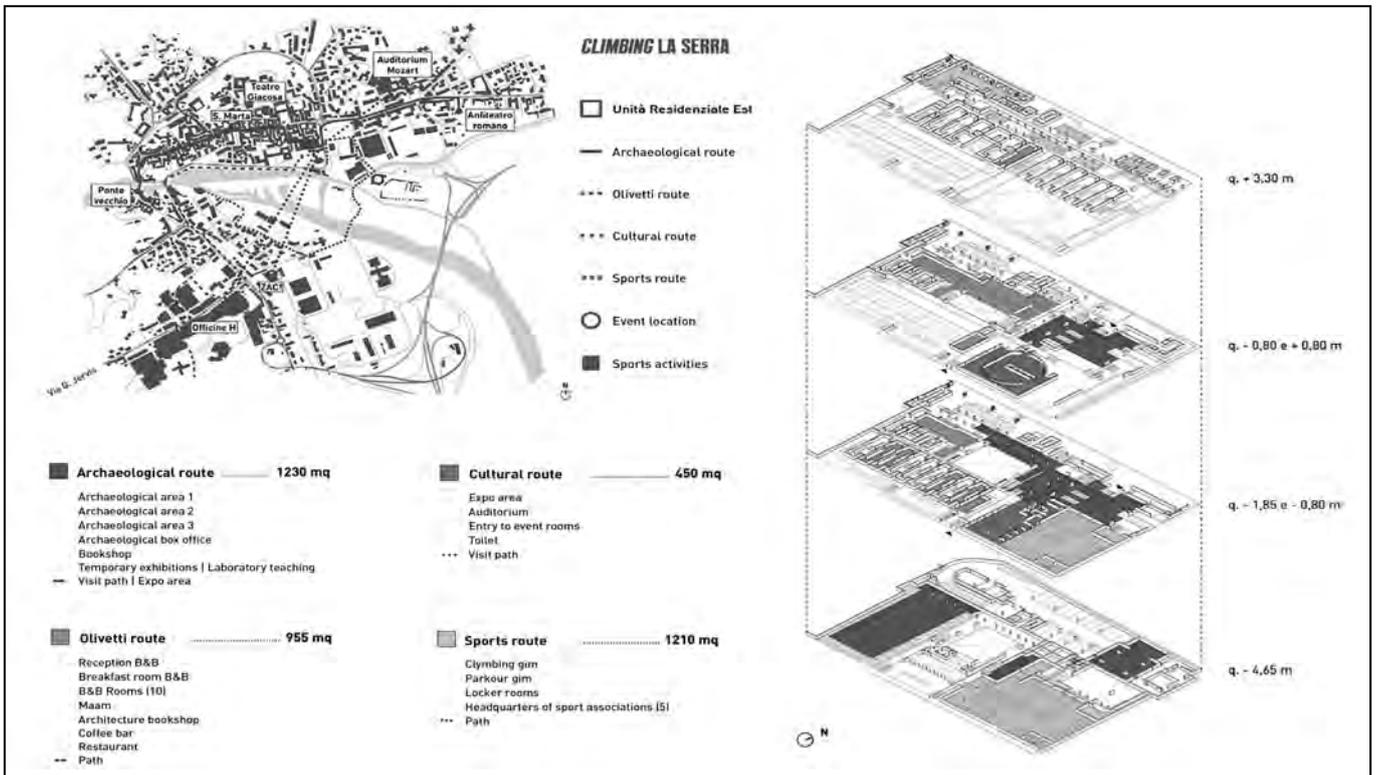


Figure 9 - Alternative C
(Reference: Processing by the Authors)

- Alternative C (Fig. 9) – or *Climbing La Serra* – which involves the overlapping of four types of routes: archaeological, cultural, sports (indoor and outdoor) and Olivetti. The project involves important transformation work, since in addition to guaranteeing complete use in terms of safety and accessibility, the total refurbishment of unused internal spaces is expected (very significant work amount).

3.3 Step III - First round of interviews and outputs

It is specified that in this experimentation the role of the interviewer is intended as a strategic and multi-competitor role: 1) a proactive and “projectual” role in the construction phase of the dossier, 2) a “technical” third-party role in the interviews rounds and in the case description during the interview (in the face of questions from the experts explaining the method, case, elements and data of the dossier), 3) a role of “rapporteur” of the interviews, 4) a role of data analyst, in the phase detection of judgments and weights and data processing between rounds and the other.

