

# Hangar Ticinum

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# Conserving Our Past, Creating Our Future: Hangar Ticinum

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# Abstract

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**Keywords:** rehabilitation, modern heritage, adaptive reuse, decision-making, cultural heritage, intangible values, character, identity, conservation, memory, framework

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Rehabilitation of modern heritage is becoming increasingly important, making possible efficient contemporary use thus protecting these buildings for both present and future generations as well as meeting the urgent need for sustainable alternatives to building. History is a continuum and therefore more recent heritage is no more historical than ancient heritage, all describe our past and societies evolution, giving people a sense of place and creating the unique identity of a community. However, existing theories of conservation and adaptation are not succeeding in providing a framework or establishing a strategy for determining the appropriate and sensitive rehabilitation of these 19th and 20th century buildings. Specifically, the need for theories of Modern Heritage to go beyond the focus on individual “monuments” and the physical form of buildings, and give more importance to the incorporation of both tangible and intangible heritage, particularly memory of the past and the spirit of the building into its studies.

The topic of rehabilitation or reuse of a building is a very complex process as in order to give a new contemporary value to the building inherently implies losing certain aspects from the original. However, taste or personal opinion should not influence perception of the building or how it should be dealt with. Instead an objective study into the exploration of the cultural, historical and architectural values of each specific building that is undergoing any form of rehabilitation is imperative. Only in this way can we understand and uncover its most fundamental qualities and purpose of existence, and what are the features that should be retained.

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Using the “Idroscalo di Pavia” as case study, this master thesis aims to investigate the tangible and intangible values that are most significant in defining the building’s historic character, in order to create a rating system that will serve in evaluating and critically analysing as objectively as possible the proposals that have been submitted for the recent competition to rehabilitate it. The rating system will also consider and discuss the different opinions held by the different stakeholders; at the level of the people, the experts, and the authorities.

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*“As an architect you design for the present, with an awareness of the past, for a future which is essentially unknown.” — (Foster, 2007)*

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# Table of Contents

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00	<b>INTRODUCTION</b>	
	Field of Interest & Aims	17
	Methodology	19
	Limits & Opportunities	20
01	<b>REHABILITATION</b>	
	Terminology	25
	Architectural Rehabilitation	27
	Adaptive Reuse	32
	Brief Theoretical Development	34
	Modern Heritage & its Intangible Qualities	37
	Rehabilitation as an Expression of our Time	41

02	<b>TYPOLOGIES</b>	
	Demystifying the Meaning of Character	47
	Heritage Value Typologies	49

03	<b>CASE STUDY</b>	
	Hangar Ticinum	63
	City of Pavia	66
	Idroscalo di Pavia	77
	Giuseppe Pagano	93
	Competition Brief	97
	Competition Results	102
	Terminal Pagano Design Project	114

04	<b>FRAMEWORK</b>	
	Value-Based Rehabilitation Decision Making Framework	143
	Definition of Stakeholders & Decision Makers	148
	Needs of the Stakeholders & Ambitions of the District	154
	Condition Assessment	158
	Significance Assessment	166

05	<b>EVALUATION PROCESS</b>	
	Developing the Evaluation Process	189
	Rating of Projects	196



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# Field of Interest & Research Aims

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The act of remodelling and adapting existing buildings is not a new phenomenon as throughout history, different buildings have been used for different functions. From the beginning of the 19th century, these ideas began to be formulated and established theoretically as people became more conscious about architectural conservation for heritage buildings.

From the 1960s and 1970s onwards there has been a growing concern for the environment and in finding strategies that support global climate protection (Cantell, 2005). It is from this point onwards that the topic of adaptive reuse has taken on a new role, positioned within the central ground of architectural practice. The task of adaptive reuse of heritage buildings breathes fresh life into valuable structures, extending the site's durability and usage, without damaging its historic character. It is this last part, the preservation of the “historic character”, which poses difficult challenges since there are many cultural, historical and architectural values in the process which need to be considered, yet different factors and stakeholders are many times in conflict with the preservation of these values.

There has been a recent and important change in attitude in the field of rehabilitation of modern built heritage, prompting professionals and researchers to consider more than simply preserving the physical aspects of the buildings, but also the semantic aspects of the architectural heritage. This is a step in the right direction but there is still a lot more research and discussion needed in this field since there is still no thorough and comprehensive research on these intangible aspects or revised strategies and rules for reuse.

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This ambiguity puts a lot of responsibility as well as authority on the architect, urbanist, municipality or whoever is in charge of the rehabilitation project to decide the fate of a particular heritage building. If you zoom out to the effects of this, it means these figures are essentially influencing and altering the heritage that is passed on to future generations based on what their particular opinion or values are.

This thesis is motivated by the idea the built heritage that we pass on, is one of our most important cultural assets and contributes to the collective memories, providing clues to our past and creating a sense of identity and pride in people. Each building needs to be considered independently, holistically identifying the many factors that will influence the decision-making and future of that building (Misirlisoy and Gunce 2016). Therefore, the objective of this thesis is to provide a comprehensive review of the factors that need to be considered when rehabilitating a modern heritage building, including the intangible and tangible values, in order to guarantee the conservation of the most important elements that give life to its historical character. As it is impossible for everything to be conserved in a rehabilitation project, for each building, the most important factors and values need to be selected to provide guidance for the decision makers.

The thesis will use a case study of the Pavia's now abandoned seaplane base, the "Idroscalo", completed in 1926 by Giuseppe Pagano. The commune of Pavia along with TerraViva Competitions, recently launched an international competition to restore its importance and bring life back to the building and centrality to the river. The competition selected its winners accordingly to those projects that proposed design interventions able to enrich the historical character of the original project whilst successfully giving the building its long-awaited rebirth and providing a valuable new resource to the local community.

This case study highlights the variety of ways in which participants have interpreted the term "rehabilitation", and thus the meaning of preserving the "historical character" for a particular building. Moreover it allows for the examination and analysis of the selected winners, reflecting on the current way in which rehabilitation competitions are being evaluated. This master thesis seeks to find whether a more objective strategy for rehabilitation is possible, contributing to the research within the framework of the rehabilitation of the Italian architectural heritage.

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# Methodology

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The first chapter introduces the term "rehabilitation" which is the focus of this thesis. There will be a brief explanation of the theoretical development of this concept, with particular attention to recent developments of theory specific for the modern heritage. Here, I will explore why the theories more focused on the rehabilitation of modern heritage need different approaches than the way historical heritage is dealt with.

The second chapter focuses on demystifying the meaning of conserving the "character" of a heritage building by identifying all the intangible and tangible factors that represent its historical, architectural and cultural values.

The third part of the thesis introduces the case study of the recently launched competition named "Hangar Ticinum", by the commune of Pavia along with TerraViva Competitions. Background on the context, history of the building, the current condition, the stakeholders and the aim of the project and evaluation criteria are explored. This part is followed by the presentation of a selection of the winners, as well as my own design proposal for the rehabilitation of the hangar. It will reveal the diversity of interpretations among the participants, as well as the judges, in how they understand the notion of preserving the historical character of the building.

Following from this, the fourth part of the thesis questions whether there should be so much subjectivity in the interpretation of character and values of heritage. A framework is suggested and applied to the case study, the "Idroscalo", identifying the steps affecting the decision-making process. It is important that each rehabilitation project undergoes its own independent study following the same procedure, as each project has different factors to consider. For the intangible values, I have conducted my own research with the locals of Pavia in order to understand the identity, spirit and emotional values on both an individual and collective basis.

The final chapter draws on this information and processes it to select, as objectively as possible, the most important values that need to be considered in the rehabilitation of the "Idroscalo", creating a rating system that can then be used to evaluate and analyse the projects presented previously.



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# Limits & Opportunities

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The creation of a framework is necessary in order to gather the necessary information that will allow the decision makers to make a more informed judgement regarding the design of the intervention. In the case of the Idroscalo rehabilitation competition, the decision makers are in fact the members of the jury who selected the winning projects. Decision makers are powerful and the outcomes of their decisions can many times depend on their particular values or aims.

Rehabilitation interventions are composed of additions, subtractions and remaining elements. The decision regarding which of these three elements should be applied, and to what features or parts of the heritage building, should not be arbitrary. For this reason a framework is needed; it guarantees that the important factors are identified and allows the development of an evaluation process in which the aim is to find the best compromise between the different requirements. For this evaluation process a radar chart will be used to easily compare the different alternative projects submitted to the competition over the selected multiple common requirements.

The requirements are informed by looking at the regulations of the building, completing a conditions assessment, exploring the needs and goals of the different stakeholders and district and finally, a significance assessment. The evaluation process can be carried out in a more thorough way using a long list of criteria, or, as I have done for the purpose of this thesis to simplify the evaluation process, consider only a limited set of criteria. In this case, the different actors would have to come together to analyse and weigh up the most important ones.

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Another important point to consider in order to further extend and improve the evaluation process for future cases is the weighting of each of these criteria. The thesis will take each axis of the radar chart as having the same weight, however in reality, this is most likely not the case. Each set of criteria or the opinion of a certain stakeholder in comparison to another could be more or less important, depending on the project.

An issue I encountered along the way was that some of the selected criteria was not as objective as I had expected. It can be hard to give a quantitative rating on the more intangible requirements. Furthermore, more research would need to go into discovering what are the exact elements that give a building its symbolic value, or keep alive a certain memory. Is it the materiality, or the shape, or the type of activity going on inside, or the age, or perhaps it is different for each person?

In the 2010 Biennale of Venice, Rem Koolhaas looked into the continuously increasing number of constraints and regulations at the level of buildings and also the city and landscape. Over-regulation can actually lead to problems, as it can limit certain interventions despite being something that would benefit inhabitants. In the same way, it could be said that many rehabilitation projects that have been deemed as perhaps radical, but have been very successful- would perhaps not have received a good score if following the evaluation process this thesis is proposing. Does it limit creativity? These points open grounds to an interesting and needed debate for sure.

On a personal level, I found the investigation very enriching and insightful, allowing me to understand the strong and weaker aspects of the project I had proposed. I realised that initially when tackling the brief, I had carried out my own research and based my additions and changes of the original heritage building, on my own values and aims and on what I believed the character of the building to be. It is important to go through the framework, in order to understand all the factors that need to be taken into consideration, as well as speaking to the locals who have grown up with the building as for whom it actually speaks to. The framework allowed me to recognise the past of the heritage building, the present meaning it has and needs of the locals, whilst always bearing in mind the responsibility towards the future.



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# Terminology

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Conservation is a very loaded term, carrying with it connotations of authenticity and honesty. Architectural conservation means the conservation of valuable structures or architectural qualities and has been regarded as a fundamental concept of architecture from its inception. Even in Ancient Greece and Rome, damaged monuments would be restored using a range of techniques, many of which were aimed to retain the original form of the building.

It is very important to start the thesis by clearly distinguishing the terminologies relating to conservation, as many times these very specific definitions are used interchangeably, creating a lack of clarity in the field. The chosen method of conservation depends on a number of elements including its physical state, the historical value of the building, its proposed use and goal of the intervention. According to Sir Bernard Fielden, there are seven basic degrees of intervention which pertain to architectural conservation (Fielden, 1982). These are as follows:

*Prevention of Deterioration:* It entails the frequent evaluation and control of cultural heritage properties, therefore preventing degradation. Action is undertaken to the minimum extent possible in order to guarantee the prevention of deterioration of heritage buildings. This could just be cleaning and regular maintenance.

*Preservation of the Existing State:* This term involves seeking to conserve the building throughout time and places great importance on maintaining the building's historic fabric. To preserve is to keep the existing state as well as preventing the object from being destroyed in the future. It can include necessary respectful adjustments or repairs but they must be done with minimum or no alterations to the original building fabric.

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*Consolidation of the Fabric:* When standard maintenance or preventative actions fail to provide the intended outcomes, consolidation acts are utilized. This entails physical action on the building, for example the use of strengthening methods on the materials, to extend the life span and authenticity of the structure.

*Restoration:* This term means returning to a prior condition or recreating the original concept, in which the most important requirement is the appearance. This type of intervention is used when we have scientific certainty of what the original was like and can thus replicate elements to substitute the destroyed or missing parts.

*Rehabilitation:* This intervention involves obtaining a contemporary new function ensuring that the building continues to be used. The alterations, additions and adaptations can be more or less radical and of varying degrees, however it is important that the historic character of the building is protected.

*Reconstruction:* It entails the rebuilding or re-creation of destroyed or damaged buildings or elements of a structure by using new or old materials or their combination. It is based on certainty derived documents or other forms of evidence and should not involve suppositions and assumptions about the past situation.

*Reproduction:* The action of creating a copy of the existing parts, thus re-establishing its aesthetic harmony. In this case the original object is not necessarily irreversibly affected by this intervention. Moreover, these last two types of interventions mainly display replicas and thus do not require the need for subjectivity.

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# Architectural Rehabilitation

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## Function and Importance

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The thesis focuses specifically on the intervention of rehabilitation, briefly mentioned above, as it is becoming an increasingly necessary concept in the 21st century. The act of adaptation and alterations to existing heritage buildings is not a new phenomenon, but principles of sustainability and climate change are bringing it to the forefront of architectural practice. In many parts of the world there is demand for new buildings and yet there is a huge stock of obsolete existing buildings that are no longer contributing or being used to their full potential in spite of their historic character. Therefore for buildings that have outlived their original function, demolition is no longer seen as the solution, but instead rehabilitation is deemed the most effective and efficient method to provide new functionality bring new life to valuable heritage buildings (Orbasli, 2008).

The worth of heritage buildings is well recognised. They describe our past and evolution, giving people a sense of place and creating the unique identity of a community. Conservation methods stem from the principles of protection which focus on preserving heritage sites for future generations. Rehabilitation practices present the complex problem of how, on the one hand the intervention must have a minimal impact on the heritage significance, but at the same time provide a new modern value to the building (Fiorani et al, 2017). It requires an integrated and multidisciplinary approach (Orbasli, 2008). Many times it seems the only possible solution in respecting the history of the building is to transform it into a museum, however, there are only so many museums that society can support or needs.

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Unlike reconstruction, which is more objective, the complexity and subjectivity of rehabilitation is what makes it so interesting and important to study. In the design developments, the architect or designer must consider the building's history, present, and future (Fiorani et al, 2017). Rehabilitation should always entail a more comprehensive collection of methods that enhance not only a building's technical and spatial design features, but also its social, cultural, and ecological conditions.

The Standards for Rehabilitation, a part of the Secretary of the Interior's Standards for Historic Preservation, define rehabilitation as "the process of returning a building to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

Every intervention causes some level of destruction. So it is essential that this destruction comes from a deep study and understanding of the historic, architectural and cultural values. It is precisely the selection of these values and their application that the thesis aims to further investigate.

Rehabilitation interventions are tailored to the unique demands of each historic site; no two are alike and thus need to be examined individually. The process begins with recommendations for identifying the elements of those architectural features and characteristics that are crucial in defining the building's historic character and must be retained to preserve its identity. The intervention can range from precautionary maintenance and minor repairs to major alterations, such as partial destruction or opening up to allow a new use to thrive (Orbasli, 2008).

A compatible design is one that maintains a relationship between the absolute physical properties of the existing space and the new elements. The scale and dimensions, materials, proportions, rhythm, and structural composition of the existing building all impact the design of any subsequent additions. This will be explored in more detail in the following chapters.

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*"What we need is continuity... historic preservation is not sentimentality but a psychological necessity. We must learn to cherish history and to preserve worthy old buildings...we must learn how to preserve them, not as pathetic museum pieces, but by giving them new uses." — (Huxtable, 1973, p. 111)*

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Rehabilitation is defined as the process of returning a building to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.

-The Standards for Rehabilitation (codified in 36 CFR 67)

Like Preservation, guidance for the treatment “Rehabilitation” begins with recommendations to identify the form and detailing of those architectural materials and features that are important in defining the building’s historic character and which must be retained in order to preserve that character.

- The Secretary of the Interior’s Standards for the Treatment of Historic Properties



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# Adaptive Reuse:

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## Re-imagining Existing Buildings

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In the same way as the significance of rehabilitation has become increasingly recognized, so too has the term “adaptive reuse”, which since the 19960’s and 1970’s has entered mainstream architectural language due to increased environmental concerns. The term refers to the process of finding a new use for a building that has become obsolete, thus the function is different than the one for which it was originally designed and built, with new requirements, goals and occupiers.

Adaptive reuse architecture breathes new life into heritage buildings by transforming them into something economically viable and valuable to the local community. For instance, transforming an old church into apartments or an industrial warehouse into office spaces or a restaurant. Due to their huge, open areas, industrial buildings are especially well fitted to adaptive reuse. Just as we have seen before, for heritage buildings, the result should aim to keep the spirit of the location, symbolic memory of the original and to preserve remnants of the past for future generations. “Adaptive reuse is then a component of rehabilitation” (Cantell, 2005).



Fig 1. Example of Adaptive Reuse: Dresden's Military History Museum, Germany, Studio Libeskind



Fig 2. Example of Adaptive Reuse: Moritzburg museum, Germany, Nieto Sobejano Arquitectos

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# Brief Theoretical Development

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A theoretical discussion towards adaptive reuse was only established in the 19th Century, where there were two opposing attitudes towards conservation. These different approaches, led by Eugène Emmanuel Viollet-le-Duc against John Ruskin and his pupil William Morris, were disputed publicly through both their writings and their work.

On the one hand, Viollet-Le-Duc pursued a more radical approach and recognised adaptive reuse as a way to preserve heritage monuments stating that “the best way to preserve a building is to find a use for it, and then to satisfy so well the needs dictated by that use that there will never be any further need to make any further changes in the building” (Roders, 2007). The idea was that endangered, destroyed or decaying heritage should be reconstructed to convey the artistic image, to re-establish it in a condition of completeness for the benefit of the present.

On the other hand, Ruskin and Morris, very strongly objected to these ideas and promoted an approach to preserve the building in the condition in which it was found. They found it “impossible, as impossible as to raise the dead, to restore anything that has ever been great or beautiful in architecture” (Roders, 2007). For them, buildings were appreciated for their age-value and authenticity lay in the incompleteness and natural decay that was testimony to the past.

In the early 20th century the debate was further developed in response to these opposing theories on conservation through the ideas that had been discussed by Alois Riegl and Camillo Boito, making significant contributions to the adaptive reuse discourse.

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The Austrian art historian Alois Riegl led this effort through his attempt to construct a value system by which to discern between monuments in his 1903 essay, “The Modern Cult of Monuments: Its Essence and Its Development.” Riegl distinguished between distinct forms of values, which he broadly classified as commemorative values – including historical value, age-value and commemorative value – and present-day values – including art value and use-value. Through this he acknowledged reuse of heritage structures as an intrinsic part of modern conservation (Plevoets and Van Cleempoel, 2013).

Near the time when Riegl was writing his essay, Camillo Boito also published his writings on his ideas following from and evaluating both Viollet-le-Duc and Ruskin’s debates of the previous century. For the first time in the debate, he proposed specific and realistic principles and guidelines for the restoration of heritage buildings. He rejected Ruskin’s approach as impractical while with Viollet le-Duc’s ideas he identified a loss of the material authenticity of the structure (Plevoets and Van Cleempoel, 2013). Although Boito does not specifically address adaptive reuse in his writings, his views are immensely pertinent in terms of adaptive reuse since he discusses numerous different techniques for dealing with renovations and additions to old buildings.

Contrary to Riegl, Boito’s influence on worldwide conservation practice was profound, serving as the groundwork for the Athens Charter in 1931, the first international agreement to advocate contemporary conservation policy. It indirectly implied adaptive reuse of heritage buildings as a means of preventing the decay of the building by making it usable (Mehr, 2019). The Athens Charter states that “the Conference recommends that the occupation of buildings, which ensures the continuity of their life, should be maintained but that they should be used for a purpose which respects their historic or artistic character” (Athens Charter, 1931).

The Venice Charter (1964) was based on a revision of the 1931 Athens Charter and directly introduced adaptive reuse as a way of conserving heritage buildings. Following the Second World War, there was an increase in awareness related to the values of heritage buildings. Previously, the concept of heritage was restricted to antique structures, but after the damage of the war, appreciation for the significance of buildings from various periods and typologies, like industrial or vernacular buildings, emerged (Roders, 2007).



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In the Venice Charter, a review of conservation theory was developed, in which the community and social value of the building was considered as the main force and in which adaptive reuse was introduced as a form of conservation practice. “The conservation of monuments is always facilitated by making use of them for some socially useful purpose” (Venice Charter, Art. 5, 1964).

As has been stated, it was only since the 1970’s that the term adaptive reuse fully came into theory and mainstream architectural practice. The first publication on adaptive reuse came from Cantacuzino in “New uses for old buildings” in 1972 (Plevoets and Van Cleempoel, 2011). The author thought that adaptation and rehabilitation of existing structures in an urban environment over time resulted in a stronger feeling of belonging throughout communities.

First adopted in 1979, the Burra Charter was the first national heritage document to replace the Venice Charter as the foundation of national heritage practice. Published by the Australian ICOMOS, it introduced ‘place’ as an official component of practice within conservation, relating mainly to intangible aspects. Whereas within conservation the tangible values relate directly to the physical and historic fabric, the intangible embraces the social perceptions and conveys meaning of place (Lesh, 2020). “Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups” (Article 1.2, Australia ICOMOS 1999).

The 1983 Appleton Charter likewise shows important development moving towards the intangible, stating that during rehabilitation “new volumes, materials and finishes may be required to satisfy new uses or requirements. They should echo contemporary ideas but respect and enhance the spirit of the original” (Appleton Charter, 1983).

In 1995 Brand contributes to the comprehensive discussion in relation to rehabilitation, in particular adaptive reuse of heritage buildings, highlighting how the objective has shifted over time. In contemporary practice the focus of modern adaptive reuse is not only financial consideration but also technological changes to a heritage building without losing its heritage values. However, the emphasis is mostly on maintaining heritage values (Mehr, 2019).

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# Modern Heritage & its Intangible Qualities

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The term built heritage commonly tends to bring to mind ideas of dusty, ancient, beautiful and frequently non-functional monuments. However, history is a continuum, more modern heritage is no less historical than ancient heritage; all explain our past and society’s progress, providing individuals a sense of place and establishing a community’s distinctive identity. Modern Heritage is defined as “architecture, town planning and landscape design of the 19th and 20th centuries” (UNESCO, Identification and Documentation of Modern Heritage, 2003).

As has been seen, the concept of rehabilitation, like all conservation interventions, seeks to retain the significance of the building as much as possible. It is essential that whilst the building is being given a compatible new use and life, the features that express the cultural, historical and architectural values are maintained. Heritage buildings, whether modern or not, are considered heritage because certain cultural values have been attributed to them and this will be particular for each one. The problem lies when the design choices are guided by criteria that often may not take into account these values or distinctiveness of the heritage building.

Each particular project has to be studied independently and in depth, as the conditions, objectives, values, significance and character are unique for each one. However, the thesis suggests that in broad terms historical heritage and modern heritage require different approaches in the way they are rehabilitated.

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Generally speaking ancient heritage buildings hold two main values attributed to them; the first is aesthetic value in terms of beauty and harmony, the second is the age value meaning their history and connection with the past, impregnated by the hands of the people who made them. In antiquity, the legacy of Greek architecture lies in its aesthetic value stemming from the symmetry, from the monumentality, grandeur and decorative features. The buildings were built to last, and indeed beauty withstands time, even if the object is no longer functional or in use.

On the other hand, any discussion of “beautiful” appears to have been purposefully suppressed in twentieth-century by architects and theorists eager to distance themselves from the past. “A modernist polemic calling for an aesthetic tabula rasa and the application of scientific principles to design supplanted the preceding rhetoric. Positivist emphasis on rationality and function marginalized beauty as an architectural issue” (Nesbitt, 1995). For the main part, modern heritage promoted the concept of functionalism. In 1896 Louis H. Sullivan coined the phrase “form follows function” which became the slogan of modernism in architecture, it suggested that a building’s use and purpose should be the starting point for its design as opposed to its aesthetics. For example in industrial architecture, the large open spaces of warehouses or factories can fit and be very functional for many different types of uses. Architects are attracted to these massive spans to creatively adapt these spaces for their reuse as has been discussed previously in the process of “adaptive reuse”, moving away from the tendency of solely turning them into museums. Thus, as opposed to ancient heritage, the lack of monumentality leads us to confront the question of identifiable values, of which economic worth is one.

Interestingly, the late twentieth century saw an exponential global increase in the number of objects and places actively recognised, classified, conserved, and presented as heritage, including an increase in modern heritage buildings (Harrison, 2013). Kammen (1995) states that the development of a modern sense of nostalgia and a preoccupation with the act of not forgetting stems from the post-war heritage movement, and the fracturing process of globalisation (Harrison, 2013).

We started saying that factories for example are heritage, but why should we attempt to protect or conserve a factory?

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As far as its tangible values go, the functional soul of modern buildings is clear, but this functionality is not enough to make them heritage, or make us want to protect them, there must be a deeper meaning and value that we attribute to them. Perhaps the other branch is the symbolic - the image, the identity. In other words, many of these modern heritage buildings are not special to us just because they can adapt to fit so many uses- but because they have a strong symbolic value.

In contrast to monumental ancient heritage, these buildings were not built to be beautiful, but our post-industrial/ post-modern society values these buildings for being testimony of the speed of cultural, technological, social and environmental change that defined the 19th and 20th century (Harrison, 2013).

Nostalgia may be defined as a melancholic sense of abandonment. After the fast changes of modernity, urbanisation, industrialisation, and political change, the term became extensively used. This altered people’s perception of time, resulting in a collective reminiscence and longing for the past. It’s worth noting that nostalgia usually implies a rupture with the past, a period of abandonment or neglect before reconciliation can take place. This period of forgetfulness helps society to recover its history. “This sentimentalising over an obscure part of the ill- defined past has created a romantic idea of an industrial society; one which contained certainty, jobs for life and a real sense of community spirit. Whether this time actually existed is irrelevant, it is the yearning for the half- forgotten past that is fuelling the nostalgia” (Stone, 2019).

There is a need for modern heritage to go beyond the focus on individual “monuments” and the physical form of buildings, and give more importance to the incorporation of both tangible and intangible heritage, particularly memory of the past and the spirit of the building into its studies.

The previous section on theoretical development showed how the understanding of how to deal with conservation is not just increasing but it is changing- “while conservation was once viewed as a largely technical field, conservation professionals now must be alert to the cultural, spiritual, economic, and other values inherent in heritage” (Dardes, 2009).

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However, it seems as though existing theories of conservation and adaptation are not succeeding in providing a framework or establishing a strategy for determining the appropriate and sensitive rehabilitation of these 19th and 20th century buildings, as still more emphasis continues to be devoted to the physical and visible parts of the legacy than its intangible categories. “The dedication to a social program as being a true characteristic of the Modern heritage; the link between tangible and intangible heritage, particularly memory of the past- that should be incorporated into the concept of Modern heritage” (Uskokovic, 2006).

Interestingly, although more things are being considered heritage as well as memory becoming increasingly important to us- we are still not giving the just importance to the intangible aspects during our conservation interventions. During the interventions, architects and designers are still translating this memory or symbolic value that we attach to the building, purely to protecting its tangible or physical qualities.

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# Rehabilitation as an Expression of our Time

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Rehabilitation, as an intervention of conservation has as its foundation the preservation of the cultural, architectural and historical values of the building, remaining true to its past. However, if we want to transform and enrich our built environment, we not only have a responsibility to our ancestors, but also towards ourselves and forthcoming generations as we consider the best way to build the future. “Conservation of what we consider cultural heritage is, in turn, one of the most challenging kinds of transformation because of the explicit, direct and difficult issue of dealing with the necessity for transformation/ evolution, as against the need for permanence/memory” (Kealy and Musso, Eds., 2011).

During a rehabilitation project it is impossible that every attribute of the heritage building is conserved. In fact the process of rehabilitation, will involve studying and selecting the most important factors and values, in order to guarantee the successful preservation of its historic character as well as meeting its objectives for contemporary society. Depending on the heritage building, the aims of the project, the stakeholders and other factors – the intervention could chose more radical solutions, transforming more of the original, or could remain more subtle as an approach.

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Many structures throughout history, some of which society and architects alike treasure as relics, are not limited to a certain historical period; many of these buildings have been renovated over multiple centuries before reaching the condition as we know today as “final”. A rehabilitated heritage building shows both the evidence of the society that constructed the original as well as the values of the society that carried out the intervention.

The rehabilitation story can reveal as much about the culture and ideas of the society utilizing the building as the original structure does about the original civilization of the time. The changing attitudes of a culture may be found in the new programmatic usage or organization of a building or the new tangible and intangible values that are added, thus each modification and adaptation reflects the concerns of the occupants of that setting and is creating our history for the future. It is important that in late modernity’s memory crisis, the obsession with conservation and sense of nostalgia for the past – does not create “a present drowning in its pasts” (Harrison, 2013, p.3).

The built heritage that we pass on, is one of our most important cultural assets and contributes to the collective memories, providing clues to our past and creating a sense of identity and pride in people. There is a huge responsibility in the decision makers that are carrying out these interventions. However, there are many difficult questions that these decision makers must consider such as how can we know for a certain project how much should be preserved and how much should be transformed? How can the protected building be kept alive whilst still evolving and being improved for contemporary society? At the OMA exhibit “Cronocaos” at the Venice architecture biennale 2010, Rem Koolhaas noted “the present moment has virtually no idea how to deal with the coexistence of radical change and radical stasis that is our future” (Cronocaos, OMA, 2010).

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In conclusion to this chapter, there is a need to decide on an agreed process or strategy in defining objective or measurable standards of how decision-makers should deal with rehabilitation projects. As the definition of rehabilitation reveals, architectural conservation of character is mostly value-based. There is currently no existing scientific equipment to assess a building’s cultural worth (Kealy and Musso, Eds., 2011). The European Association for Architectural Education have a periodically published book, each with a different theme, that offer a selection of essays and writing from conferences and workshops. André De Naeyer, writes in his essay, included in the 52nd edition named “Conservation/Transformation” that it would be very beneficial to have a new type of conservation charter, or an explicative amendment to the numerous current charters that could include “the minimum percentages of authentic material and/ or volume to be retained, the degree of authenticity and number of changes made throughout history, and the measured values according to objective scales. Together with a clear hierarchy in the value of the historic fabric (also based on quantifiable criteria).” He goes on to say that “such a ‘Eurocode’ could provide proper standards for each type of intervention and help the restoration-architect in his/her dialectic mission” (Kealy and Musso, Eds., 2011, p.201).

Of course this is too complex and broad a question for this thesis to even attempt to address, but I believe that every piece of research, provocation and discussion within the framework of the rehabilitation of modern architectural heritage is essential in getting a little closer to a better understanding of a more competent strategy and thus creating a better future.



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# Demystifying the Meaning of Character

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This chapter explains the values that are generally innate and detectable in cultural heritage buildings and their surroundings, in order to demystify the “character” of constructed heritage. The underlying motive for heritage protection has always been about value. The problem lies in the fact that there is a lack of established and widely accepted procedures and methodologies for assessing these values; particularly cultural values. Marta de la Torre defines cultural significance as “the importance of a site as determined by the aggregate of values attributed to it” (De la Torre, 2002, p.3).

When defining its cultural importance, each building is subject to multiple values; either in agreement or conflict. Of course, each generation has its own ideals and ambitions to strive towards but “even if afterwards next generations do not agree with it, they should respect it, and see it through their aims and values, weights and hierarchies, integrated in their contemporary circumstances” (Pereira-Rodgers, 2004). The aim is to pass on a meaningful building with a complex character and message to the future generations within the best possible conditions.

Until recently, the heritage industry was generally isolated, only involving groups of experts and professionals. The authorities, who were responsible for funding the work, allowed these experts the right and freedom to decide what comprised “heritage” and how it should be preserved.



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However, in recent decades, the definition and identification of heritage has developed and broadened to include other organizations, the public and experts from other professions. Each of these have their own standards, opinions and values that frequently differ from heritage specialists (De la Torre, 2002). For example “the stakeholders of social values are usually members of the public who have not traditionally participated in our work or had their opinions taken into consideration” (De la Torre, 2002, p.3). When it comes to the values of a building which are harder to assess or that are not considered common between all the different stakeholders, it is important that we acknowledge and recognise the importance of inclusion of all in the process – finding a balance following the moralities of rehabilitation. “The engagement of all the associated communities and stakeholders is required and necessary in order to succeed in the values-based management of architectural heritage and to comprehensively identify the values in the works” (Taher Tolou Del et al, 2020, p.5). More specifically, the stakeholders can be “investigated and analyzed at three levels: people, experts, and governments, and the holistic conservation of the architectural heritage can be achieved only by the joint cooperation among all the three levels” (Taher Tolou Del et al, 2020, p.10).

As Fielden writes, the most important first step in a rehabilitation project is to understand the goals or aims and then, accordingly prioritise the values in the building that need to be protected or transformed in order to achieve this (Taher Tolou Del et al, 2020). Why is this heritage building being preserved? Thus what are the important values that cannot be lost? What needs to be added or modified and what can be lost in order to achieve the overall benefits that the project aims for?

Sullivan and Buckley state that “in values-based management systems, heritage planning, decisions, and actions rest on a comprehensive understanding of the heritage values” (Buckley and Sullivan, 2014, p.35). This chapter, aims to provide an extensive yet summarised list of the most common values of architectural heritage provided from different scholars. The values will firstly be presented and described so that in the following chapters we can apply them to the case study.

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# Heritage Value Typologies

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## As Recognised by Various Scholars

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I have selected some extracts and ideas from different scholars, concerning the values that are generally characteristic and inherent to heritage buildings.

Perhaps the most comprehensive report was carried out by the authors, Mohammad Sadegh Taher Tolou Del , Bahram Saleh Sedghpour and Sina Kamali Tabrizi in their paper “The semantic conservation of architectural heritage: the missing values” (2020) for Heritage Science- in which they carried out an extensive literature review on semantic values, with an attentive importance on the intangible aspects. They concluded that “overall, more than 100 scientific documents, statements, and charters were studied according to the criteria mentioned in the methodology section (quantitative content analysis), and 40 semantic values were identified” (Taher Tolou Del et al, 2020, p.6). For the sake of simplicity and in order to advance a clear strategy, in this thesis I will only focus on the main values, which are defined later in this chapter. So, which are these main components?

In 2006, Throsby identified the main components to be cultural, aesthetic, spiritual, social, historical, symbolic and authenticity value. Furthermore, he said that historic preservation should be implemented in order to conserve and produce cultural assets such as historical connections, feelings of place, aesthetic and artistic aspects of building as well as cultural symbolism (Taher Tolou Del et al, 2020).

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Moreover, in the paper “Cultural Values Change in the Rehabilitation of Historic Schools in Portugal” (2015), Aleixo examines international guidelines, organisations and other conservation bodies to recognise built heritage’s values as historic, aesthetic, scientific, cultural, social and economic. She goes on to add some more intrinsic values taken from scholars such as Feilden, which include economic, political, spiritual, symbolic, documentary, archaeological, architectural. More specifically “values are further reflected in physical elements, such as architectural styles, building types, construction methods and fabric” (Aleixo, 2021, p.26). Additionally she includes the notion, from writings of Orbaşlı, that there are values that can arise from emotional attachment or rarity.

As has also been seen in the previous chapter, theorists and architects have had different interpretations regarding how to deal with the intervention of rehabilitation or conservation – however up until now more attention has been given to the physical and visible aspects of the heritage rather than its intangible categories. Still nowadays, cultural or historic values are regarded inferior to aesthetic or practical ones in certain projects. Elaborate and contemporary design or unsuitable new functions are forced incoherently into the project. This is seen frequently in the face of adaptive reuse interventions that are flawless from the standpoint of design and a new function – and even from a conservation of the physical values of the heritage building, however, we have the impression that something has gone wrong. “When we enter these buildings, only in a few lucky cases do we find the spirit of the place, that set of intangible elements that had impressed us on a visit prior to the transformation” (Fiorani et al, Eds, 2017, p.227).

“Think of being in a building from which you perceive the sound of the crowd gathered in the square and the nearby cathedral bells. If at the end of an intervention of reuse, sounds will be unable to penetrate inside, we have preserved a totally dumb wrapper” (Fiorani et al, Eds, 2017, p.232).

Some architects and experts have tried to understand what elements produce atmosphere. Peter Zumthor in his book “Atmospheres” written in 2006, reflects on this notion and goes on to list a few of these aspects: ‘material compatibility’, ‘the sound of a space’, ‘the temperature of a space’, ‘surrounding objects’, ‘between composure and seduction’, ‘tension between interior and exterior’, ‘levels of intimacy’, ‘the light on things’ (Fiorani et al, Eds, 2017, p.232).

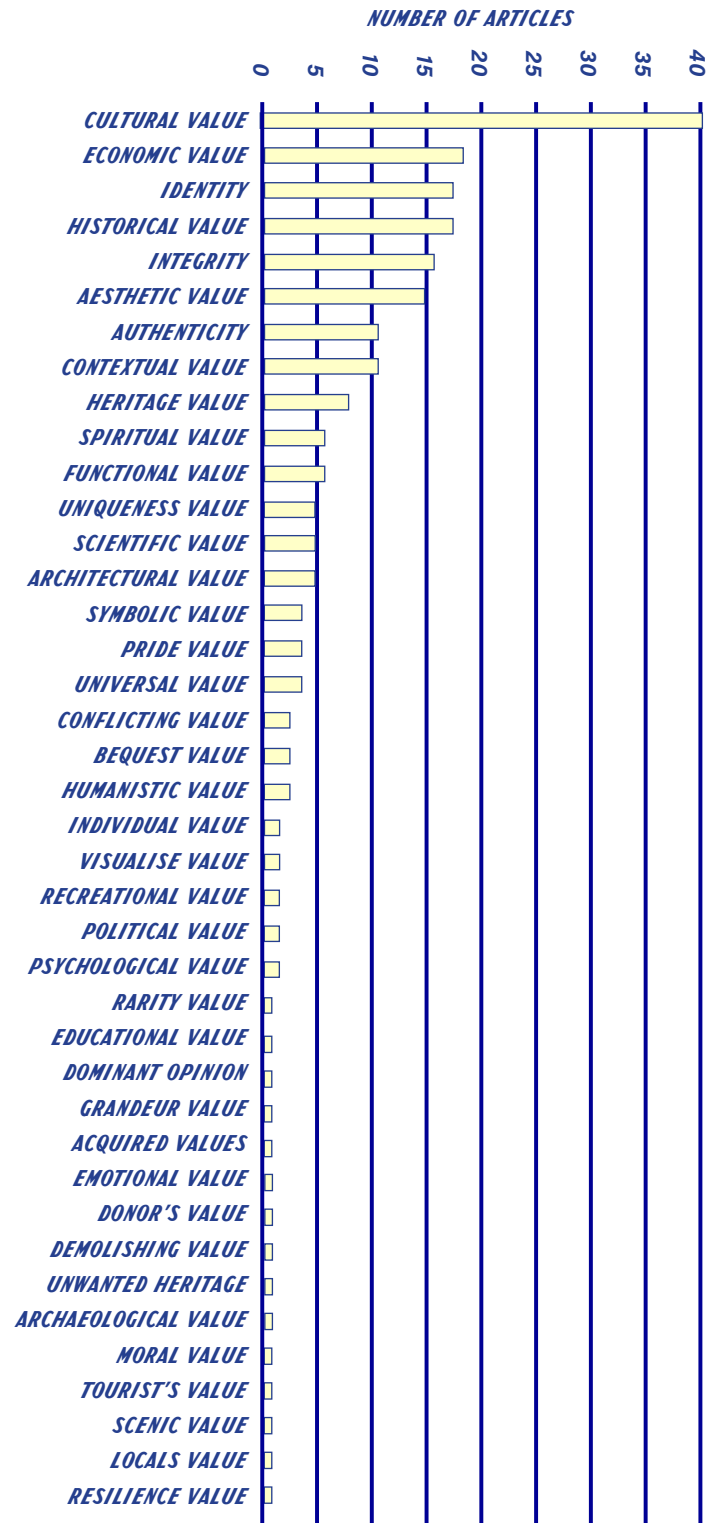
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When a project involves an existing building, designing creates atmospheres that interact with the current ones- it is necessary to take into account this factor so as not to produce a project with a contorted and random meaning (Fiorani et al, Eds, 2017).

As considered in the first part of the thesis, any discussion of values associated to modern heritage must address the notion that its meaning or character is not only found in its physical matter, but also in its ideas. “Therefore, if the ‘significance’ does not reside so much in its materiality as in its intellectual achievements, then it is about ‘essence’ rather than ‘substance’” (Kealy and Musso, Eds., 2011, p.145).