The first round of interviews protracted over a period of about a month, due to the need to make contact and organize the first meeting with the five panel members. The interviews were then made using the

mentioned dossier, as well as the summary tables of the judgments and the forms to be completed in tabular form. These cards consist of four tables for each expert (Fig. 10): three of these (Fig. 10, left column), linking the objectives that have been set with the single design alternative, allow to evaluate the single degree of correspondence of each alternative with respect to the individual objectives, through the use of quantitative judgments that each expert attributes through a variable parameter in a range from 1 to 5. The fourth table (Fig. 10, right column) relates the competence of the experts with respect to each objective, through a qualitative judgment that each panelist assigns to his or her own competences, on a scale that goes from “nothing” to “very competent”; in a subsequent data processing phase it will be converted into a quantity. Finally, the document is completed by a special space for the insertion of further information such as: duration of the interview, degree of attention of the interviewed – attributed on a scale from “few” to “very good” – as well as possible observations of the expert if they are not can only be expressed through evaluation.

Each interview was structured in two phases:

- the first one, considering the initial phase and corresponding to the moment in which the case is presented to the expert through the dossier, in order

Figure 10 - Fac-simile form of the 1st round of interview
(Reference: Processing by the Authors)

for the panellist to acquire the information for the subsequent phase of completing the questionnaire. At the end of this phase the interviewed has the possibility to express doubts or uncertainties as well as to ask questions, in order to achieve a basic level of knowledge of the case study.

- the second one, which consists in submitting to the interviewed the forms that they can be compiled, evaluating future scenarios and their own and others' competences with respect to the objectives; in this step the expert makes use of the summary tables of the judgments and as necessary the dossier.

The interviews lasted between 40' and 90', in relation to the knowledge of the Delphi methodology and the case study, from which the level of depth of explanation in the initial phase was consequently dependent. The level of attention of the interviewees was finally included in a range between the good and the excellent.

The phase of data processing expunged from the first round of interviews involves the use of basic statistical techniques and central trend indicators (Fig. 11).

In particular, the O_j weight matrices, the V_{ij} vectors of the subjective evaluations and V'_{ij} modified vectors of votes were constructed, where “j” refers to the prefixed objectives and “i” to the metaprojectual alternatives. Through this procedure the outputs of the first round of interviews concerning the three alternatives are obtained; the threshold of 2.50 was then adopted as the

achievement of the sufficiency quota, while an assessment equal to or higher than 3.50 indicates the achievement of a good degree of correspondence.

Notice how almost all the objectives reach the threshold of sufficiency; the most problematic objective has turned out to be the objective 1 – “Economic feasibility”, especially for the Alternative B. Some objectives also more than satisfactorily exceed the satisfaction threshold, specifically the objectives 2 and 3, respectively “Compatibility with the asset” and “Territorial competitiveness”. Regarding the objective 4 – “Social regeneration”, the Alternative C deviates from the evaluations of the other two metaprojectual hypotheses, obtaining a superior evaluation of about one point with respect to the score of the other two alternatives.

Finally, objective 5 – “Processuality and synergies” records a constant score, with means for all the three alternatives that stand in a range of 3 to 4. From the comparison of the mean of the objectives with respect to the alternatives, it can be seen instead how these present non-homogeneous values. The alternative A reaches the maximum value of the means in the objective “Compatibility with the asset”; this value is also maximum when compared to the other scenarios. The minimum value is given by the “Economic feasibility”, which does not reach the sufficiency threshold in the Alternative B. Alternative C presents more positive values in “Territorial competitiveness” and in “Social regeneration”; these