Fig 3 - Frequency of the semantic values in the reviewed studies



	SIGNIFICANCE CATEGORIES (VALUES)	SIGNIFICANCE INDICATORS
IMMATERIAL CULTURAL VALUES	SETTING	SPATIAL CONTEXT
	TOWNSCAPE	VISUAL LANDMARK
		ACCESSIBILITY
	LANDSCAPE	BUILDING(S) LOCATION/ DIMENSION
IMMATERIAL CULTURAL VALUES		USE
		ACCESSIBILITY
	ARCHITECTURE	FORM
		FUNCTIONAL-SPATIAL LAYOUT/ USE
		FABRIC
	CONTENTS	FIXTURES
		FURNITURE
		EQUIPMENTS
IMMATERIAL CULTURAL VALUES	SENSE OF PLACE	AFFECTIVE DIMENSION: FEELINGS TOWARDS
	PLACE OF ATTACHMENT	THE PLACE
	PLACE OF IDENTITY	COGNITIVE DIMENSION: BELIEFS ABOUT THE
		RELATIONSHIP BETWEEN SELF AND PLACE
	PLACE DEPENDANCE	CONATIVE DIMENSION: BEHAVIOURAL
		EXCLUSIVITY OF PLACE IN RELATION TO
		ALTERNATIVES
IMMATERIAL CULTURAL VALUES	SENSE OF CONTINUITY	MEMORIES
		RARITY OR UNIQUENESS
IMMATERIAL CULTURAL VALUES	SENSE OF COMMUNITY	COLLECTIVE ESTEEM
		SHARED MEANINGS AND VALUES

Fig 4 - Categories and indicators of socio-cultural significance and of sustainability (ICOMOS Australia, 2013)

<i>ECOLOGICAL</i>	<i>SOCIAL</i>	<i>ECONOMIC</i>
<i>AGE</i>	<b><i>(OTHER) PRIMARY VALUES</i></b>	<i>POLITICAL</i>
<i>SCIENTIFIC</i>	<i>AESTHETICAL</i>	<i>HISTORICAL</i>

Fig 5 - The primary cultural values

<i>EXTERNAL ASSESSORS</i>	<i>PROMOTERS, PROPERTY OWNERS</i>	<i>OCCUPIERS/ USERS</i>
<i>MUNICIPAL ASSESSORS</i>	<b><i>(OTHER) PRIMARY ACTORS</i></b>	<i>DESIGNERS</i>
<i>WORKMEN, ARTISANS</i>	<i>CONTRACTORS, BUILDERS</i>	<i>CONSULTANTS, MANAGERS</i>

Fig 6 - The primary actors

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## Understanding the Main Detectable Values

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### *Aesthetic value*

This value denotes the visual qualities of the heritage building which are usually considered amongst the most important criteria in naming something as heritage. There are various interpretations of this value in the consideration of its beauty, whether through the grand and sublime or through ruins. Beauty can be innate or arise through its use by the visitor or even through the evolution of a building. The relationship of the landscape surrounding the buildings itself might also be included in the aesthetic value. Beauty in this context, is studied technically and through specific criteria including creativity and imagination, attractiveness, innovativeness or functionality. Aesthetic value is a strong contributor to a sense of well-being.

### *Age value*

Some conservation professionals decide to include this value under historical values, because it regards the past of the heritage building. Age value is characterised by the buildings lifetime, its value is created by the increase in age of the building and in the contemporary era, has become one of the primary values. It considers the building material as a piece of memory, testimony to the lives of previous generations. Considering that a generation usually represents 25 years, many building from our modern heritage will have passed several generations. Not all will change the building, but usually there is a trace even if only small, reflecting the new users, designers and owners of that time. It is important that the decision makers survey and consider all the different interventions through time.

### *Cultural value*

The term cultural significance is actually used by conservation experts to encapsulate multiple heritage values; scientific, social, historic, aesthetic and spiritual values for past, present, and future generations, as is also stated in the Burra Charter. These can derive from traditions, beliefs, lifestyle, customs, ideals, morals and culture of a particular society, in sum it represents the identity of a community.

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### *Economic value*

With regards to heritage buildings, this value can be identified as being generated by conservation action or the heritage resource. There are various possible sources of income that come from the economic value such as commerce, use, amenities and tourism. The creation and identification of this value comes through a historic study. It is important that the sources of income are managed and selected properly, as if misused the consequences could even result in the destruction of the heritage building. This happens recurrently, in profit driven interventions where the building market rate is too low compared to the market rate of the lot.

### *Emotional value*

Considered as those values that can give rise to a certain emotion in the user or visitor. Over the last decades, the notion of the emotional bond between place and people has taken on a crucial role in environmental psychology research. Concepts such as sense of place or place identity or memory have developed around these issues and all refer to the relationships that humans establish with places. Emotional values can be found in both individual and collective scales.

Regarding the individual scale, buildings can be part of individual identity, related to the memory and experiences related to personal life and their individual emotional values. More importantly on the other hand, emotional value on a collective scale, whether this be neighbourhoods, particular cultural groups or social groups or on a larger scale or even nations - share elements in matters of cultural identity, national magnificence, nostalgia of the past and pride. These collective feelings can succeed in bringing communities closer to each other. Collective memories which express people's experience, understanding and feeling of a place are intangible to distinguish. This is why buildings that are not technically considered of heritage status can still have an emotional value. Emotions of fear, smallness, intimidation, positivity or wonder are some of the many feelings that heritage buildings can evoke.

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### *Historical value*

The concept of heritage is founded on historical values. The ability of a location to embody, express or create a relationship to the past is crucial to the nature and significance of historic goods. Regardless of everything else, the work's historical significance inspires respect and piques the visitor's interest. The age of the heritage item, its technological attributes, its link with events or people, its uniqueness and rarity or its archiving potential can all contribute to its historical worth. It is a value that is developed through time and may thus vanish, for example, with the substitution of new materials.

### *Political value*

This value or social power can be used by political authorities and individuals for their political interest in building or sustaining civil relations, governmental legitimacy, protest, or ideological causes, through the architectural heritage. It is a sort of cultural and symbolic value that comes from the relationship between social life and the built environment. Not only is the physical environment a result of political ideology, but heritage sites may also promote introspection and create civil society. Political value, like all legacy values, can be understood in a positive way as a contributor to society, or adversely as an instrument used to reinforce imperialism, fascism or post-colonialism.

### *Rarity value*

This value is attributed to a heritage building when it is amongst the few survivors of a specific historical style or era. Unlike uniqueness value, in rarity value the resource will remain unique not only in the present era but also in the future eras. Heritage buildings that have this value are likely to be listed as World Heritage sites as they are considered to have a high universal value that cannot be replicated.

### *Scientific value*

A society's traditions, views and technological progresses, as well as the reasons for their decline can many times be understood through the traces and remains of their historical heritage. It is very important that

the architect or expert surveys and studies accurately the scientific values of the building and its surroundings - to fully comprehend and thus not fortuitously erase the important construction methods, forms, materials, features and components that could be significant of the time. A broad scope of the sciences depend on the correct knowledge of these values including history, archaeology, heritage conservation and sociology.

### *Spiritual value*

Considered as those heritage buildings that manifest spiritual beliefs, religious beliefs or are reminiscent to an important and symbolic event or figure from the past of a place. The spiritual value conveyed by the heritage building may contribute to the sense of identity in the society, giving meaning, emotion, value and mystery to place. The intangible heritage that helps one grasp the character and meaning of the building and understand the signs of the people that once inhabited the spaces.

### *Symbolic value*

This value takes into account the significance and knowledge that might assist a society in interpreting its cultural identity. The importance of a heritage monument as a representation of meaning can be significant in terms of overall knowledge growth and comprehension. A historic building is symbolic, associated with authority or power, and other thriving perceptions. When this symbolism is neither political nor educational in nature, yet has been a part of a significant event in the past, its symbolic worth is directly tied to historic values.

### *Uniqueness value*

The distinctiveness of a heritage building can be determined by its designer, style, type, period, location, or a combination of these elements. The building is evaluated in present time through a variety of existential aspects, for example, the primary use, aesthetics, functional and cultural identity and the technology of construction. The sense of pride created by the heritage in the individuals is the intrinsic value of the work. This value should be distinguished from that of rarity, as in the later the resource will remain unique not only in the present era but also in the future eras.



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# Case Study: Hangar Ticinum

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## Rehabilitation of Italian Architectural Modern Heritage

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Motivated by the idea the built heritage that we pass on, is one of our most important cultural assets, the thesis aims to provide a comprehensive review of the factors that need to be considered when rehabilitating a modern heritage building in order to guarantee the conservation of the most important elements that give life to its historical character. As it is impossible for everything to be conserved in a rehabilitation project, for each building, the most important and appropriate factors and values need to be selected to provide guidance for the decision makers. Each building needs to be considered independently, holistically identifying the many factors that will influence the decision-making and future of that building (Misirlisoy and Gunce 2016).

For this reason this chapter introduces the rehabilitation of the now abandoned seaplane hangar in Pavia. Italy is a point of reference for the conservation community worldwide and, according to Statista, has the largest number of UNESCO world heritage sites in the world (Statista, 2021).





Fig 7. Edited by author, Pavia Italy Map Print, by Hebstreit

## PAVIA

45.185° N | 9.158° E

Italian cultural heritage is a one-of-a-kind case due to the significance of the context in which it was created, the breadth of its geographical distribution, the sheer number and the continuity over thousands of years. Any study in the realm of Italian rehabilitation is a step in the right direction as there are not many strategies of how to help deal with these types of interventions. “Why does a country like Italy, that prides itself so much on its cultural heritage, currently lack a cultural heritage protection strategy that encompasses a holistic, long-term vision?” (Lambert, 2010, p.2).

The aim of studying the seaplane hangar or “Idroscalo” is to understand its ID, its historical character and the most important values that must be conserved, in the transformation of the building. The first step is to understand the background context, the history of the building, the current condition, the stakeholders, the aim of the project and evaluation criteria.

The case study was recently launched as an international competition by the commune of Pavia along with TerraViva Competitions which allows for the observation of the diversity of interpretations among the participants in how they understand the notion of preserving the “historical character” of the building, raising questions regarding the looseness of the concept. Moreover, the winning proposals allow us to understand the judges interpretation.

In the chapters that follow it is questioned whether there should be so much subjectivity in the interpretation of heritage, endeavouring to create a more objective strategy for rehabilitation and contributing to the research within the framework of the rehabilitation of the Italian architectural heritage. A rating system is created, specific to the case study in this chapter that can then be used to evaluate and analyse the projects presented to the competition, including my own.



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# City of Pavia

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Pavia is a picturesque Italian city with a population of over 70,000 people, nestled along the banks of the Ticino river and only 30 kilometers south of Milan. Pavia has one of the oldest universities in Italy, annually enrolling 25,000 students. The city is also known accross the country for the region's food and wine excellences, the richness of the cultural offer, and the amazing artistic history.

Pavia's history is marked by immense splendour and distinction, dating back to its establishment in the Roman era. The actual city retains all of the elements of the ancient Ticinum which was the name of the city at the time, and the inner city follows the model of the Roman "castrum," design, with key crossroads and a network of streets.

Throughout the twentieth century, like many other towns in northern Italy, enjoyed numerous periods of tremendous economic prosperity, enhancing its urban fabric with a diverse range of industrial operations and vital infrastructural assets. In most cases, the marks of that modern history can still be seen today. The monumental nature of these grand abandoned constructions, while not as noble as that of the architectural treasures of the medieval age, makes them equally unique and remarkable in their own right. And it is here, sitting on the riverbank at the gates of the historical center, that the most remarkable Pavese ruin, "The Idroscalo," can be found.



Photograph: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021









Fig 8. (Page before) Map of Pavia showing Idroscalo, TerraViva Competitions  
 Fig 9. (Top) SISA Torino - Trieste Postcard, 1926  
 Fig 10. (Below) "L'Idroscalo", Società Italiana Servizi Aerei, 1932



# Idroscalo di Pavia

## An Airport on the River

### BRIEF HISTORY

The visionary proposal for Pavia's seaplane base was completed in 1926 by Giuseppe Pagano, a young Italian architect who had just graduated from the Polytechnic of Turin in 1924. The Italian Air Service Society (SISA), the project's promoter, included it in an ambitious infrastructure plan aiming at creating a proper network of "aquatic" airports across the country. The project is set in the context of a period of rapid development for the aeronautics sector, both civil and military.

Pagano's structure was specifically constructed to finish the link between the Turin-Trieste route. The massive hydroplane hangar, strategically overlooking a bend in the Ticino river, was precisely planned just steps away from the confluence where the Blue River joins the Naviglio and became important for refueling and processing commodities and mail for the surrounding Milan area. The grandiose opening in 1926 was presided over by Mussolini himself and is evidence of just how logistically important this unique river airport was at the time. Following a period of immense prosperity, SISA's air transport operations entered a period of difficulty, resulting in a steady and inexorable decline that resulted in the building's decommissioning.



The elevations show geometric engravings on the external walls, articulated treatment of cornices and stylization of the ornamental elements. All of these features show a relationship to an aesthetic that is still strongly related to the decorativism of the early 20th century.

However, the Idroscalo was one of the first examples of rationalist architecture in the province of Pavia. Pagano expresses a strong and decisive imprint easily discernible in the massive use of concrete, the re-fined geometrization of the elements, and the modular scanning of the facades. Other factors that contributed significantly to the building's definition are linked to the specific function that it had to host, as well as the specificities that were somehow demanded by it. The elevated position on the river bed, the rotation of the building axis in relation to the road direction and the massive frame for hydroplane access on the east elevation are only a few of the many oddities imposed by the program itself.

Whilst Mussolini praised the simplicity of Pagano's language; the building was heavily criticised. The people of Pavia thought the stylistic choices were improper and that the beauty did not match that of the riverside. Furthermore, critics have said that Pagano's particular style developed after his design for the Idroscalo. Perhaps as a result, the structure is barely discussed in publications and articles.



Fig 11. "L'Idroscalo", Photography G. Chiollini, Pavia, 1926



Fig 12. "L'Idroscalo", Musei Civici, Pavia, 1933



Fig 13. "L'Idroscalo", Pavia, Large air traffic atlas of Europe, 1928



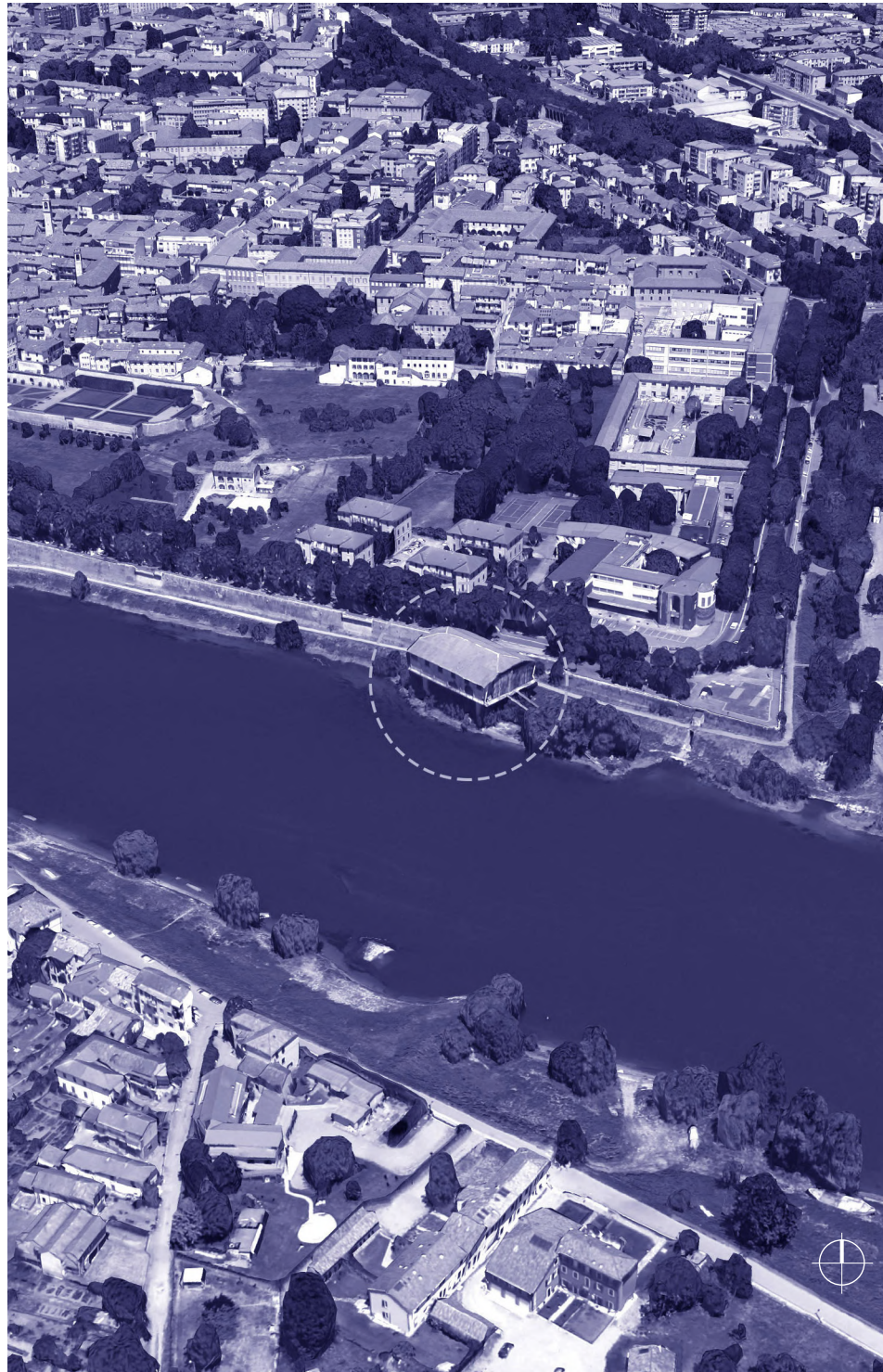


Fig 14. Hangar Ticinum from Google Earth

## Idroscalo di Pavia - The Ruin

### PRESENT SITUATION

The Idroscalo is now a sort of enchanted ruin, besieged on numerous fronts by rich vegetation. The immense concrete pillars that hold it to the ground are swallowed by the flora, giving the impression that the building is practically floating on the river. More than just a hydroplane station from the 20th century, the hangar seems like a mysterious extraneous object that fell from the sky and randomly ended up there.

The gorgeous location on the Ticino river, the panoramic view of the wonderfully colourful Bargo Ticino just across the water, and the proximity to the historical center, however, would suggest that this is one of the liveliest and most popular venues for the local community. Surprisingly, this is not the case, and for unknown reasons, the city has progressively turned its back on it and over time almost forgotten its own existence.

The Idroscalo has also lost the one walkway that previously connected it to the mainland, thus is completely detached and inaccessible. It is clear that its future is hanging by a very fine thread. Every year, the degradation of the façade and roof becomes more severe, and the tipping point appears to be approaching.



Fig 15. Hangar Ticinum, Terraviva Competitions, 2021





Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021

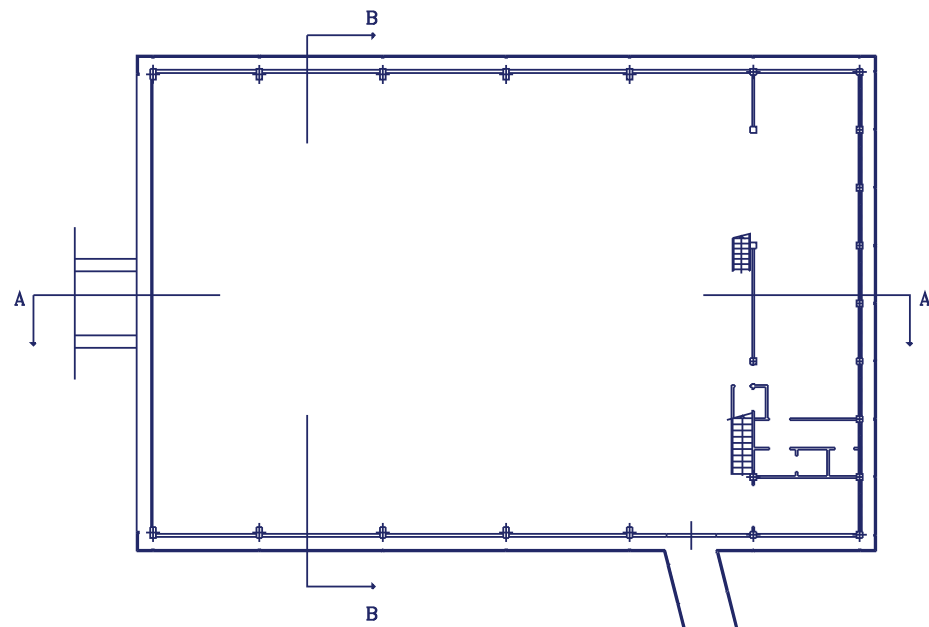


Fig 16. Ground Floor Plan

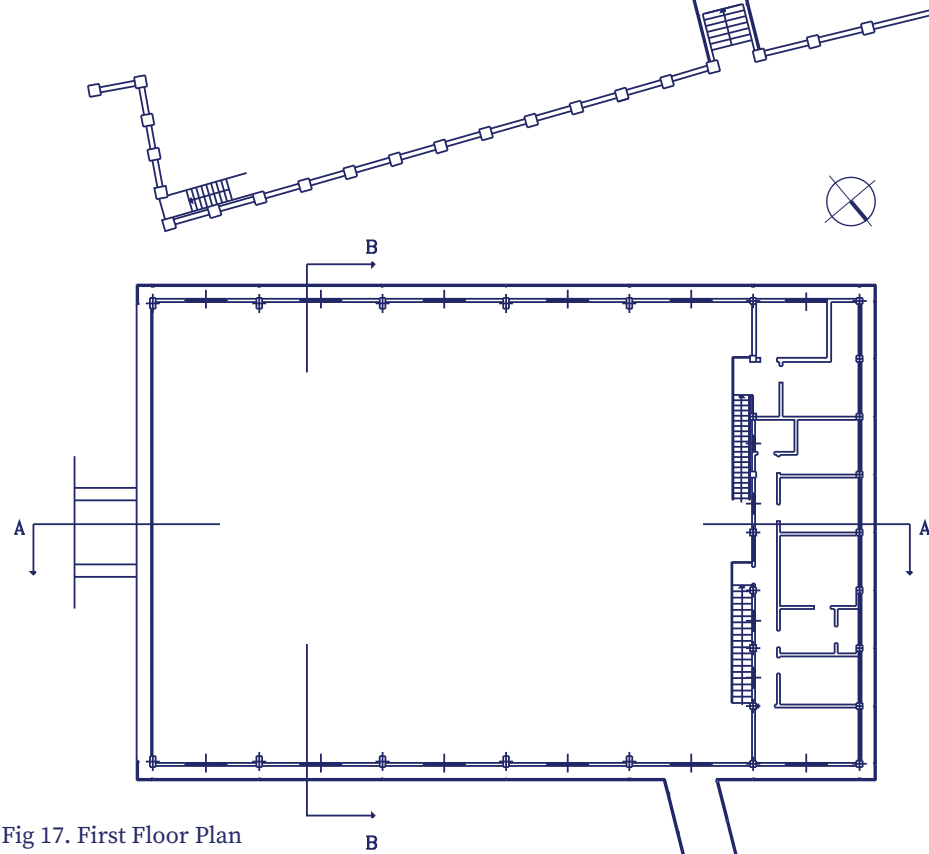


Fig 17. First Floor Plan

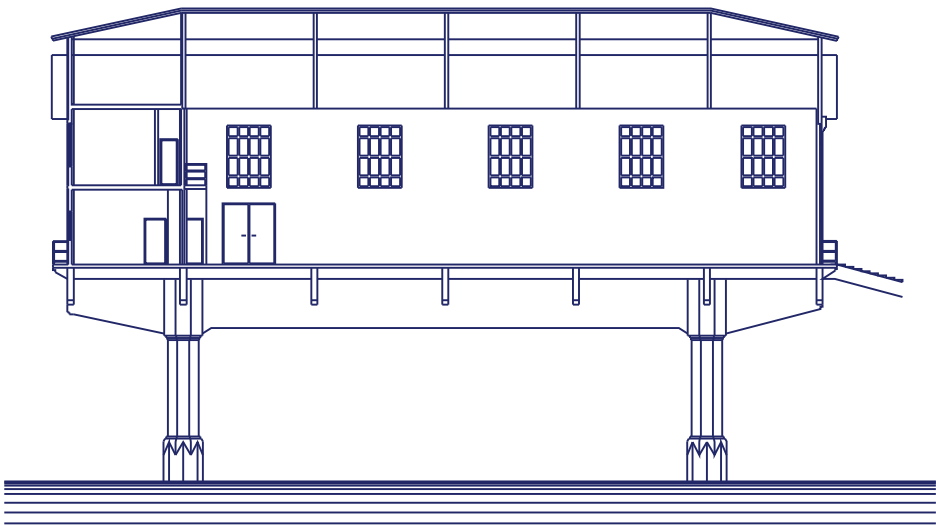


Fig 18. A-A Section

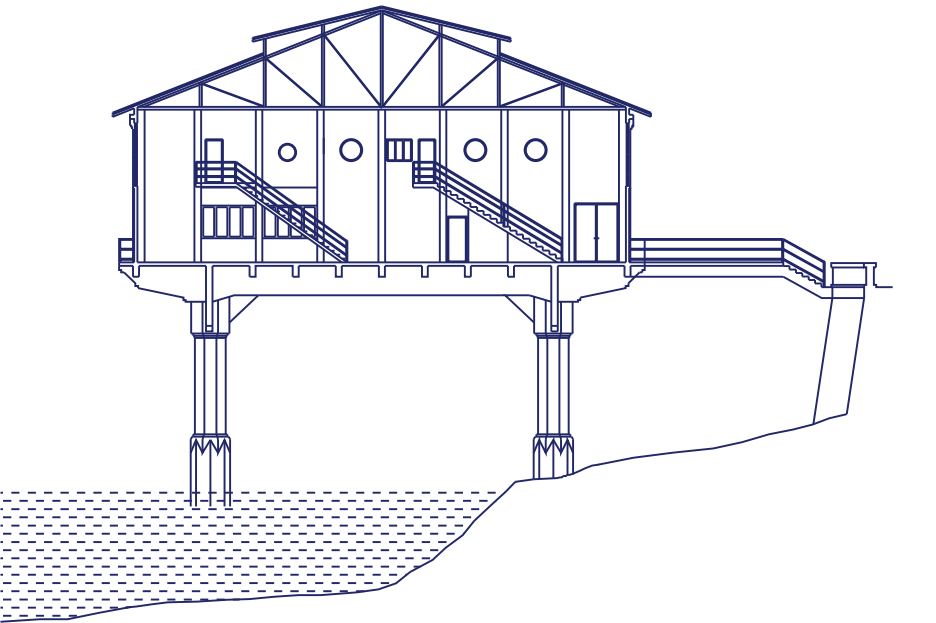


Fig 19. B-B Section



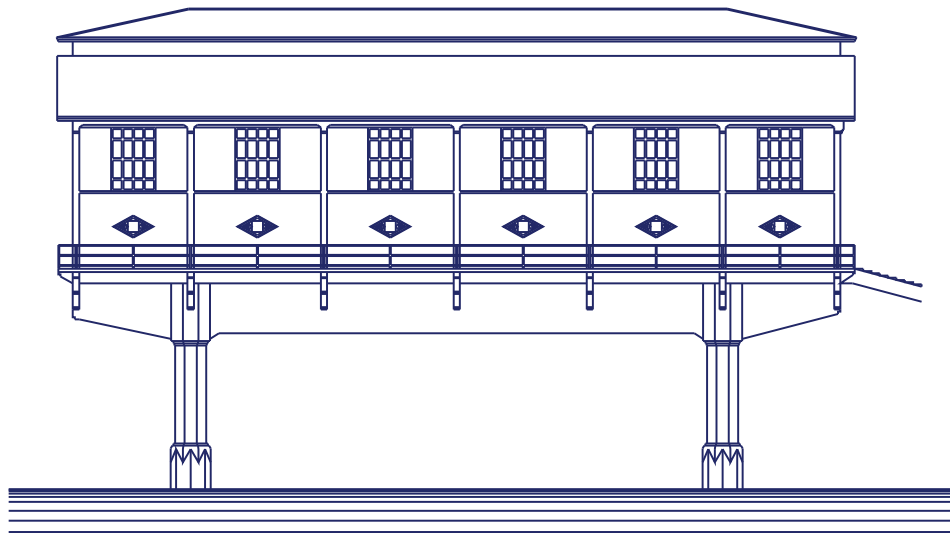


Fig 20. South- West View

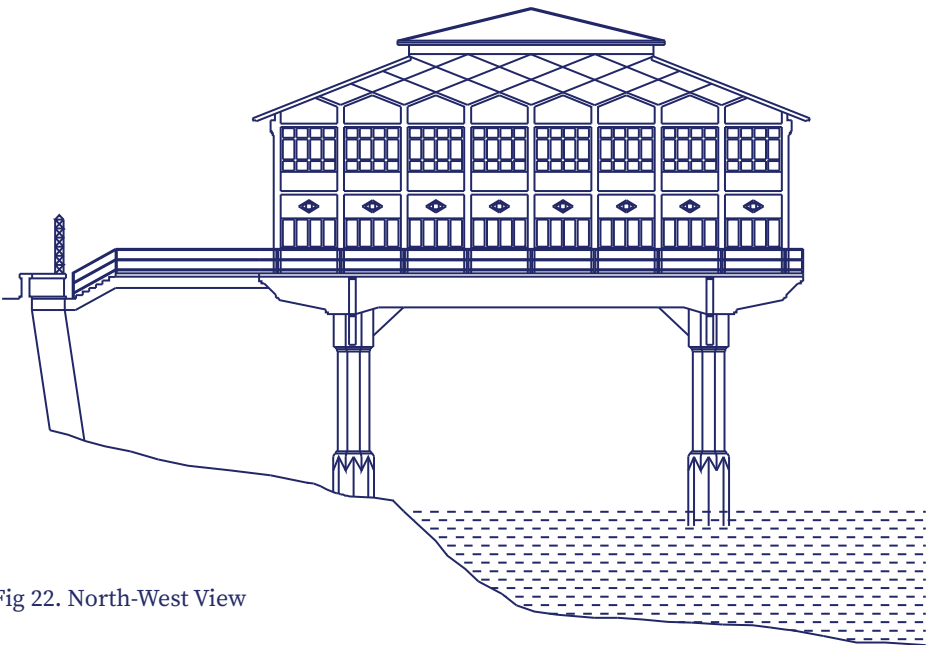


Fig 22. North-West View

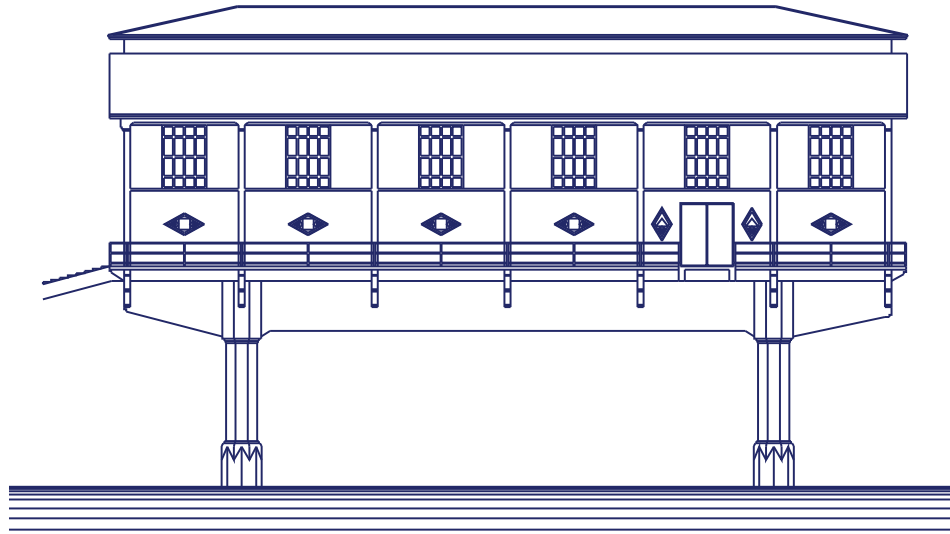


Fig 21. North-East View

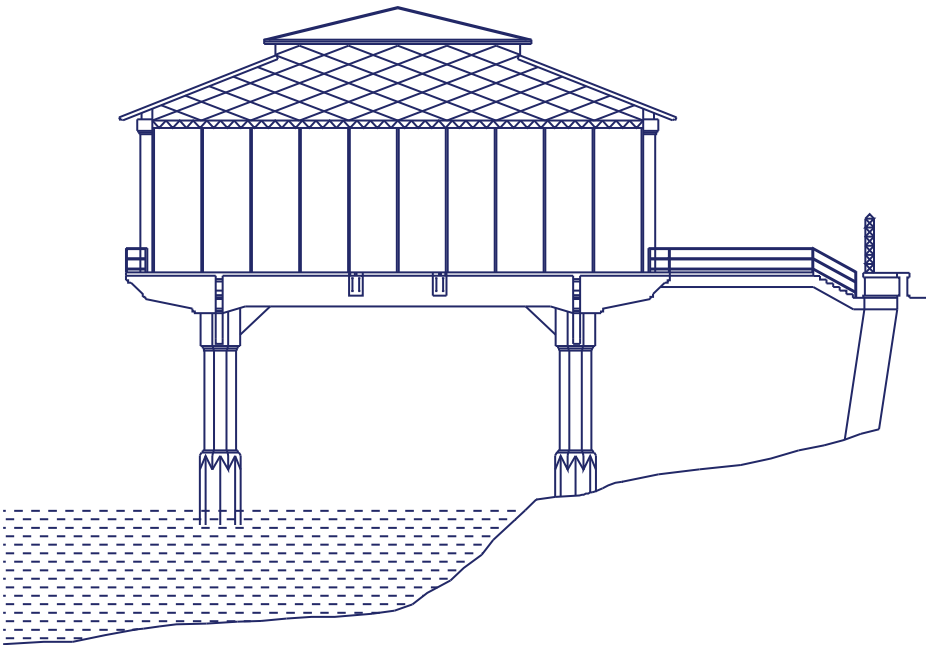


Fig 23. South-East View







Fig 24. Portrait of Giuseppe Pagano by Gino Levi Montalcini, 1928

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# Giuseppe Pagano

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## ITALIAN RATIONALISM

(20 August 1896 – 22 April 1945)

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Giuseppe Pogatschnig was born in Poree, a town on the Istrian coast, in 1896. After high school he enrolled at the Polytechnic of Turin to complete his degree in architecture where he graduated with honours in 1924. Shortly after, he established himself as one of the most distinctive and authoritative voices in Italian architectural culture, establishing himself as a key figure in the Rationalist movement as an architect, urban planner and theorist - particularly at Casabella magazine which he became director of in 1933.

His works underlined his opinion that it was up to fascism to accomplish Italy's ultimate modernisation. Among his most famous works are Palazzo Gualino in Turin (1928), the Institute of Physics of the University City of Rome (1934) and Bocconi in Milan (1936-42) considered among the greatest of the Italian Rationalism.

However following the second world war there is a shift in his political beliefs and architectural vision throughout his career as he became more socially devoted and attuned to the new demands imposed by industrialization and modernity. In 1942, he resigned from his fascist positions, openly criticizing the dictatorship and its tactics. Later that year, he is captured in Brescia but manages to flee. A year later, in 1945 he is arrested again and moved to the Mauthausen concentration camp, where he dies on April 22nd.



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## Pagano - selection of other works

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Fig 25. Università Luigi Bocconi,  
Photography by Stefano Suriano, 2017

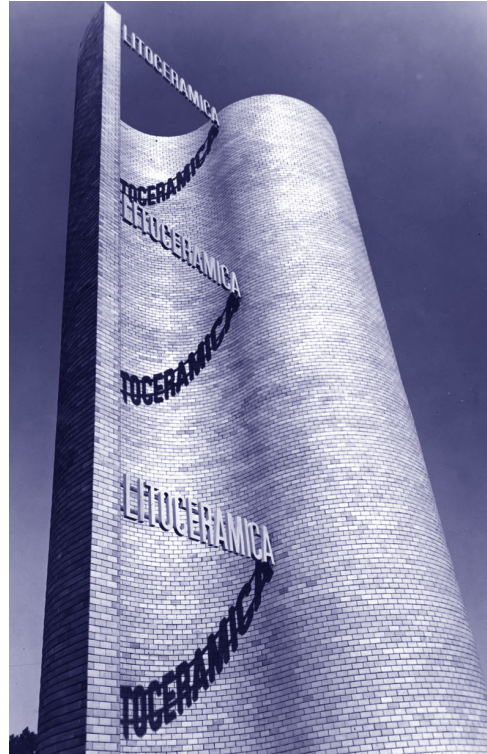


Fig 26. Fiera Campionaria di Milano, Courtesy  
Fondazione Fiera Milano Archivio Storico, 1938



Fig 27. Palazzo Gualino, Arkertipo Magazine,  
1930



Fig 28. Recovery and transformation Palazzo  
Gualino, Photography by Fabio Oggero, 2017



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# Competition Brief

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TerraViva Competitions launched HANGAR TICINUM, an open international ideas architecture competition focused on the transformation of the “Idroscalo” of Pavia into a community hub for the local citizens.

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## Jury

- **German Fuenmayor** | *Piuarch*
- **Anastasia Kucherova** | *Stefano Boeri Architetti*
- **Lorenzo Degli Esposti** | *Degli Esposti Architetti*
- **Mariangela Singali Calisti** | *Comune Di Pavia*
- **Filippo Imberti** | *TSPA*
- **Lucia Paci** | *Operastudio*
- **Bogdan Peric** | *Untitled Architecture*
- **Toufic Rifai** | *Politecnico Di Milano*

As has been seen in the previous pages of this thesis, the hangar played a strategic role both locally and nationally at the beginning of the 1900's. With the building's troubling state of ruin for decades, the question of how to best rehabilitate it to restore its well-deserved dignity, centrality and significance to the city of Pavia arises.

Furthermore, the unique and uncommon architectural type of the “Idroscalo” which represents an intriguing transition era between Secessionism and the Modern Movement of the decades that followed, is reason enough to support its preservation.



# HANGAR TICINUM

A COMMUNITY HUB ON THE RIVER



Comune di  
Pavia

piuarch.

**BOERI**  
STEFANO  
BOERI  
ARCHITETTI

DEGLI  
ESPOSTI  
ARCHITETTI

TSPA

OPERASTUDIO

untitled.





The expectation is that Hangar Ticinum will lead to the long-awaited rebirth of the hydroplane base to the inhabitants of Pavia, as well as acting as the starting point for the ambitious riverfront revitalization project advocated by the municipal administration.

The competition specifically required complete attention to the project's social and cultural dimensions, and urged participants to work on a program that is particularly relevant to the younger generations, transforming the Idroscalo into a bustling and animated community hub lived 7 days a week.

The competition brief stated that more conservative and respectful approaches to Pagano's original project, as well as the more ambitious or even radical and visionary ones were to be accepted equally. The projects proposed could allow for changes and additions to the envelope and exterior both at street and river level.

The brief encouraged participants to take note of the axis of the building which is rotated in the direction of the river, the wide opening meant to give access to hydroplanes and the refined rhythm of the windows. The complex's panoramic location should not be overlooked. Projects should also resolve the issue of accessibility as the only walkway that previously connected the structure to the road was dismantled several years ago, leaving the building isolated and inaccessible.

Finally the brief highlighted the fact that:

**"It is important to point out that we are dealing with the work of one of the most important exponents of the Italian Rationalism, so any solution must be sensitively justified by the project itself and by the relationships it will be able to establish with the context."**

## Evaluation Criteria

- - Originality of the concept;
- - Integration with the context;
- - Contemporary interpretation of the program;
- - Sensitivity in the use of materials;
- - Environmental impact;
- - Graphic representation;



Fig 30. "The Ruin", Photography by Alberto Imberti, 2020



Fig 31. "Urbex Pavia", Photography by Marcella Milani, 2016



Fig 32. "Fondazione Prada", OMA, Milan, 2015



Fig 33. "Caixa Forum", Herzog & De Meuron, Madrid, 2008



Fig 34. "New Lab", Marvel Designs, New York, 2016



Fig 35. "Malha", Tadu Arquitetura, Sao Cristovao, 2016

Fig 29. (shown on p. 96) TerraViva Competitions, 2021





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# Competition Results

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TerraViva Competitions stated that the winning proposals were awarded for being able to “enhance” the architectural aspects of the original project by combining contemporary design interventions with flexible and interactive programs open to the local community.

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Organised by TerraViva Competitions, in collaboration with the Municipality of Pavia, the competition was open to anybody with an interest in design and architecture, whether students or architects, artists or activists.