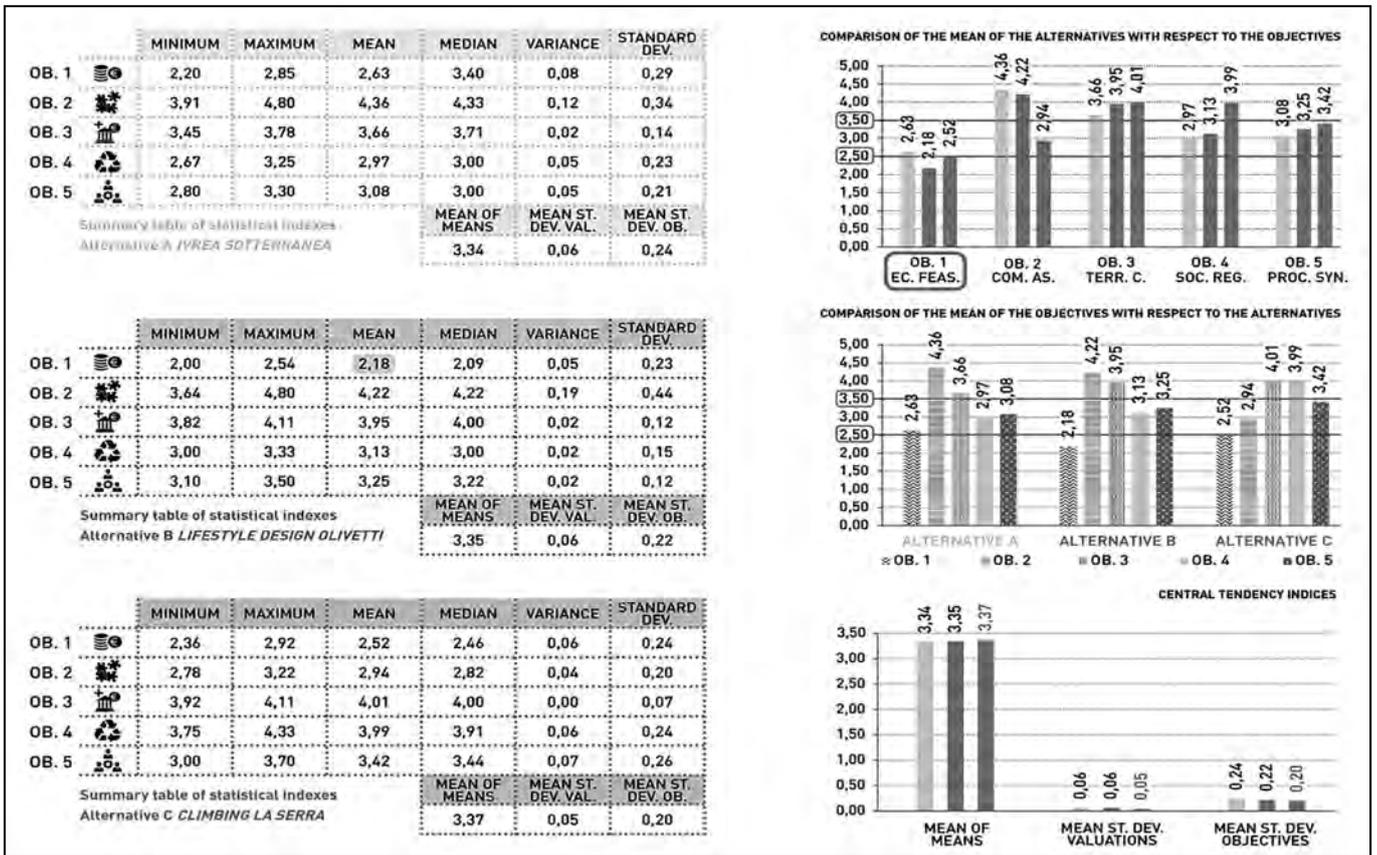


Figure 11 - First round of interviews output (Reference: Processing by the Authors)

values achieve the best result, if compared to the other two metaprojectual alternatives.

Once this data processing phase is completed, three central tendency indices (those most frequently used in literature) are calculated on the five objectives, in order to guarantee greater objectivity: the mean of the means, the mean of the standard deviations of the evaluations and the mean of the standard deviations of the objectives. The first allows to draw up a ranking by merit and to directly compare the three scenarios; the other two make it possible to evaluate the convergence of panel opinions. A value close to 0 indicates a greater degree of homogeneity as well as the concordance of the judgments.

The elaboration of the first round of interviews ends with the drafting of a general and timely ranking for each of the alternatives, based on merit and homogeneity of the judgments.

The ranking organized with respect to the mean of the means sees in the first position the Alternative C *Climbing La Serra* with a mean of 3.37. In second place we find the Alternative B *Lifestyle design Olivetti* with a 3.35 mean. In the last position, instead, there is the Alternative A *Ivrea sotterranea*, with a value of 3.34.

As far as the convergence of judgments is concerned, a standard deviation of 0.20 confirms the Alternative C as the preferred scenario. The other two alternatives keep the same ranking and are separated by a minimum difference, respectively Alternative B with 0.22 and Alternative A with 0.24.

It can be said that the first round of interviews has reported satisfactory results, specifically on the convergence of the opinions of Alternative C. However, considering the minimum gap between the three alternatives, we decided to further investigate the survey by making a subsequent second round of interviews.