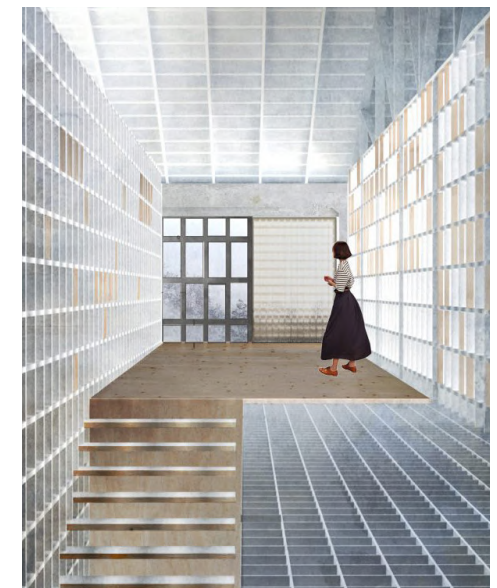
The competition submission deadline was on December 10th 2021, and on January 20th 2022 TerraViva Competitions released the complete list of awarded projects of the design contest “Hangar Ticinum”.

The pages that follow will present the awarded projects and give a brief description of the chosen new use and main concept for each one. It can be seen how the proposals show a very wide variety of interpretations of how to respond to the task of rehabilitating and enhancing Italian architectural modern heritage.

## 1st Prize

*Project by: Paulina Pawlikowska, Paulina Górecka*

### “The House of Light”



Proposed New Use: Performance Space

“The permanent structure is filled with glass, which will bring light outside the building. With the help of light the existing structure will again become a luminous point on the city map, inviting people from all directions. The form of the building draws inspiration from the Shakespearean theatre typology, creating many different scenarios for using the building and enjoying the performances inside and outside on the river. Visitors to the building create a shadow play on the façade, thus making their presence felt in the space.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)



## 2nd Prize

Project by: Devin Dobrowolski

### “Fata Morgana”



Proposed New Use: Flexible Public Space (work spaces, gathering areas, small cafe and bar)

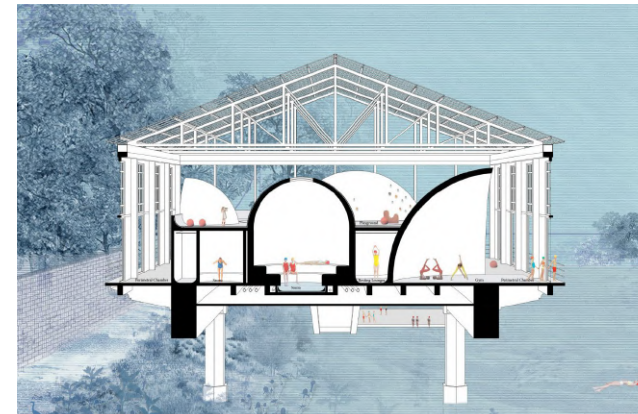
“The project takes its name from the Fata Morgana, an atmospheric mirage making objects appear to hover just above the horizon. As in the myth of Morgan le Fay, a sorceress attributed with the power of transformation, the renovated Idroscalo retains the form of Pagano’s original design, but is given new life through a minimal but radical material intervention.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)

## 3rd Prize

Project by: Valeria Paez Cala, Luisa Brando

### “TWOFOOLD: a Water Infrastructure that Heals”



Proposed New Use: Public Baths

“Twofold is a project that emerges from understanding that the enchantment of Hangar Ticinum’s ruin is due to its double essence that encapsulates Pagano’s rationale and Ticino’s wilderness. To reactivate the structure and the river, Twofold suggests two programs that heal through water. The first heals the human body, mind, and spirit with a complex of public baths, echoing the infrastructures of the Roman Empire. The second regenerates the river processes, biodiversity, and borders with a network of cleansing and seeding operations, engaging with climate change.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)



# Golden Mention

Project by: Di Feng, Lifang Zhang

## “Idroscalo Hub”



Proposed New Use: Community Hub (including seaplane exhibition, reading area, playground and cafe)

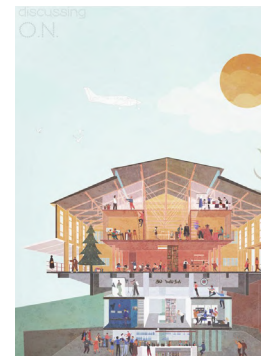
“Since we are pleasantly surprised to find that the building is well preserved, from the very beginning we have the idea of preserving the original building. We envisage the removal of the original exterior wall and the introduction of silver perforated panels to evoke the image of planes. We also preserve the original track, transform it with steps to form a valuable waterfront accessible space, and set up an open air stage in the original seaplane docking area. It is suitable for holding performances and has a magnificent river view as a background.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)

# Golden Mention

Project by: Shuangyun Chen, Raúl Martínez Medina

## “PAVIA O.N: Two Stories, One Place”



Proposed New Use: Leisure and Cultural Centre

“The building serves as a node linking the old and the new, a place where the two stories meet and merge. It's the transition point from an old and traditional city to a new liveable and thriving cultural district close to the water. It frames up the programs in sections: the upper floors attached to the old city inherits the feeling of tradition, elegance, relaxation, and warmth from the historical city wall, while the lower floors invite the bold, pioneer, and experimental nature of the new district.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)



## Golden Mention

Project by: Cecilia Marcheschi, Carlotta Di Sandro

### “ACT – Art Center Ticinum”



Proposed New Use: Art Centre

“A building born to be both a point of departure and of arrival, a static container of dynamic and passing objects. It’s from this reflection that our desire of reinterpretation arose, thinking of the hangar not as a container of objects anymore, but instead of thoughts, culture and art. In order to highlight the historic relevance of the artefact we decided to intervene mostly on the interiors of the building, keeping the essential characteristics of the seaplane base, a choice encouraged by the unpredictability of the context in which it’s set.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)

## Honourable Mention

Project by: Hoang Le Van, Nam Nguyen Cao Hoai, Huy Ngo Nguyen Minh,  
Anh Phan Hieu Trung, Ky Do Dang

### “Pavia’s Livingroom”



Proposed New Use: Mixed Use (co-working, cafe, exhibition spaces, reading area and indoor square)

“Renaming the Idroscalo as Pavia’s living room, we propose a vision and development compatible with the current situation, while reusing the building as a public space of Pavia. In this space, all the daily activities happen, mixed together to create random meetings, bringing connections between different generations through arranged space. We use the image of a “square” and bring it into Pavia’s living room as a blank space, which doesn’t have specific content. This helps us to exploit more “Neutral Space”, where there are no constraints.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)



## Honourable Mention

Project by: Ziyu Guo

### “Continued Modernity”



Proposed New Use: Mixed Use (education, performance, exhibition, workshop and boathouse)

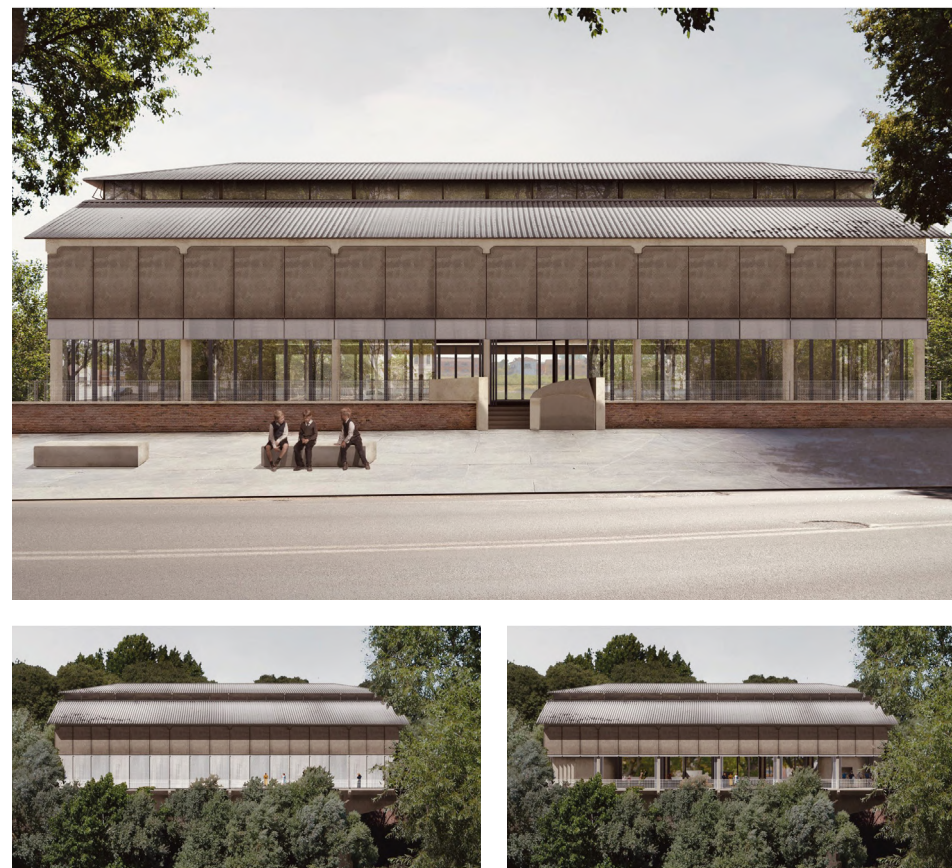
“The Idroscalo of Pavia was designed almost a century ago, when the modernism just came into being. It was a visionary design in the way how the form followed the function, the adaptation of modular layout and the using of a steel structure. The design aims to continue with these three key features from Pagano’s work. Modular: taking module sizes from the existing, then expanded the building to scale with the same module to accommodate new programs required. Adaptive: Programs and interior space configurations are not specifically defined. Light-weight structure: Taking inspiration from both Pagano’s design and aircraft elements related to the hangar’s history.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)

## Honourable Mention

Project by: Léo-Paul Chorel, Camille Bluin

### “The Wide Ticinum Hall”



Proposed New Use: Events Space

“The main objective of the «Wide Ticinum hall» is to offer a great place of reception for events and encounters of the local daily life of the city of Pavia. For this, the project was designed specifically for its integration into the landscape and its connection to the city. Currently, the existing hangar offers a large space and an exceptional location above the river. However, it is only a large empty shell, opaque and cut from the outside. On the one hand, the project provides for the conservation of the main concrete and steel structure, which offers a large exploitable space. On the other hand, the project provides for a complete opening of the perimeter façade of the ground floor.”

Images and text on this page from TerraViva Competitions, 2022  
(Retrieved from: <https://www.terravivacompetitions.com/hangar-ticinum-competition-results-2021/>)





# *TERMINAL PAGANO*

*"ORIGINALITY IS A RETURN TO THE ORIGIN"*  
- ANTONIO GAUDI

*WELCOME TO PAVIA'S NEWEST HUB AND*

*FEEL  
THE BUZZ*

*24/7*

*PAGANO'S HYDROPLANE HANGAR OPENED THE DOOR FOR PAVIA TO  
A WORLD OF DISCOVERY AND EXCITEMENT.*

*TERMINAL PAGANO RECOVERS THIS SENSE OF WONDER AND  
OPPORTUNITY, PROVIDING A MULTIFUNCTIONAL SOCIAL HUB WITH  
THE HANGAR AT ITS HEART. THE NEW WING LEVITATES ABOVE THE  
ORIGINAL HANGAR AS IF READY TO "TAKE OFF" FROM THE  
ORIGINAL RAMP.*

*TERMINAL PAGANO IS THE STARTING POINT FOR A DAY OFFERING  
A UNIQUE CO-WORKING/STUDY ENVIRONMENT. THE HANGAR HOSTS  
A FOOD COURT WHERE LOCALS AND VISITORS CAN SHOP, EAT AND  
DRINK. THE RAMP HOSTS ADDITIONAL CAFES, BARS AND TERRACES  
WHILE THE AIRBORNE RESTAURANT TAKES DINER ON A FLIGHT  
ACROSS THE RIVER IN INDIVIDUAL CABLE CAR PODS.*

*TERMINAL PAGANO REUNITES PAVIA WITH THE RIVER WITH A  
PROMENADE AND BRIDGE CREATING A CIRCULAR ROUTE ON TWO  
LEVELS WHILE PRESERVING THE MAGICAL ELEMENT OF THE  
ABUNDANT FLORA AND OFFERING INVITING BATHING POOLS AND  
FLOATING CAFÉ PODS.*

*WHEN THE SUN GOES DOWN, THE BARS, TERRACES AND RESTAURANTS  
COME ALIVE AND THE THEATRE IN THE SKY BECOMES A CINEMA.*

*DESIGN INTERVENTION BY CLAUDIA DORMAN-ALONSO*

*TICINO, LIFE OF THE CITY, THE PLACE WHERE WE COME  
TOGETHER, TIME AND TIME AGAIN...*

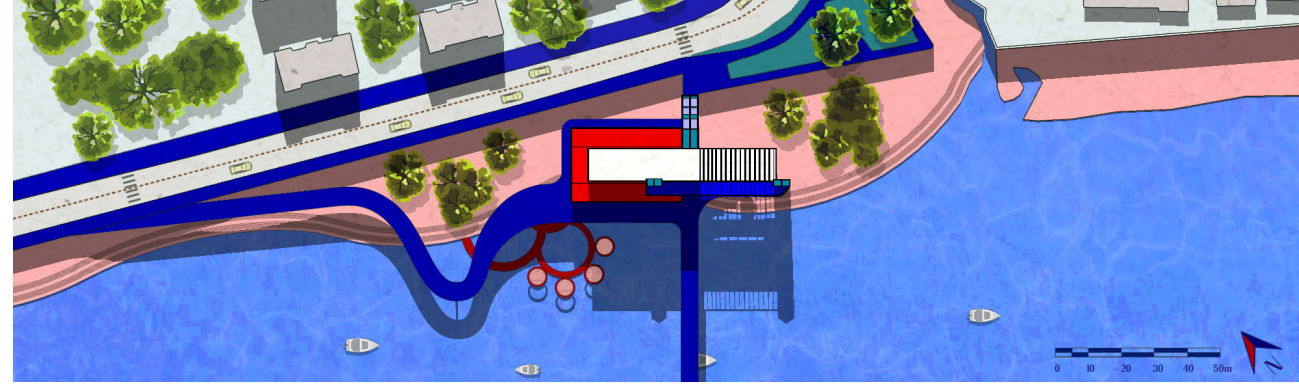


# *TERMINAL PAGANO*

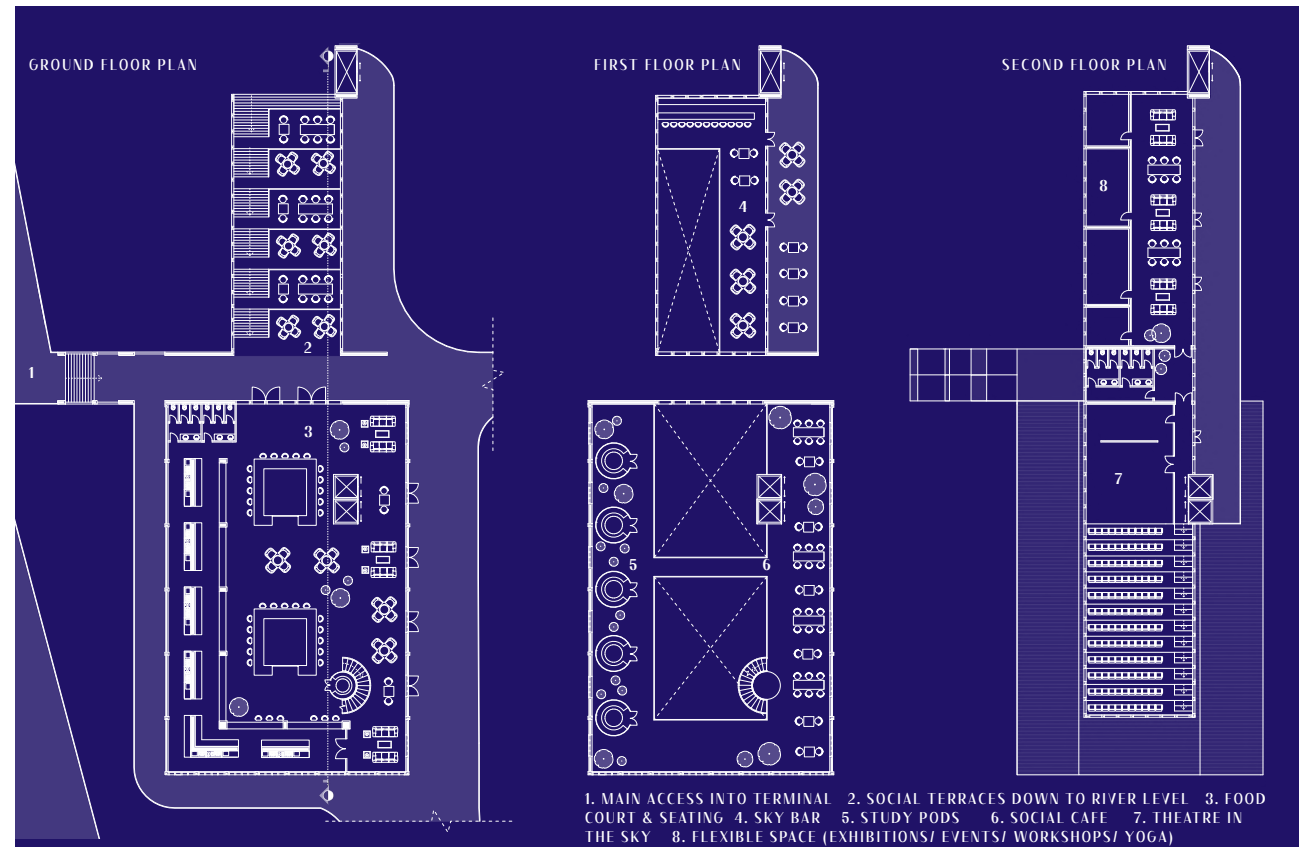
WORK - PLAY - EAT - RETURN



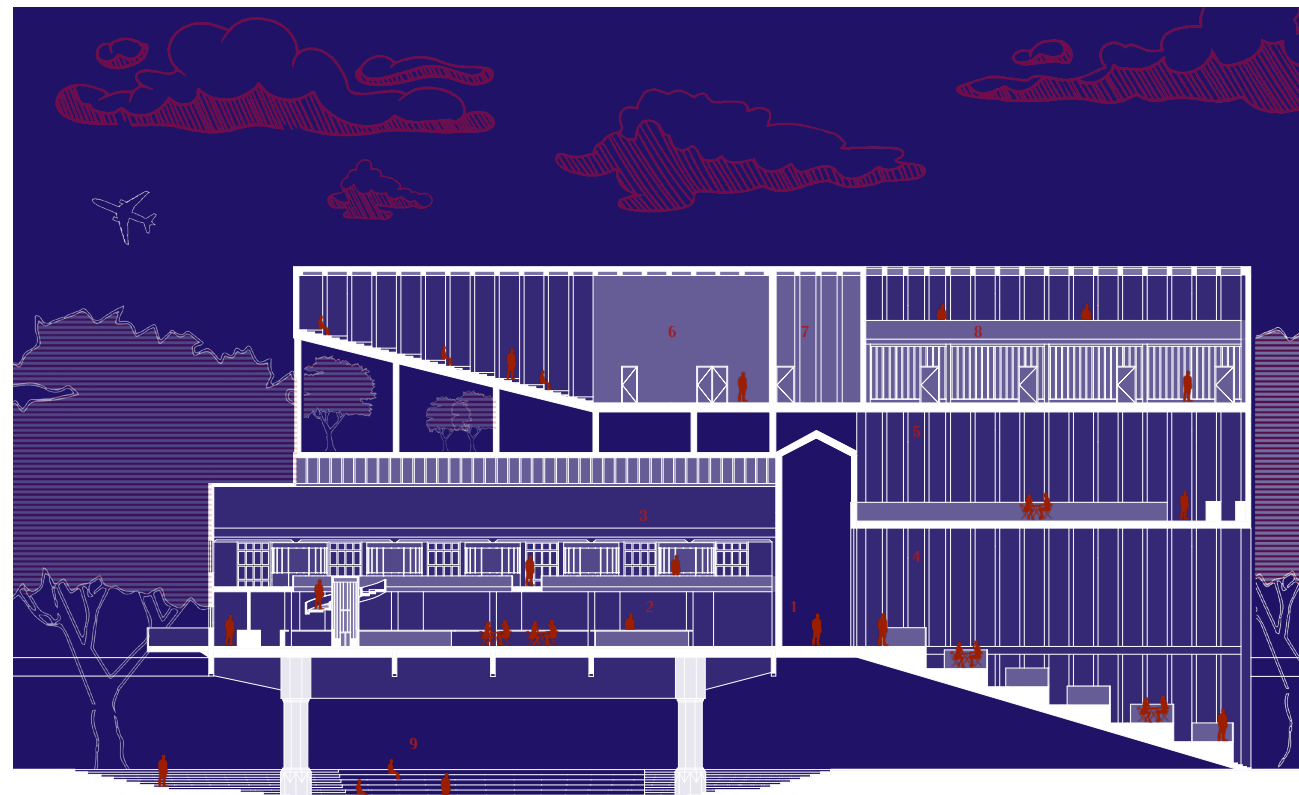
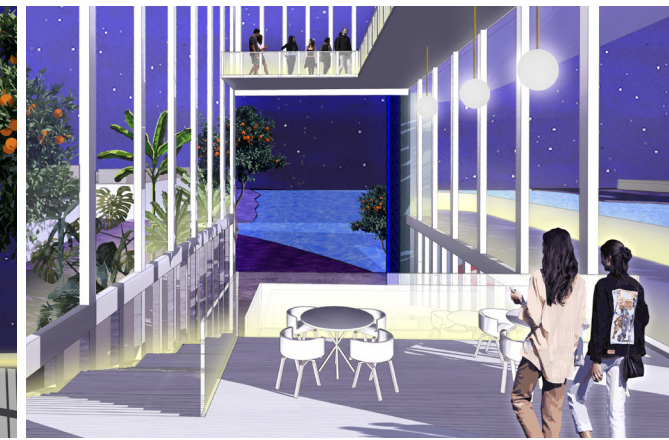












1. MAIN ACCESS INTO TERMINAL      2. FOOD COURT & SEATING      3. STUDY PODS      4. SOCIAL TERRACES DOWN TO RIVER LEVEL  
 5. SKY BAR      6. THEATRE IN THE SKY      7. RELAX AREA AND BATHROOMS      8. FLEXIBLE SPACE (EXHIBITIONS/ READING AREA/ EVENTS/ WORKSHOPS/ YOGA)      9. RIVERFRONT LANDSCAPING WITH STEPS AND INTEGRATED SEATING LEADING TO RIVERSIDE POOLS AND FLOATING CAFE PODS



# ***AFTER THE COMPETITION***





## STRUCTURAL CONCEPT

The diagram shows two cross-sectional views of structural systems. On the left, 'SYSTEM A' shows a white rectangular block labeled 'EXISTING' supported by two columns, with a blue hatched area labeled 'NEW' extending from its top. On the right, 'SYSTEM B' shows a similar white block labeled 'EXISTING' supported by two columns, with a blue hatched area labeled 'NEW' extending from its side. Below the diagrams, the text 'EACH SYSTEM IS SELF SUPPORTING' is written.