In all the rounds, to analyse the level of consensus, that is the "convergence of the judgments", the median of the scores were considered (Fig. 12), and the means weighed as "mean of the means" to determine the consensus. The level of convergence, in fact, measured with the central tendency indices, is not based on the mean, on which the extreme scores, which are less appropriate for determining the presence of consensus within the groups, have too much impact.

In the literature for cases in which opinions are strongly divergent, a third round takes place, aimed at reducing the values of the standard deviation on the convergence of

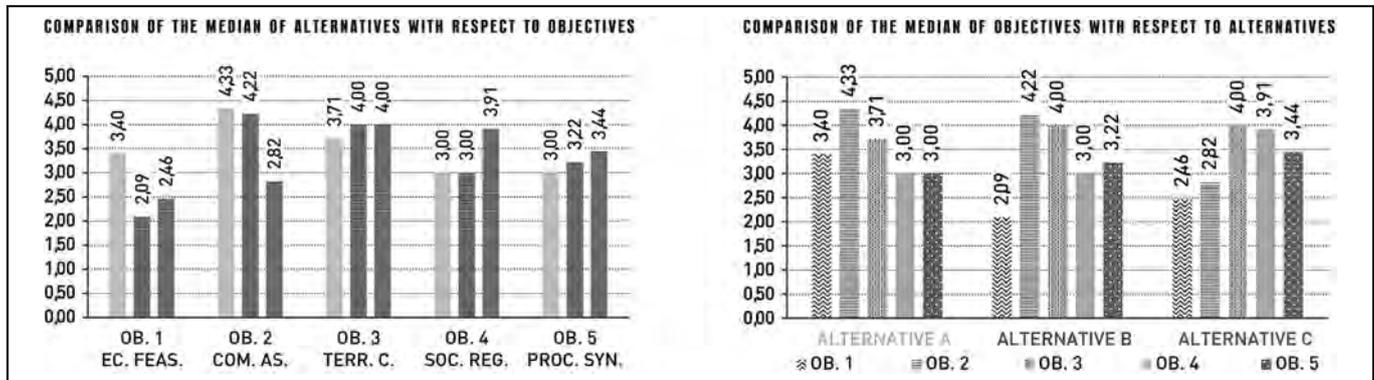


Figure 12 - Comparison of medians grouped by objectives and by first round of interviews (Reference: Processing by the Authors)

judgments. In the case of La Serra, where already in the first round the opinions seem to converge towards the scenario C, phase IV was instrumental to test and verify two phenomena that the technique brings out: 1) the real “flattening” of the experts’ judgments (phenomenon of the “cross influence” of judgments; 2) the factor “incremental knowledge” and of approaching individual positions – *l’iteration avec retroaction controlée* (Dalkey, Brown, Cochran, 1974) –.

The second round allows the interviewees the possibility to re-assign the scores and the judgment based on the reading of the results of the first round, confirming the values or correcting them thanks to the support of further information and reflections, either individually or through the reading of the judgments of the other experts.

3.4 Step IV - Second round of interviews and outputs

The second round of interviews lasted for about three weeks, necessary to recontact and organize the meetings with the five members of the panel. In this phase the interviews were carried out through the use of the reports of the first round, which reported the individual judgments, weighted according to skills and not, the new assessments of the three expert scenarios, included in a range from 1 to 5, and possible motivations for the modification or confirmation of the previous judgment. In the new tabs (Fig. 13) a special space was also provided for the notes and the duration of the interview, for the degree of attention shown and remembrance of the previous round, both attributed on a scale from “few” to “very good”. The experts were also provided with charts and summary tables showing the results of the first round, and the dossier. The interviews were conducted in three distinct phases:

- the first one, as brief summary of the peculiarities of the case study, with the dossier as a *memorandum*. The synthesis capability was fundamental in this phase, in order to stimulate the attention of the expert involved on the basis of subsequent questions;

- the second one, which summarizes the results obtained from the first cycle of interviews with graphs and supporting tables, with the aim of outlining a clear and effective synthesis;
- the third one, in which the grids to be filled out are administered, presenting the observations of the other experts to the interviewee.

The interviews lasted between 15’ and 25’, in relation to the goodness of the memory of the first meeting. In this second round, while consolidating the minimum distances between the three alternatives and therefore a flattering of the mean of means on all three alternatives (as emerged in the first round), the heterogeneous judgments have increased the score of the Alternative C and have further contained standard deviations and the mean of standard deviations of judgements and objectives (Fig. 14, right column).