This 3D exploded view diagram illustrates the structural renovation process in four numbered steps:

- 1. EXISTING REINFORCED CONCRETE PILLARS**: The base of the structure, shown as a multi-story building with a grid of columns.
- 2. REINFORCED CONCRETE STRUCTURE WITH BRICK AND STUCCO INFILL**: A new structure built on top of the existing pillars, shown as a rectangular block with a grid of columns.
- 3. REINFORCED CONCRETE LARE NTHE MAIN LOAD BEARING ELEMENTS FOR NEW STRUCTURE (LIFT SHAFTS ENCASED INSIDE)**: Two vertical concrete pillars shown rising from the base structure.
- 4. NEW STEEL FRAME STRUCTURE BOUND TO LIFT SHAFTS**: A new steel frame structure shown rising from the concrete pillars, with a callout showing a detail of the frame bound to the shafts.

Dashed lines connect the components to show their relative positions and how they integrate into the final structure.

*EXISTING*

*SYSTEM A                      SYSTEM B                      EACH SYSTEM IS SELF SUPPORTING*

*SYSTEM A                      SYSTEM B                      EACH SYSTEM IS SELF SUPPORTING*

*SYSTEM A                      SYSTEM B                      EACH SYSTEM IS SELF SUPPORTING*

4. NEW STEEL FRAME  
STRUCTURE BOUND TO LIFT  
SHAFTS

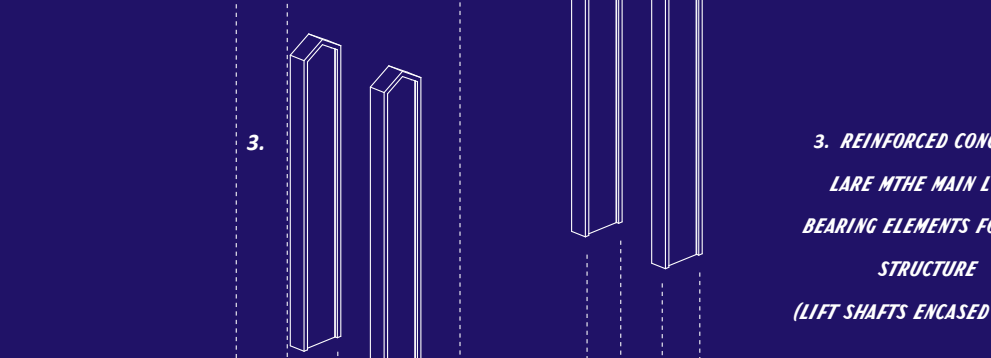



Diagram 3 illustrates the third method of shaft repair: reinforced concrete shafts encased inside existing shafts. It shows two vertical shafts. The left shaft is a simple rectangular column. The right shaft is a larger rectangular column with a smaller rectangular column inside it, representing the new reinforced concrete shaft encased within the existing shaft. The diagram is labeled with a large '3.' on the left and descriptive text on the right.

**3.**

**3. REINFORCED CONCRETE  
SHAFTS ARE THE MAIN LOAD  
BEARING ELEMENTS FOR NEW  
STRUCTURE  
(LIFT SHAFTS ENCASED INSIDE)**

2. REINFORCED CONCRETE  
STRUCTURE WITH BRICK AND  
STUCCO INFILL

1. EXISTING REINFORCED



1. EXISTING REINFORCED CONCRETE PILLARS











***THE END***

Three white wavy lines are positioned at the bottom right of the image, overlapping each other and extending towards the right edge.







*THE COMPETITION CALLED FOR THE PROTECTION AND ENHANCEMENT OF THE HISTORICAL CHARACTER OF THE ORIGINAL BUILDING. THE IDENTIFICATION AND THUS PROTECTION OF THESE CULTURAL, ARCHITECTURAL AND HISTORICAL VALUES SHOULD NOT BE UP TO THE SUBJECTIVE INTERPRETATION OF THE APPOINTED DECISION MAKER BUT INSTEAD SHOULD CONSIDER THE VIEWS OF ALL STAKEHOLDERS. THE DIVERSITY OF THE PROJECTS SUBMITTED BY THE PARTICIPANTS, INCLUDING MYSELF, IN WHAT WAS CONSIDERED AS THE IMPORTANT FEATURES OR ELEMENTS THAT SHOULD BE SAFEGUARDED*

*SUGGESTS A VAGUENESS IN THE INTERPRETATION OF THE HISTORICAL CHARACTER OR WHAT REHABILITATION IS. MOREOVER, THE AWARDED PROJECTS WERE VERY DIVERSE IN THEIR INTERPRETATION OF THE BRIEF, SUGGESTING THE JUDGES DID NOT SEEM TO BE FOLLOWING ANY SPECIFIC CRITERIA REGARDING THE VALUES THAT SHOULD BE PRESERVED. THERE IS A LACK OF ESTABLISHED AND WIDELY ACCEPTED PROCEDURES AND METHODOLOGIES FOR ASSESSING THESE VALUES. YET, HOW CAN UNDERSTANDING OF THE "IDENTITY" AND "CHARACTER" OF THE BUILDING VARY SO MUCH?*

*BUILT HERITAGE HOLDS TOO MUCH IMPORTANCE FOR SOCIETY TO BE TREATED WITH VAGUENESS. A CLEAR AND INCLUSIVE VALUE-BASED MANAGEMENT STRATEGY IDENTIFYING THE TANGIBLE AND INTANGIBLE FEATURES OF HERITAGE BUILDINGS IS NEEDED. WHY DOES THE TERM REHABILITATION CURRENTLY TRANSLATE INTO SO MANY UNDERSTANDINGS? IS IT TOO LOOSE A CONCEPT CONSIDERING THE RESPONSIBILITY AND IMPORTANCE IT HAS IN SOCIETY? AT THE SAME TIME, THERE IS A SPLENDOUR IN THE DIFFERENT WAYS IN WHICH A PERSON CAN TAKE A BUILDING AND TRANSFORM IT TO BRING NEW LIFE TO IT.*

*THERE MUST BE SPACE FOR THIS OPENNESS AND FLEXIBILITY TO AVOID A RULE BOOK THAT DICTATES AND LIMITS CREATIVE FREEDOM. THE REHABILITATION IN THIS CASE REQUIRED A CONTEMPORARY DESIGN INTERVENTION, PRIORITISING THE VALUES TO BE PROTECTED AND THOSE WHICH COULD BE TRANSFORMED. EACH STAKEHOLDER WILL HAVE THEIR TAKE ON WHICH VALUES TO CONSIDER BUT SURELY, THIS PRIORITISING SHOULD BE DONE IN AS OBJECTIVE AND HOLISTIC WAY AS POSSIBLE FOLLOWING CLEAR GUIDELINES?*





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# Value-Based Rehabilitation Decision Making Framework

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## Application of Case Study: Idroscalo

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The second chapter focused on the main values that are generally detectable in cultural heritage buildings. In this part, we use these different values and apply them to the case study of the Pavia Hangar, in order to demystify the character and thus understand the most important features that should be conserved. The thesis provokes the idea that there is a more objective and correct decision making process when dealing with modern heritage buildings. Here a framework is suggested and applied to the case study. It is important that each rehabilitation project undergoes its own independent study following the same procedure, as each project has different factors to consider and each building has different cultural, architectural and historical values to be protected.

“In fact, the designer’s taste should not influence his perception of the building. He is a professional and should deal with a building objectively, just as a doctor dealing with his patient. It should not matter if the patient is short or tall, ugly or beautiful, blond or brunette, etc. Prior to any prescription, the designer should analyse, synthesise and evaluate the ‘patient’” (Pereira-Rodgers, 2007, p.20).



Although value assessment plays a key part in the rehabilitation framework, there are many factors that affect the process. The heritage building should not be studied or taken as a single object, but instead assessed within a frame of the whole district. The chapter proposes a set of steps and criteria in the type of information that should be gathered in order to then make a more informed judgement in what should be prioritised. The table below by Misirlisoy and Gunce (2016) shows a list of identified factors from a literature survey and relevant research studies carried out by them. The thesis will not cover all these aspects, focusing mainly on the tangible and intangible heritage values, as well as defining the actors in the decision making process and the needs of the district and project goals. The identification and combination of these different factors will directly shape the decision of the selected new function.

	<b><i>FACTOR</i></b>	<b><i>RELEVANT RESEARCH STUDY</i></b>
1.	<b><i>ACTORS</i></b>	Kincaid, 2000
2.	<b><i>ANALYSIS OF EXISTING FABRIC</i></b>	
2a.	<b><i>ORIGINAL FUNCTION OF BUILDING</i></b>	Douglas, 2002; Latham, 2000; Cantacuzino, 1975
2b.	<b><i>PHYSICAL CHARACTER</i></b>	Kincaid, 2002; Engel, 2007; Stratton, 2000; Latham, 2000; Clark, 2001; Rabun and Kelso, 2009; Watt, 2007; Forsyth, 2007; Ching, 2002
2c.	<b><i>HERITAGE VALUES</i></b>	Robles, 2010; Orbasli 2008; ICOMOS, 1999; Mason, 2002; English Heritage 2008; Feilden 2003
2d.	<b><i>NEEDS OF THE DISTRICT</i></b>	Lynch, 1960; Tutkun, 2009; Douglas, 2002; Campbell, 1996
3.	<b><i>CONSERVATION ACTIONS</i></b>	Orbasli, 2008; Brooker and Stone, 2007; ICOMOS, 1964; Jokilehto, 1999
4.	<b><i>ADAPTIVE REUSE POTENTIALS</i></b>	Conejos et al, 2012; Conejos et al, 2011; Bullen and Love, 2011a; Bullen and Love, 2011b; Bullen and Love 2011c; Wang and Zeng, 2010; Langston, Wong, Hui & Shen, 2008; Heath, 2001
5.	<b><i>FUNCTIONAL CHANGES</i></b>	Douglas, 2002; Latham, 2000; Cantacuzino, 1975

Fig 36 - “Literature survey on the factors affecting adaptive reuse decision-making” (Misirlisoy and Gunce, 2016, p.93)

The paper will not look into regulations, and considers this case study in the way it was presented in the competition, with no constraints or planning regulations. However, this is a critical factor that will of course, vary from one context to another due to different policies that exist in each country.

As we have seen the actors represent different stakeholders, at the level of the people, the experts and the authorities. It is imperative that the perspectives of the actors are explored and defined, as only taking into account all the actors will the most appropriate decisions be made.

Moreover, an analysis in terms of needs of the district should be carried out in order to define the broader goals and aims of the project by the decision makers, as well as an investigation into what the locals need. In terms of the decision makers, the motivation can many times be economic potential of the rehabilitation process for example, whether it be exploiting it through commerce, use, amenities or tourism. Although this needs to be considered, it is important that profit driven interventions don’t end up damaging or even destroying the heritage building. Reaching an agreement and being able to find a way of addressing the different needs of the district is a very important step.

Following from this, the next important step is a condition assessment so as to survey the state of repair or the building. It is critical to know what state the building is found in, to identify not only potential structural capacity problems but also the deficiencies in fabric, form and components and what caused that condition. The thesis will briefly cover this, but of course a professional survey analysing these factors would be required for a successful rehabilitation.

Ultimately, there is the significance assessment, in which the character, meaning and heritage values are identified with the aim of distinguishing specifically why that building is of value (ICOMOS Australia, 2000). This includes an investigation into the physical characteristics of the building, such as the style and period, the materials, the construction methods and the character-defining features. As well as an evaluation of the spirit and emotional realities of the building. The later of course is harder to understand as we have no tools in place to do this.

“To speak of the ‘spirit of the place’ and, I would add, the ‘atmospheres’, means to refer to all that resists quantification and consequently, to that which our culture, for decades now, has decided to eliminate from our readings of architecture” (Fiorani et al, 2017, p.228).

This assessment requires the decision makers to research and gather enough information to understand the significance, by using different sources and tools including documents, photographs, original drawings, observation, site survey, interviews and questionnaires. Relating to the intangible values such as meaning, traces of memories or atmosphere specially require a direct interaction with the different stakeholders. The understanding of the culturally associated meaning is of prime importance, as many times rehabilitation projects don’t look into the importance of a building to a community “privileging historical meanings over those of the geographically and/or culturally associated communities” (De la Torre, 2002, p.37). This can cause an unsuccessful intervention as it “often promotes friction and local disagreements” (De la Torre, 2002, p.37).

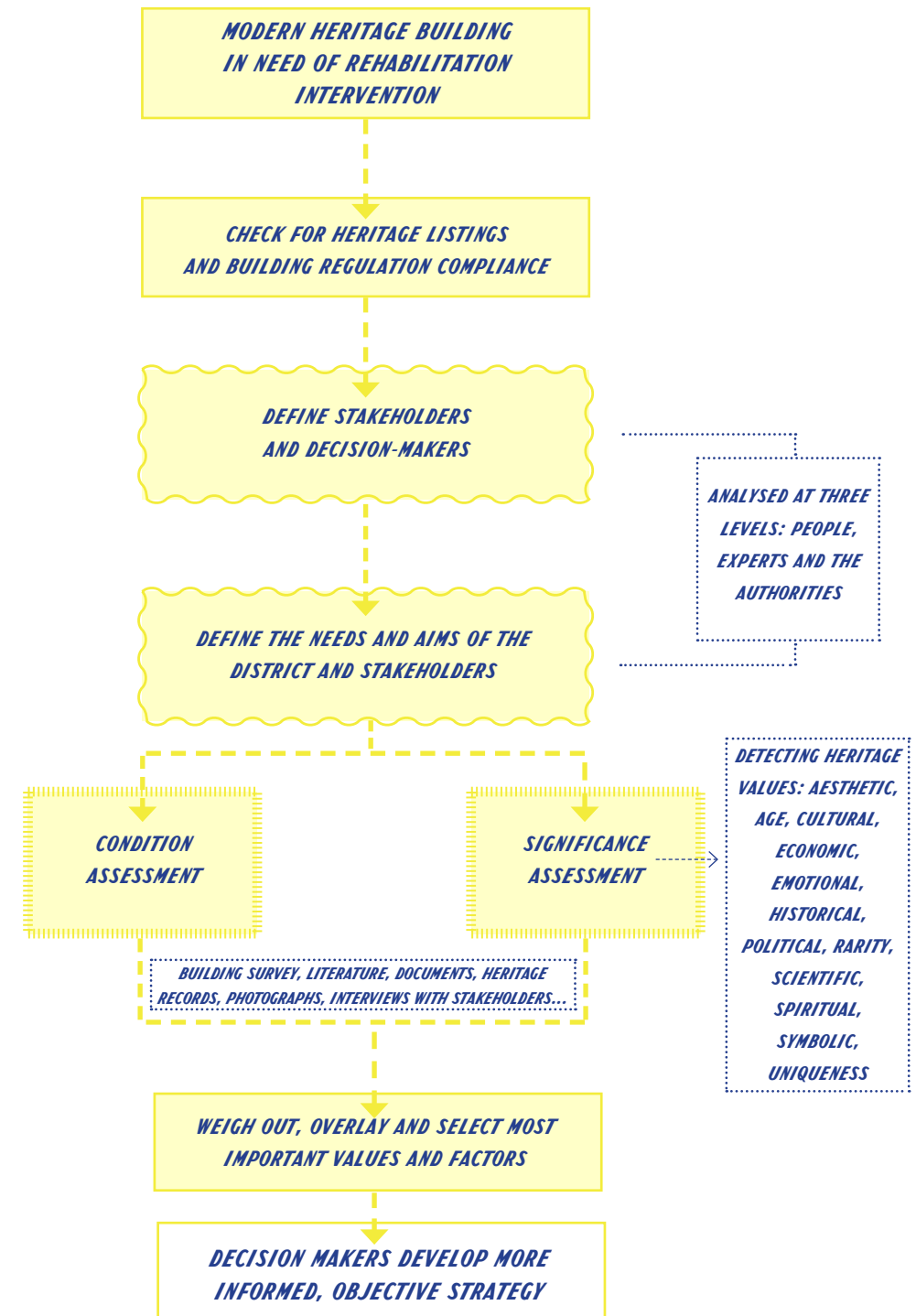


Fig 37 - Thesis framework for value-based rehabilitation decision making



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# Definition of Stakeholders & Decision Makers

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The first part of the framework requires identifying all the different actors involved in the intervention. The stakeholders include anyone who will be affected by the process in a direct or indirect way. Some of these stakeholders will contribute in the decision-making process. Thus all the decision makers are stakeholders, but not all the stakeholders will be involved or allowed to participate in the fate and future of the project.

As is seen in the paper “The semantic conservation of architectural heritage: the missing values” – the authors investigate and conclude that the conservation of architectural heritage can be studied at three levels, the “people, experts, and governments” and that only by involving all of these stakeholders can a successful conservation project be made (Taher Tolou Del et al, 2020, p.10). These three social groups encompass both the primary as well as the secondary actors.



**AUTHORITIES**



**EXPERTS**



**PEOPLE**



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## AUTHORITIES

Under this category we can normally include the main decision makers. These are the actors that are considered leaders of the management and execution of the rehabilitation project, for example, the investors which may be a private owner or company or a public body such as the government or similar institution. It can also include the regulators including planning authorities or municipal departments that deal with conservation of heritage buildings that give permission and monitor the project. These bodies are essential in guaranteeing that the priceless elements of national or local legacy are protected. On the other hand when the investors are private actors, such as property developers- they tend to focus on and exploit the commercial worth that the heritage building could potentially offer them.



## EXPERTS

This category includes architects, restoration experts, engineers, designers, historians and archaeologists, usually appointed by the authorities in order to share their high degree of knowledge and expertise dealing with heritage buildings. Normally, these actors tend to be less focused on the economics than the authorities, but the sensibilities and opinions of each actor can vary a lot within this grouping. For example, the archaeologists, conservationists and historians look more into the historical features and are more conservative in protecting the heritage values of the original building. The architects and designers look at the intervention not just as conveying the past but also as an expression of our current time, leaning more towards aesthetics and functionality.