The O_j matrices of the weights remain unchanged, while the new evaluations are substituted within the V_{ij} vectors of the subjective evaluations from which follows the new calculation of the V'_{ij} modified vectors of votes, where “j” refers to the prefixed objectives and “i” to the metaprojectual alternatives.

Similarly to the first round, the threshold of 2.50 is maintained as the achievement of the sufficiency, while an assessment equal to or greater than 3.50 indicates the achievement of a good degree of compliance.

Notice how almost all the objectives reach the threshold of sufficiency, and how some attest or exceed the good level of satisfaction, in particular the objectives related to the “Compatibility with the asset” – except for the Alternative C – and to “Territorial competitiveness” – in particular for Alternative A and C, which are sufficiently homogeneous.

“Economic feasibility” is again identified as a weak point of all three alternatives, with rather constant averages and low values. Regarding the “Social regeneration”, it registers a positive delta of about one point from the Alternative C compared to the others. Finally, as regards the “Process and synergies”, the average of the



EXPERT *n*
CORRESPONDING PROFESSIONAL FIGURE

ALTERNATIVE A. <i>VIREA SOTTERRANEA</i>		1 st round Judgment	Judgment weighted according to skills	New judgment	Reason
	OBJECTIVE 1 Economic feasibility				
	OBJECTIVE 2 Compatibility with the asset				
	OBJECTIVE 3 Territorial competitiveness				
	OBJECTIVE 4 Social regeneration				
	OBJECTIVE 5 Processes and synergies				

ALTERNATIVE B. <i>LIFESTYLE DESIGN OLIVETTI</i>		1 st round Judgment	Judgment weighted according to skills	New judgment	Reason
	OBJECTIVE 1 Economic feasibility				
	OBJECTIVE 2 Compatibility with the asset				
	OBJECTIVE 3 Territorial competitiveness				
	OBJECTIVE 4 Social regeneration				
	OBJECTIVE 5 Processes and synergies				

ALTERNATIVE C. <i>CLIMBING LA SERRA</i>		1 st round Judgment	Judgment weighted according to skills	New judgment	Reason
	OBJECTIVE 1 Economic feasibility				
	OBJECTIVE 2 Compatibility with the asset				
	OBJECTIVE 3 Territorial competitiveness				
	OBJECTIVE 4 Social regeneration				
	OBJECTIVE 5 Processes and synergies				

Degree of interest: _____

Case study remembrance: _____

Duration: _____

Figure 13 - Fac-simile form of the 2nd round of interview
(Reference: Processing by the Authors)

alternatives remain constant, settling in a range from 3 to 4, thus recording good results for the Alternative B and C. Comparing the means of the objectives with respect to the alternatives, these do not present particularly homogeneous values. Alternative A reaches the maximum value of the means in

the “Compatibility with the asset”, followed by the “Territorial competitiveness”; the remaining objectives are sufficient, with the exception of “Economic feasibility”. Alternative B also records the maximum and minimum value respectively “Compatibility with the asset” and

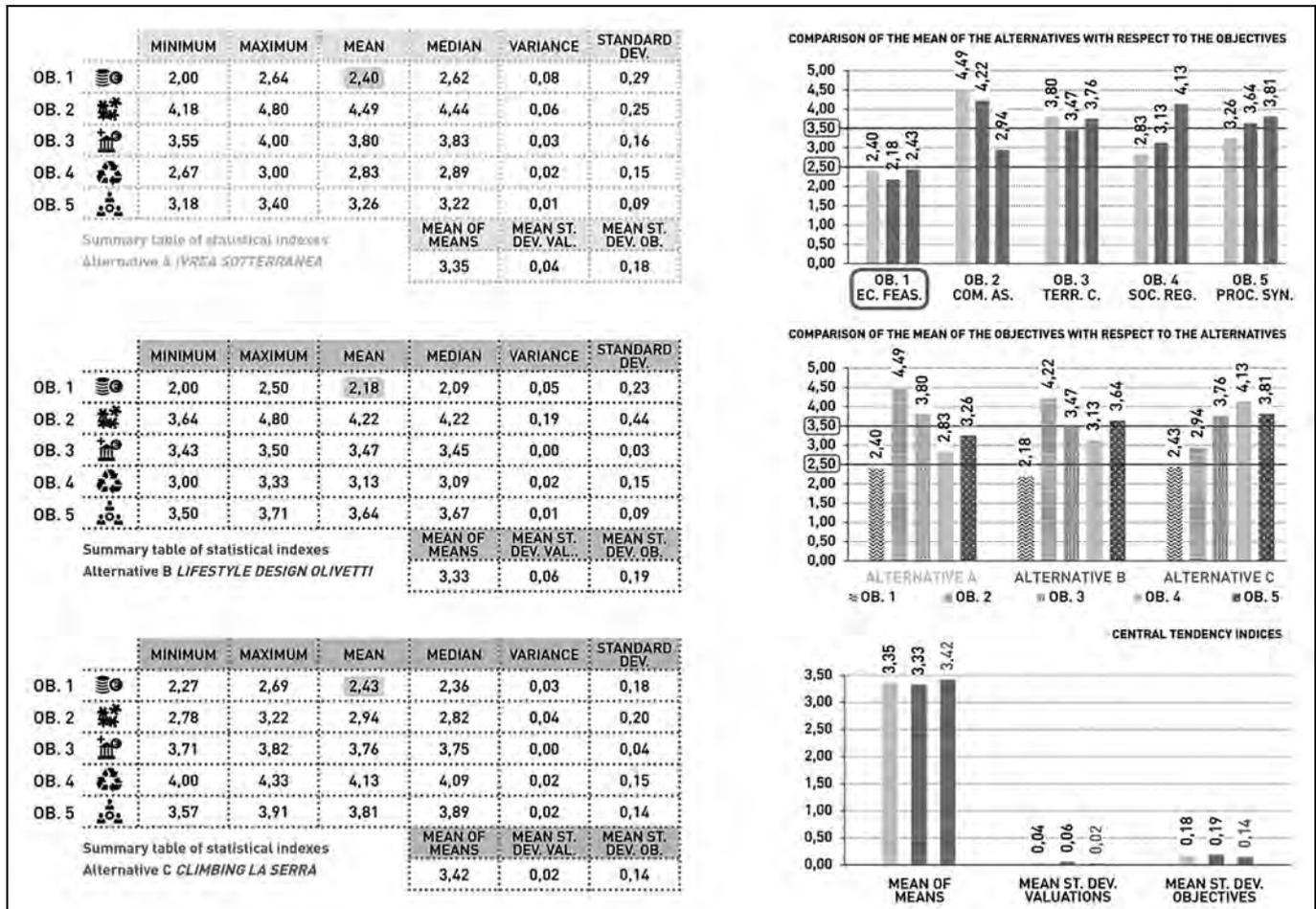


Figure 14 - Second round of interviews output (Reference: Processing by the Authors)

“Economic feasibility”; good evaluations are indicated for the “Social regeneration” and the “Process and synergy”. The Alternative C, however, although presenting a lower value regarding the “Compatibility with the asset”, signals rather positive values regarding “Territorial competitiveness” and “Social regeneration”. The same “Process and synergies” shows the highest value of the three alternatives.

At the end of this second phase of data processing and with a view to drawing up rankings both for merit and for the convergence of expert evaluations/judgments, the three central trend indices on the five objectives are calculated and weighted again, in order to guarantee greater objectivity: the mean of means, the mean of standard deviations of assessments and the mean of standard deviations of targets. As for the first round of interviews, a value close to 0 for the means of standard deviation indicates a greater degree of homogeneity as well as the lower dispersion of judgments. As for the first round, the median and mean of means were analyzed, again according to the classification of the first round:

(a) strong consensus for objectives and/or alternatives (Mdn ≥ 4); (b) good or moderate consent for objectives and/or alternatives (Mdn < 4 and ≥ 2.5); (c) weak consent or no consent (Mdn < 2.5). The minimum gap between the three alternatives is now (Fig. 14, right column): Alternative A with 3.35, Alternative B with 3.33 and Alternative with C 3.42).

The second round outputs lead to the final ranking, general and timely for each alternative, based on merit and homogeneity of the judgments.

The merit ranking based on the mean of the means sees confirmed in the first position the Alternative C *Climbing La Serra* with an average of 3.42. In second place we find the Alternative A *Ivrea sotterranea* with a mean of 3.35. Lastly, the Alternative B *Lifestyle design Olivetti*, with a mean of 3.33. In addition to a general flattening of the results already seen previously in the first round and a slight departure from Alternative C, it can be noted the reversal in the classification of Alternative A and B.