## PEOPLE

Under this category we find the members of the public, the constituents, the locals, the users, the visitors. There are two types of users, firstly those for whom the building was originally designed and who inhabited the building during its initial function- which in the case of the Pavia seaplane hangar does not apply. The second type of users are the locals of the district and the potential users of the building.

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Up until now this last category has, for the most part, not been taken into consideration in the decision making process or participated in the work carried out by experts. This is because of the belief by many experts that “decisions about cultural assets should not be left in the hands of the public, thought to be too ignorant about cultural goods to possibly be able to make sensible judgments about them” (De la Torre, 2002, p.63).

Evidently the experts play a vital role in dissecting the building, they have experience and more tools to identify and assess certain values. However, cultural heritage is important to society at large. It describes our past and evolution, giving people a sense of place and creating the unique identity of a community. Most of the social values, collective memories and emotional or spiritual ideals that have been mentioned in the previous chapters – relate to the locals, the members of the public. As much as an expert can study certain values, only the people who have grown up with the building and for whom the heritage represents meaning, can understand the intangible values that are carried through it.

It is an agreed notion that participation, which may take the form of surveys, interviews or focus groups, is a valuable part of the rehabilitation process. We are becoming increasingly aware of the importance of incorporating all the stakeholders in the process, balancing both bottom up as well as top down approaches. “Today the opinions of experts are often a few among many, in an arena where it is recognized that heritage is multivalent and that values are not immutable” (De la Torre, 2002, p.3). Fundamentally heritage belongs to and is a reflection of the people thus experts and the authorities should thoroughly understand the value it has for ordinary citizens and “be open to other, nonexpert views about heritage values and decisions and embrace alternative ways of understanding value, negotiating differences, and so on” (De la Torre, 2002, p.18).

De la Torre, goes on to give an example of how a heritage church would have a range of values attributed to it, such as aesthetic for its beauty, spiritual for its function as a place of worship, historical for its age value and the events that happened there, economic for its value as real estate as well as many more. In the parts that follow the Idroscalo will be dissected in the same way. However, the critical question that arises here is “How can the wide range of heritage values be identified and characterized in a way that is relevant to all the disciplines and stakeholders involved?” (De la Torre, 2002, p.6). In this framework the aim is to find an agreement, assessing the different values and needs to see the overlaps and understand what should be prioritised, in order to find a decision that accounts for a range of views from all the relevant stakeholders.

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The information below on the history of the ownership is taken from different articles over the last few years by “La Provincia Pavese” which is the main paper of the province of Pavia. It is important to understand the changes in the decision makers from the buildings construction until now. The Pavia seaplane facility was inaugurated in 1926 and in 1939 became the property of the Ministry of Aeronautics – remaining in use until 1942 when SISA was acquired by the Mediterranean Air Company and ultimately closed down. When the second world war ended the building was used for boat storage by Carlo Saglio and then after by Battellieri Colombo. However, from 1981 onwards the Idroscalo was permanently abandoned and has experienced a slow deterioration.

In 1999, the structure was bought from the state by the real estate company “Arcobaleno” which was owned by the builder and entrepreneur Carmine Napolitano at a cost of one billion lire, which would now be equivalent to about 516 thousand euros. He is still the owner of the building to this date. Although, since the end of the war there have been many proposals for the rehabilitation and reuse of the building, none of them were actually materialised.

More recently, the architect Luisa Marabelli, was assigned with the task of the recovery of the Idroscalo and submitted her signed proposal with a projected cost of four million euros which involved a permanent exhibition space as well as a restaurant with local products. In 2017 the Landscape Commission gave the green light to this redevelopment of the heritage building. However, in 2018, the owner, Napolitano declared that due to bureaucratic obstacles as well as because of other projects he was focusing on, he no longer wanted to continue with the intervention.

The city planning councillor, Massimiliano Koch, clarifies that although the structure still remains privately owned the hope is that once it is rehabilitated it can be used for public functions such as cultural events. Of course, this is so long as the private sector finds the deal convenient. Koch states that “it is a question of evaluating whether to proceed with an agreement or with a sale. We have met the owner, Napolitano quite recently, and on his part it seems to us that there is a willingness to resume the dialogue on this historic structure” (Merli, La Provincia Pavese, 2021).

It is important to distinguish between all the stakeholders and the decision makers of the TerraViva Competition in discussing the results of the competition as opposed to how the eventual real life intervention should be if it is to include all the stakeholders. This will allow for the examination and analysis on the current way in which rehabilitation competitions for modern heritage buildings are organised and evaluated.



### The Decision Makers (the Jury of the Competition)

German Fuenmayor (*PIUARCH*)  
Anastasia Kucheroa (*Stefano Boeri Architetti*)  
Filippo Imberti (*TSPA*)  
Toufic Rifai (*Politecnico di Milano*)  
Lorenzo Degli Esposti (*Degli Esposti Architetti*)  
Lucia Paci (*OPERASTUDIO*)  
Bogdan Peric (*Untitled Architecture*)



Mariangela Singali Calisti (*Comune di Pavia*)



On Tuesday 04/01/2022 all the jury members expressed their votes and the “Top 30” finalists were selected. On Wednesday 05/01/2022 the second phase of the evaluation process officially started where a deeper analysis of the selected proposals was carried out during the following 5 days by all the jury members.

TerraViva states that the decision makers were “Chosen from well known academic institutions and international firms, our jury members are highly qualified to evaluate the proposals thanks to their specialised knowledge and experience in design and architecture”

### Promoters of the competition

Comune di Pavia  
TerraViva Competition  
Confedilizia Pavia



### Partners of the competition

Stefano Boeri Architetti  
Untitled.  
Operastudio  
Degli esposti architetti  
Piuarch  
TSPA



Although not included in the decision making for the competition, below are the other decision makers in the case that the rehabilitation went ahead:

### Owner of building



The builder, Carmine Napolitano

### Comune di Pavia, including:



Fabrizio Fracassi  
(Mayor)

Antonio Bobbio Pallavicini  
(Deputy Mayor and Councilor: Public Works, Mobility, Infrastructure and Transport)

Mariangela Singali  
(Councilor: Culture, Museums, Events and Territorial Marketing)

Massimiliano Koch  
(Councilor: Urban planning, private construction, one-stop shop for productive activities, environment, urban decor, greenery and energy policies)

### Planning Authorities



### People



Local communities  
Possible users  
Other groups or communities for whom the building has meaning to

**Regarding the competition, the decision makers were nearly all experts, except for one person from the authorities. Before a final decision is reached by the owner and the authorities- more research will need to be done into what the people of Pavia and the authorities actually want to achieve and how the heritage building should be dealt with.**

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# Define the Needs of the Stakeholders & Ambitions of the District

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Once the stakeholders have been defined the next step is to include the aspirations and needs of each of them. The modern heritage building which has been abandoned, must find a new function. “If there is no threat against the significance of the built heritage functional variation should be supported according to the needs of the district” (Misirlisoy and Gunce 2016, p.97). The Council of Europe goes on to say that “encouragement should be given to finding new uses which take account of the needs of present-day life so that buildings are not allowed to fall derelict” (Council of Europe, 1991).

These needs might not just be limited to actual use of the building, but on a larger scale what the interventions ambition is. It could be a catalyst in redefining an abandoned district or spurring tourism into the area. The inclusion of all these perspectives and needs is critical for a successful rehabilitation project. This means that the authorities must listen to both the experts and well as the people, even if they believe they have understood what benefits the building and the district themselves. An investigation, supported by participatory methods such as interviews and questionnaires to the potential users and locals is essential.



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## Needs and Goals of the Intervention Stated by Competition Brief

With regards to the new function:

 A CONTEMPORARY INTERPRETATION TO THE PROGRAM	 PARTICULAR RELEVANCE TO THE YOUNGER GENERATIONS
 PARTICULAR ATTENTION TO THE SOCIAL & CULTURAL DIMENSION & OPEN TO THE LOCAL COMMUNITY	 CREATION OF AN ANIMATED & BUSTLING COMMUNITY HUB LIVED 7 DAYS A WEEK

With regards to the overall goals of the district:

 THE INTERVENTION SHOULD BE THE FIRST STEP OF THE AMBITIOUS RIVER-FRONT REDEVELOPMENT PROJECT	 TO TAKE ADVANTAGE OF THE SCENIC LOCATION, RETURNING THE CENTRALITY THE BUILDING & SITE ONCE HAD IN THE CITY
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### What Function Would You Like to See the Idroscalo Used for?

- [illegible]

FRAMEWORK | 157

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# Condition Assessment

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The next important step is a condition assessment so as to survey the state of maintenance of the building. It will reveal any serious flaws in the structure and fabric. It is critical to know what state the building is found in, to identify not only potential structural problems but also the deficiencies in fabric, form and components and what caused that condition. Based on this survey, the architect and decision makers will be able to understand the limits, constraints and requirements of the intervention, contributing to establish the aims for the design development. This step in the framework is relatively straightforward compared to the significance assessment as “most parameters are easily measurable and can be surveyed, without the influence of subjective interpretations of the designer” (Pereira-Rodgers, 2004, p.129).

Moreover, in terms of heritage rehabilitation it is important to understand the state of abandonment, the way it has happened, for how long and why. Many times functional obsolescence can be calculated by examining the flexibility of the building - as usually the useful life will increase the more capable of change the heritage building is. For modern heritage and especially industrial buildings, this index tends to be higher, although in the case of the Pavia seaplane hangar, despite having a large, open area that would be well fitted to adaptive reuse- the building has remained forgotten for a significant part of its life.

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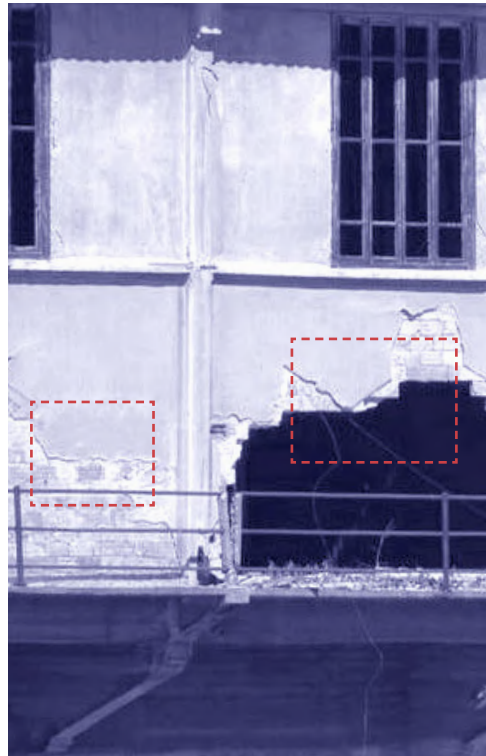
The way in which we deal with a heritage building that has always been kept intact and valued is surely different to a building that has been neglected for a long period of time- as is the case with the Pavia seaplane hangar.

After the war the Idroscalo was handed over as state property and for a period of time it was used for seaplane and boat storage. Later, in 1981, the structure was totally decommissioned and despite being sold to a private owner in 1999, it has remained abandoned and isolated from the rest of the city up until this day. In spite of this, the building still stands majestically and recognisably over the Ticino River, managing to keep its rationalist features and intriguing nature clearly identifiable. As can also be seen in the images, the best kept element is the reinforced concrete load-bearing structure. Consisting of the exposed reinforced concrete slab, supported by large cylindrical pillars, the pillars that support the steel trusses of the roof and finally the supporting structure that accompanies the rails for towing the aircraft. The entire hangar unloads its weight on the ground through four pillars.

The brick and stucco façades, have large portions missing and must be reviewed. The external plaster is also evidently in critical condition and peeling as well as the wooden windows which are broken and with smashed glass. However, substantial parts of the façade including the rhythm of the columns and window as well as some of the original architectural detailing have survived. The other parts in critical condition are the most exposed elements like the sloped beams of the external service structure, the external balcony and the roof. The later needs to be completely substituted as it still has Eternit panels and thus implies environmental risk. The structure consisting of the pillars of the roof has some elements in good condition, apart from those at the corner which show uncovered iron. The roof trusses do not appear to be prone to corrosion, although a more careful analysis will need to be performed. Finally, another fundamental point of concern is that of accessibility, as in 1995 the walkway that once connected the building to the mainland was demolished, leaving the building completely inaccessible and isolated.

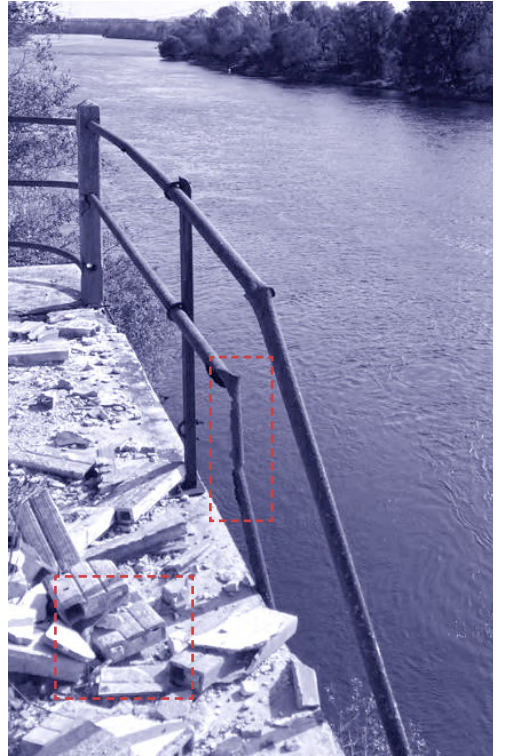
The photos over the next few pages, reveal the state of conservation for the most part, but of course, a professional survey analysing these factors, particularly the structural capacity of the building would be required for a successful rehabilitation.





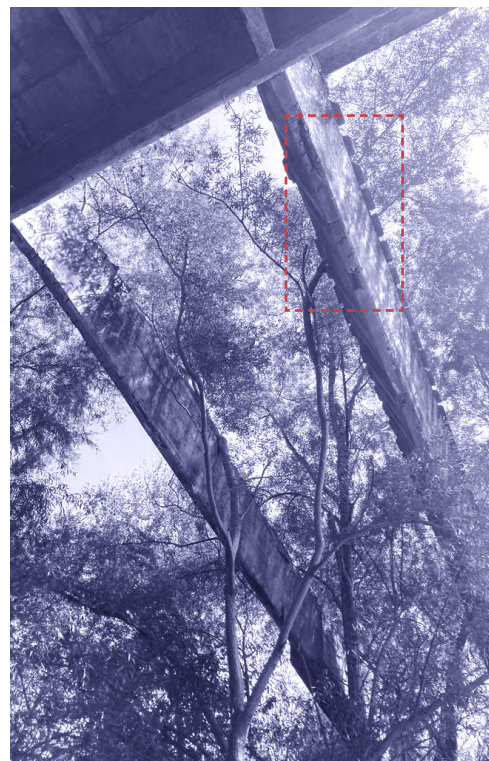
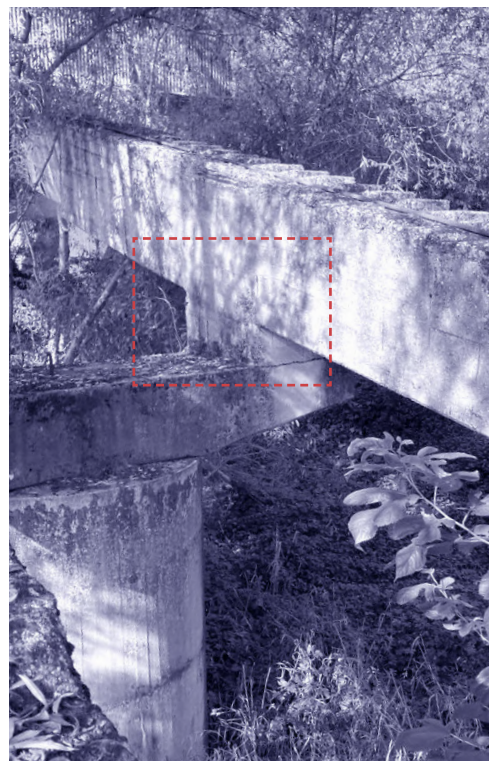
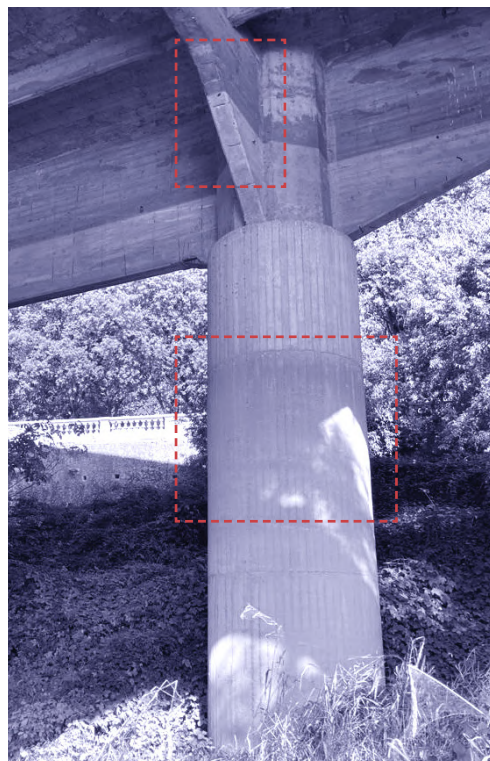
Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021





Photographs: Claudia Dorman-Alonso, 2021

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# Significance Assessment

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## Detecting the Heritage Value of the Idroscalo

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### *Aesthetic value*

We can consider different criteria when studying the aesthetic value of a building, this can include creativity, imagination, innovativeness, functionality and attractiveness. For the Idroscalo, being a modern heritage building, it was built to be functional and is a testimony to the changes that defined the 19th and 20th century. The building adheres to a logic and rationality in which there is perfect correspondence between the purpose it would have to serve and its architecture. The Idroscalo's strong and unquestionable aesthetic value, thus comes more from its artistic, functional and innovative architectural typology, as opposed to primarily its attractiveness, as is the case with many heritage buildings. The seaplane hangars were usually built resting on the water, as were the Venice and Trieste ones, thus the project for the Pavia seaplane base was visionary. The innovative river airport was very ambitious for its time, the reinforced concrete structure consisted of a concrete platform that rested on a series of pilasters about seven meters high above the water and was capable of accommodating four seaplanes. It is an expression of the modern design of the time and the new functional life.

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Its aesthetic value lies in its majestic and original form. The peculiar typological characteristics of the building which were dictated by the program itself include the heaviness of the structure, elevated position on the river bed, the distance from the mainland which makes it seem like its floating off and the rotation of the angle of building in respect to that of the road. These physical characteristics and their relationship to the surrounding landscape have become central to the urban fabric of the city.

The individual details and physical elements of this heritage building communicate the aspirations and needs of those that first built and occupied it, they are the features that give it character and form its identity. The highly distinctive and characterising features include the tracks for towing the seaplanes into the structure, which entails two service tracks made of reinforced concrete, that start off usually submerged under water. Another distinct element that describes the original function is the large opening in which the hydroplanes entered the building on the east façade. Moreover, the way in which it was identified in Pavia from 1926 up until 1942 was through its house number, "51", which despite the decay and abandonment can still be seen above the front door.

With regards to the style, there is a combination of both a strong and determined rationalist appearance, as well as classic and decorative early 20th century features. The rationalist design is strong in form and has modular and symmetrical façades, with an easily identifiable rhythm made by the windows and concrete pillars. The decorative elements on the other hand include engravings of geometric shapes which can also be seen on the exterior walls as well as other ornamental elements on the cornices.

### *Age value*

The Pavia seaplane hangar was built in 1926 with a grand inauguration and the first flight from Turin to Trieste on the 1st of April 1926. The building will soon celebrate its 100th anniversary. However the base only remained in operation until 1942, and apart from a partial recovery in 1992 has been left permanently abandoned. It has not experienced any rehabilitation, modifications or changes and although projects have been discussed and proposed many times, nothing actually has materialised. So far the passing of time and different generations have not made any changes or additions or new interpretations to the building. The building remains more or less intact as the architect designed and intended it to be, honest and true to the original design and function.



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Due to the building being neglected however, the passing of time is evident and the age of the building is clearly palpable. In fact, Reigl defined “age-value” with reference to evidence of this aging or decaying. We consider this a value in itself as it can evoke a sense of nostalgia, respect and curiosity. This will be further explored when studying the intangible values of the building through the people of Pavia.