Regarding judgments convergence, the means of

standard deviation tend to approximate closer to 0 with respect to the first round, delineating a homogeneity of the same ones that reconfirms the Alternative C *Climbing La Serra* in the first position, with a standard deviation of 0.14, and that reverses, in a manner consistent with the opinions of panel members, the Alternative A *Ivrea sotterranea* – with a value of 0.18 – and the Alternative B *Lifestyle design Olivetti* – with a value of 0.19. This inversion can find a reason in the willingness of some experts to align their own assessment with that of the other panelists.

The second round of interviews therefore registered a flattening of the values, a good convergence of the judgments with respect to the three metaprojectual alternatives, as well as allowing greater differentiation with respect to the first two scenarios in the ranking. Since no further interviews are necessary, the procedure is to be considered completed.

Regarding the alternatives, the Method stress the phase of defining the scenarios and clearly indicate the winning alternative. Furthermore, the detailed analysis of the assessments by objectives also revealed useful aspects for the planning and management in-depth analysis of the winning scenario.

4. PREFERABLE SCENARIO AND GUIDELINES

Based on previous analyzes, the preferable scenario is therefore the Alternative C *Climbing La Serra*.

The alternative concept, consisting of the strengthening of the sports component inside the building through the inclusion of an indoor sports climbing gym, was judged by the experts in a generally positive manner, also for its feasibility, as a generator of certain management revenue. Consequently, it was necessary to conceive a priori, for such a “winning” and “convincing” scenario, a univocal and homogeneous management model among the various participating stakeholders inside the Unità Residenziale Est, with the clear identification of a directorial management and administrative level, as indispensable precondition for the success of the operation.

4.1 The in-dept project: Climbing La Serra

On the basis of functional concepts and references, the in-dept project was developed, paying particular attention to the conversion of the internal spaces of the ex cinema, where the installation of the new indoor climbing gym called *La Serra Climbing* was planned (Fig. 14).

The conversion of the cavea of the ex cinema is planned, redesigned to accommodate the new climbing walls to be placed along the three perimeter walls of the hall. At the center of the environment there is the creation of a vertical element for climbing, with a dual function: sports for local users and technical-logistics, as a hollow element

that lends itself to the storage of various tools and materials.

Part of the room is also intended for the performance of the parkour discipline, inserted as already practiced on the various staggered levels of the structure; in this way we want to ensure that this practice takes place in a perfectly safe environment.

The access to the structure is also redesigned, favoring openings towards the gardens; in order to guarantee minimal natural lighting, it is also envisaged the creation - on the same front - of some windows that allow visibility of the various activities from the outside. On the outside the idea of the typewriter is accentuated, through the relationship established with the “keys” of the typewriter and the “hammers” that make up the writing *Climbing* on the south façade.

It is also planned to establish a direct connection to both the swimming pool and the adjacent gym, with the idea to creating a sports center as a new reference point for the population not only of Ivrea, but of the whole Eorediese.

4.2 The Management model

Considering the complexity and the current fragmentation of the building, we have therefore tried to define a management model (Fig. 15) that, in accordance to the structure of the property, could dictate some ideal guidelines for the management of the individual functions contemplated in the selected scenario.

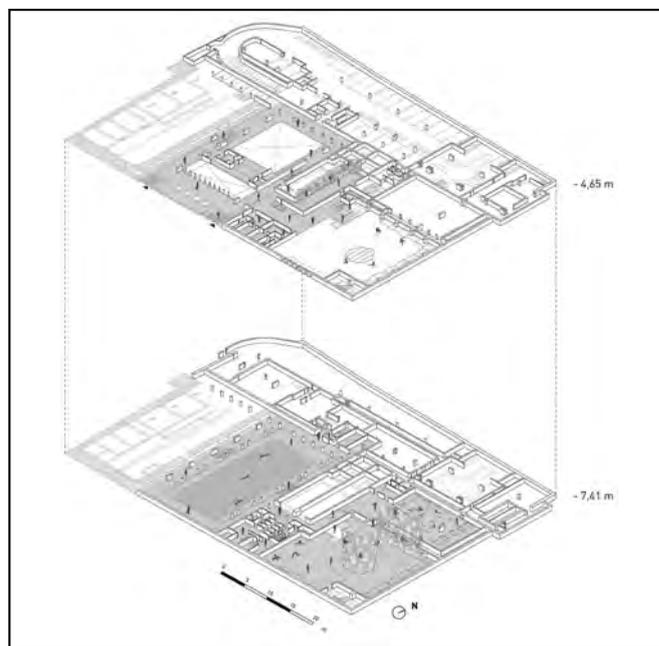


Figure 15 - The Sports centre
(Reference: Processing by the Authors)

On the basis of the current properties of the rooms and on the potential of the spaces affected by the intervention (currently on sale), we proceeded to hypothesize their subdivision by type of route, and in particular:

- for the *Archaeological route*, owned by the State as regards the archaeological areas and the Municipality – which acts through the Guelpa Foundation as regards the museum and the bookshop – it is assumed complete management by the latter, as extension of the visit to the Pier Alessandro Garda Civic Museum in Ivrea;
- for the *Cultural route*, whose ownership of the dome is currently the Municipality and of which it remains also for the scenario, it is assumed the management of the same and of the pertinence spaces by various private citizens, such as cultural associations;
- for the *Olivetti route*, which is made up of several functional units to which different owners and management subjects correspond, we hypothesized: the bed and breakfast, owned by private citizens, in direct management of the same; the restaurant, owned by private citizens, managed by other private entities that may or may not coincide with the owners; the coffee bar, owned by the Municipality acting through the Guelpa Foundation, under management – with renting of space – to some cooperatives; the spaces of the Maam and of the relative bookshop, owned by the Municipality that always acts through the Guelpa Foundation, under management – free of use of museum assets and services – to the Adriano Olivetti Foundation;
- for the *Sports route*, instead, the property of the

Municipality, which acts through the Guelpa Foundation, is both for the indoor climbing gym and for the areas set up for sports associations, with the management of the first by private citizens through leases, and the latter by sports associations through the rotation of the spaces themselves, that are to rent.

Finally, it is considered necessary an overall direction of the preliminary investigation and of the entire process led by the Municipality of Ivrea, which in turn delegates to a team, specifically set up by both internal and professional bodies, the management of the activities envisaged in the scenario.

For this coordination the condominium logic, typically aimed at interlocution between owners, does not seem sufficient to coordinate all the figures and skills listed here. More effective could be to identify a legal entity different from the legal entity condominium, such as temporary purpose associations (ats), consortia or associations, since it is management of activities. Usually the condominium is responsible for the deliberations related to the maintenance of the common parts, while the entrepreneurial activities that take place in these parts, which are entrusted in management to a group of subjects, must be coordinated with a consortium or company logic.

5. CONCLUSION

In conclusion, the traditional approach to the Delphi method has proved to be essential and effective for identifying a preferable scenario, thanks to the high quality of the data, the choice of the expert panel and the structured drafting of the dossier. It can therefore be deduced that an application of the method in the field of Cultural Heritage for the purpose of valorisation may prove to be an effective tool to support decision making. Moreover, this experimentation, having also incorporated the evaluation weighed by the experts on the degree of achievement of the feasibility requirements by the scenarios, constitutes a preliminary nodal moment and a stress test preliminary to subsequent analyzes and feasibility checks of the preferable scenario.

Considered then the case study and the results achieved, potential application developments could include the use of joint techniques, such as the Analytic Hierarchy Process, in the scoring phase or in the preliminary one, to support the identification and evaluation of the merits of the objectives of metaprojectual alternatives.

Finally, given the recent inclusion of Ivrea in the list of World Heritage Sites, further opportunities for the development of the building enhancement prospects are not excluded in the future, which would provide new elements for a progressive updating of the factors instrumental to the delineation process. scenarios, the results of the procedure and the resulting decisions.

USE	PROPERTY	MANAGEMENT
Archaeological route		
Archaeological areas	State property	Municipality
Museum + Bookshop	Municipality (Guelpa Foundation)	Municipality
Cultural route		
Dome	Municipality	Private citizens (cooperatives)
Olivetti route		
Bed and Breakfast	Soggetti privati	Private citizens
Restaurant	Soggetti privati	Private citizens
Coffee bar	Municipality (Guelpa Foundation)	Private citizens (cooperatives)
Maam + bookshop	Municipality (Guelpa Foundation)	Adriano Olivetti Foundation
Sports route		
Climbing gym	Municipality (Guelpa Foundation)	Private citizens
Sport associations	Municipality (Guelpa Foundation)	Sport associations

Figure 16 - Management model
(Reference: Processing by the Authors)

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Authors contribution

The present writing is to be attributed in equal parts to all the authors.

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