#### *Economic value*

There are various possible sources of income that derive from the economic value such as commerce, use, amenities and tourism, the possibilities of these come from an understanding of the other values it carries. In the case of the Pavia seaplane base, due to its strong historical past, the heritage building could potentially exploit all of these sources. The municipality would like the building to serve as a cultural centre of some kind, open to everyone. Moreover, the councillor for culture and tourism, Giacomo Galazzo states that, “the position of the Idroscalo is strategic to promote those tourist-cultural routes linked to the typicality of the territory, of the river. It has an unparalleled water front”.

In its past, the building made a strong contribution to the economic development of not only Pavia, but also Italy. Although due to its state of abandonment it might be hard to imagine it being of economic value to the city, there is a high market opportunity as it has all the ingredients to contribute once again. In fact, the scenic location on the Ticino River and the incredible panoramic view of the Ponte Coperto and the Bargo Ticino, as well as its close proximity to the historic centre, create all the conditions for it to become one of the most popular places for the people of Pavia as well as attracting visitors and tourists.

This project foresees and anticipates that there will be an immediate benefit from the rebirth and rehabilitation of the structure that would benefit all the actors involved. In fact there is so much belief in the long-term economic and cultural return of this building that it has become a crucial and first step of the water front project promoted to redevelop the Ticino embankment. The Pavia Municipality presented this water front project to the European Union and applied for a grant of 15 million euros. In the case of the Idroscalo, the rehabilitation involves more than just that of the building itself but instead is an opportunity for the city to engage in the widespread redevelopment and enhancement of an entire part of the city that currently is not offering anything and not exploiting its potential worth.

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#### *Historical value*

This value is linked with people or with events from our past, as well as what it once stood for and the historical memory that has developed and been established from it in the city of Pavia. The ability of the heritage building to embody, express or create a relationship to the past is crucial. Of course, this value will also be further explored when studying the intangible values of the building through the people of Pavia.

The Idroscalo has an unquestionable historical significance which inspires respect and piques the visitor’s interest. The project is framed in a period of great development for the aeronautics field in both military and civil terms. The venture was formed by the Consulich brothers and became Italy’s first civil aviation line operating in Italy, making history. It was an ambitious project at the time that transported both products and passengers from one region to another in the North via seaplane. The project represented the principles of the time, focusing on modernity, progress and exalting new technologies.

The most important inauguration ceremony had been scheduled in Pavia and the opening was presided over by Mussolini himself, from this we can understand the logistical importance attributed at the time to this unique seaplane base. The day was historic and any mistake or mishap threatened the launch of the first civil flight in Italy. Owing to its proximity to the Milan region, the Pavia Idroscalo rapidly developed a critical role both locally and nationally in the refuelling and checking of the seaplanes as well as sorting of products. The fact that the Municipality of Pavia invested 10,000 lire each year in this infrastructure for ten years, is testimony to the Idroscalo’s importance to the city.

#### *Political value*

This value or social power can be used by political authorities and individuals for their political interest in building or sustaining civil relations, governmental legitimacy, or ideological causes through the architectural heritage. In the case of the Idroscalo, it was inaugurated during fascism and on the opening day, by the fascist leader Mussolini himself, who is said to have touched the lowest parts of the building, feeling a sense of pride echoed by the seaplane base and his keen sense of the future.

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The chaotic relationship between Italian rationalism and the Fascist regime, is too complex a topic to explore with regards to the main aim of this thesis, however, it is worth mentioning that early on in his career Pagano was strongly associated with Nationalist and pre-Fascist politics, even becoming one of the founders of the first fascist party in his hometown. He initially started designing with a style appropriate to the regime, although throughout the development of his architectural philosophy he became less convinced and grew further apart from the architects of the Fascist regime, until he finally left the party and even openly criticised the dictatorship. In one of his last letters to his friends he requested: “remember me well: a man alive and full of good will”, so perhaps we should do just that? (Palanti, Casabella-Construzioni no. 195-8, p.17).

The topic of “difficult heritage” is definitely one that needs to be explored in more detail. It is important to interrogate the legacies of the Fascist era and its relationship to the present day, understanding which is the best way to deal with these types of heritage and their rehabilitation. “In Italy, this long-lasting political and cultural impasse is very visible through the continued use of fascist architecture. Unlike Germany, where the symbols of inconvenient pasts have been removed, dismantled or in some cases entirely destroyed, in Italian urban spaces it is very common to find fascist buildings, monuments, and memorials that have been left untouched” (Distretti and Petti, 2019, p.49). The scholars go on to say that “today the recentring of fascism and far right movements in the North, and the increasing arrival of migrant bodies from former colonized countries, made it more urgent than ever the need to reopen the processes of decolonization and defascistization” (Distretti and Petti, 2019, p.50).

#### *Rarity value*

Evidently the Idroscalo has an indisputable significant rarity value attributed to it. This is because it has a high universal value that cannot be replicated, it will therefore remain unique not only in the present era but also in the future eras. Pavia was one of the twenty-seven seaplane bases present in Italy before World War Two, which as has already been seen, were of great importance for the country. The only other built in the same style on stilts, also by Pagano, was the one in Turin, however this has already been demolished.

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Moreover and very importantly, according to the newspaper article in La Provincia Pavese, the author Pierangela Fiorani writes “I believe that all the other seaplane bases of that time have been demolished, the one in Pavia is the only one that has survived in Italy” (Provincia Pavese, 2012). Rarity value comes from exactly this, when a heritage building is amongst the few survivors of a specific era or historical style.

Although already partly discussed under the aesthetic value, it is worth mentioning that this building has a very rare typology as it is testimony to the transition between two periods; the Secessionism of the beginning of the 20th century and the Modern Movement. Also to be considered is the fact that the Idroscalo is said to be one of the very first examples of rationalist architecture in the province of Pavia.

#### *Scientific value*

A society’s traditions, views and technological progresses can many times be understood through the traces and remains of their heritage. It is important to study the construction methods, forms, materials, features and components that could be significant of the time so it is not destroyed or changed during the rehabilitation project. Some of these essential characteristics overlap and have already been discussed under the other categories of values such as aesthetic and historical.

Through the rationalist features of the building, we can understand the changes that were happening in society. New technologies, like reinforced concrete used in the Pavia seaplane hangar reflect the new identity and modernist language that architects were searching for. It reflected a society that was inspired by futurism, the rise of new production processes, speed and new technologies.

Furthermore, with regards to new construction methods- the ambitious seaplane base was the result of profound research in which Pagano, the SISA and the Borini firm, who were experts in reinforced concrete, worked in collaboration. It involved developing a prototype, never constructed before in Italy. The structure had to be designed so that it would be fixed and anchored directly to the river bed.



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The reason for placing the base on stilts as opposed to how other seaplane bases had been constructed, where they simply rest directly on the water, was because the level of the water course in Pavia varied substantially between full and lean. Therefore another challenge was elevating the hangar by a sufficient amount to cover the difference in water level to ensure the feasibility of dragging the seaplane into the hangar whenever it was needed.

### *Spiritual value*

The spiritual value conveyed by a heritage building may contribute to the sense of identity in society, giving meaning, emotion, value and mystery to place. There is no denying the feeling of mystery conveyed by the Idroscalo. The mayor, Fabrizio Fracassi, emphasizes that the building definitely intrigues people as evidenced by the over 208 project submissions from all over the world for the rehabilitation competition – a result that neither he nor anyone in the municipality had expected.

There are two ways in which we can perceive the meaning and emotion, either referring to the present condition of the building, or how we imagine it when it was in use. From what we know of the original building, it was a place bursting with activity and life, a dynamic station with seaplanes full of passengers arriving and departing. It was also at the centre of the Pavia social scene, a space of social meeting and even partying. On the other hand, if we look at the imposing, decaying, skeleton that there is now, the ruin might evoke a sense of mystery, enchantment, nostalgia or respect.

Arguably, when looking at the spiritual aspect of the building, it is more important to re-imagine what the building was and the original spirit attributed to it- in terms of the identity and meaning it gave to its society or the emotions it aroused. Looking at it in this way makes it unique to each heritage building, as opposed to any ruin which might suggest a similar spiritual value, despite having very different original historical character. In any case, this is one of the main values that will need to be further explored when studying the intangible values of the building through the people of Pavia.

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### *Symbolic value*

This value takes into account the significance and knowledge that might assist a society in interpreting its cultural identity. It involves the memories that remain in a city's population and the way in which the heritage building adds to their identity. In the case of the Idroscalo, the building could symbolise the power that it once had in a historic period of great development for the aeronautics field, and the imposing nature it still holds. In contrast to ancient heritage buildings, the Idroscalo, as with other modern heritage buildings was not built to be beautiful- instead it symbolises the speed of cultural, technological, social and environmental change that defined the time.

Furthermore, the Pavia seaplane base has always been an important symbol of the Ticino, it had previously given life and importance to the river and made it central to the city. As Antonio Bobbio Palacivicini, the deputy mayor and councilor stated to La Provincia Pavese earlier this year, “The Idroscalo has a very high symbolic value: all the people of Pavia have it in their DNA.”

In the case of modern heritage buildings, due to their big open spaces, giving a new use that functionally works can be easy. However, functional compatibility is not enough, if the heritage building has a deep spirit we should strive to recover it, whilst giving it a new contemporary life.

We need to reflect and ask what exactly gives the symbolic value to a heritage building; “is it their being made of stone or reinforced concrete, and therefore related to the materials from which they are built; to their shape; to their age; or to the ritual that takes place every day in them and to the lives that the workers lead there?” (Fiorani et al, 2017, p.227).

Again in order to understand this, just as is the case for the spiritual value, the symbolic value will need to be further explored when studying the intangible values of the building through public participation, in order to understand the meaning it carries for the people of Pavia and how the building adds to their cultural identity.

### Uniqueness value

For this value, it can be argued that many aspects will be similar to those mentioned under the rarity value. The difference being that rarity refers to a measure of scarcity and low abundance- and uniqueness is a distinctiveness or something easily recognisable.

This distinctiveness can be determined by many elements including the architect or the style. In the case of the Idroscalo, we are dealing with the work of Giuseppe Pagano, one of the masters of Italian rationalism, and thus of value for the Italian heritage. He is said to have been one of the purest examples of early Italian modernism, going on to design The Palazzo Gualino in 1928 and the Bocconi University in Milan in 1942. The seaplane base however, was one of the first and unpublished projects by the architect, who had freshly graduated from university only two years before. Although its abandonment would suggest otherwise, there could be a sense of pride that the city gets from owning one of his works.

The style of the Idroscalo is clearly related to the Italian rationalist style of architecture which was influenced by futurism and the European avant-gardes. It displays a unique synthesis between that and the Secessionist style, recognisable from the expressive and decorative language found in the details of the elevations.

### How important is the building to you and your identity?

(On a scale of 0 to 10, with 0 being not at all important and 10 being extremely important)

20 participants

Scores Given	6	6	10	8	10	8	8	10	10	10	6	10	10	10	10	10	8	8	10	6	10
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### How important do you find the following values ?

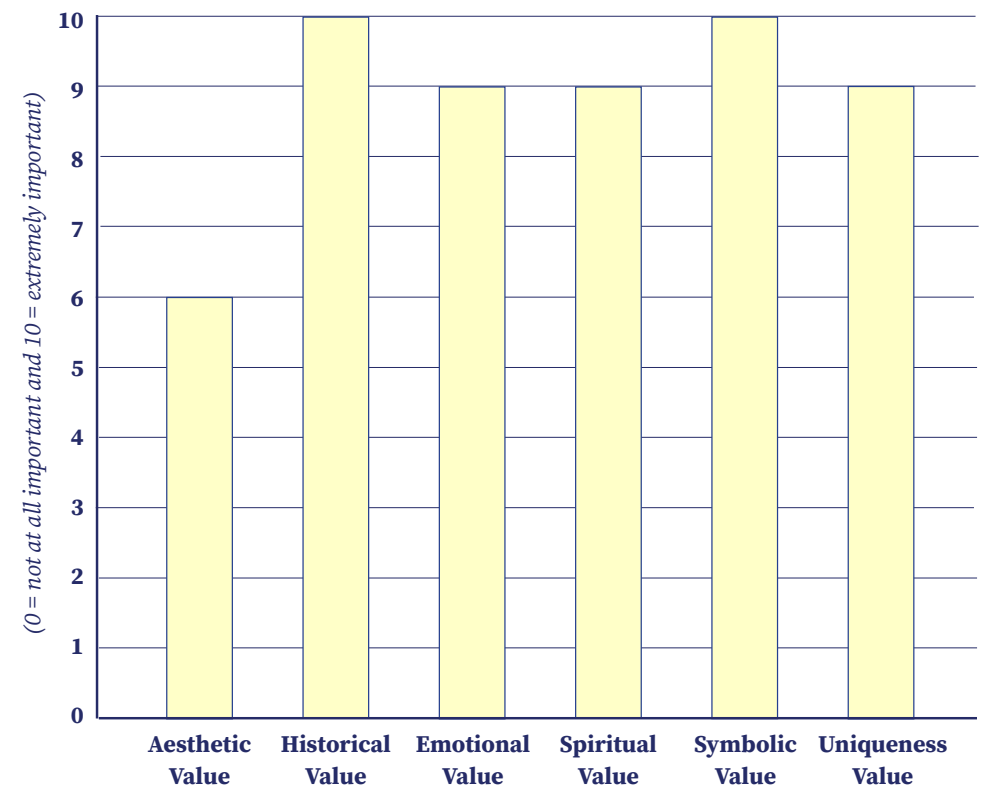


Fig 39. (Top) Scores given by 20 locals on the importance of the "Idroscalo" on their identity

Fig 40. Average results regarding the importance of the different values taken from surveys taken on 20 locals from Pavia







Fig 43. (Next page) Intangible values collage







### Which of the following physical elements should be preserved?

Person Interviewed	Original Form	Original Materials	Original Façade Proportions	Original Roof	Original Colours
1	X		X		
2	X	X	X		X
3	X				
4	X		X		
5	X	X	X		
6	X	X	X		
7	X	X			X
8	X				
9	X				
10	X		X		
11	X	X	X		X
12	X	X	X		X
13	X				
14	X	X	X		
15	X		X		
16	X				
17	X		X		
18	X	X	X		
19	X	X	X		X
20	X		X		X

The next step in the significance assessment is to gather all the information taken from the different sources. The information stated at the beginning of this section, coming from documents, articles, photographs, original drawings and observation as well as the information found from the surveys and interviews with the locals from Pavia. Only by taking this all into account can we properly understand the values attributed to the modern heritage building.

Looking once again at the definition of “rehabilitation”, the process states returning a building to a state of utility through alterations while preserving the features that define its character and its significant historical, cultural and architectural values. This chapter has investigated and allowed us to understand the “character” or “identity” of the Idroscalo, so that in the following chapter a rating system made up of the most important factors, can be used to evaluate and analyse the projects presented previously.

### How much should the rehabilitation change the current building?

(On a scale of 0 to 10, with 0 being no changes at all and 10 being extremely radical changes)



Fig 44. (Top) Survey answers from 20 locals from Pavia on what elements should be preserved

Fig 45. Survey answers from 20 locals from Pavia on how radical the intervention should be



REPUBBLICA ITALIANA- COMUNE DI PAVIA

# IDROSCALO DI PAVIA



**NAME:** Idroscalo di Pavia

**DATE OF BIRTH:** 1st of April, 1926

**PLACE OF BIRTH:** Lungo Ticino Sforza, 51, Pavia, Italy

**DESIGNER:** Giuseppe Pagano

**ORIGINALLY MANAGED BY:** Italian Society of Air Services

**ORIGINAL USE:** Seaplane base

**OTHER USES SINCE:** None

**STYLE:** Rationalist (transition era between Secessionism and Modern Movement)

**CURRENT OWNER:** Entrepreneur Carmine Napolitano (since 1999)

**PROPERTY VALUE:** A billion lire (in 1999)

**STATE OF USE:** Completely abandoned (decommissioned since 1981)

**RELATION TO CITY:** Isolated from the rest of the city

**CURRENT CONDITION:** Best kept element is the reinforced concrete load-bearing structure. Substantial parts of the façade including the rhythm of the columns and window have survived, keeping its rationalist identity. Also some of the decorative language can still be seen on the façades, testimony to its Secessionist style. The brick and stucco façades, have large portions missing, the external plaster is in critical condition and the wooden windows are broken and with smashed glass. The external balcony and the roof also need substitution. In 1995 the walkway that once connected the building to the mainland was demolished, leaving the building completely inaccessible and isolated.

# IDENTITY CARD

**AESTHETIC VALUE**



**AGE VALUE**



**ECONOMIC VALUE**



**HISTORICAL VALUE**



**POLITICAL VALUE**



**RARITY VALUE**



**SCIENTIFIC VALUE**



**SPIRITUAL VALUE**



**SYMBOLIC VALUE**



**UNIQUENESS VALUE**







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# Developing the Evaluation Process

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## Integrating the Most Relevant Factors for the Idroscalo

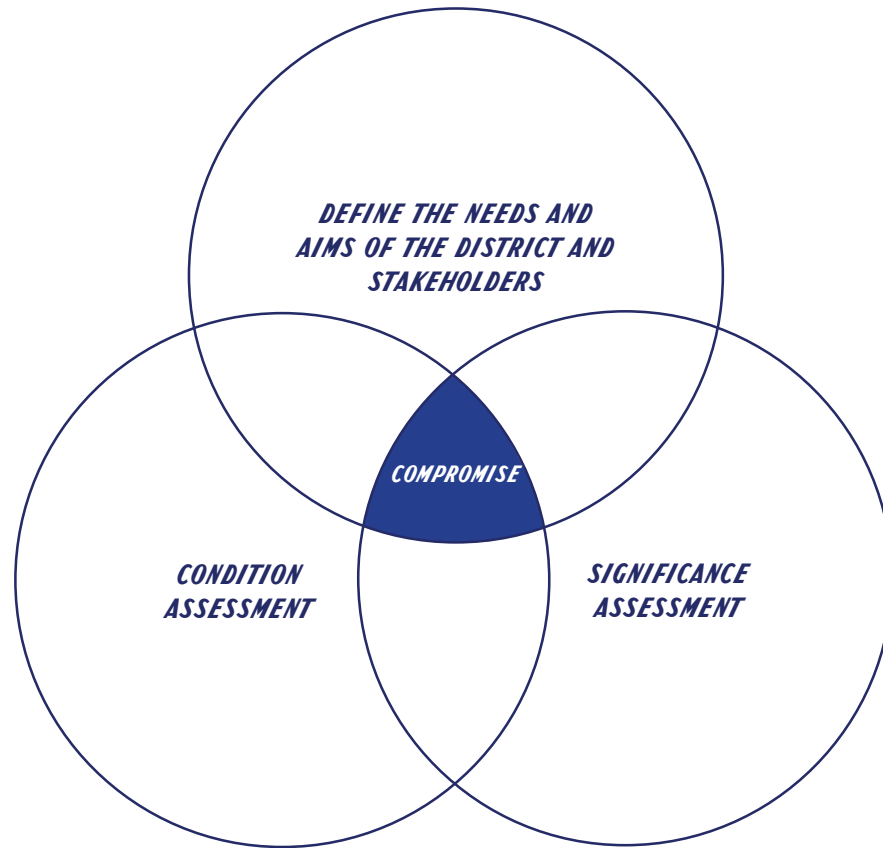
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In the previous chapter a framework has been introduced in order to gather important information that will allow the decision makers to make a more informed judgement regarding the design of the intervention. The different factors included looking at the regulations of the building, completing a conditions assessment, exploring the needs and goals of the different stakeholders and district, and finally, a significance assessment. This next part shows the development of the evaluation process in which the aim is to find the interventions that best compromise between the different requirements.

As has been seen for the Idroscalo, a lot of information has been gathered, painting a picture of the values attributed to the building and its historic character as well as what the district expects and hopes the intervention will achieve and improve for Pavia, and the people of Pavia. This is necessary so that in this final chapter the information can be processed to form a list of important criteria that the intervention should be guided by, in the case of this particular modern heritage building.

---

## Selecting the Most Important Values and Factors for the Rehabilitation



The next step is weighing out and considering all of the different factors found during the investigation from these three areas of the framework proposed. The balance and compromise in addressing all of these is critical. In this way decision makers develop a more informed, objective strategy.

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Of course, as will be seen in the following pages, there will be various opinions held by the different stakeholders for each of these categories, and this will change with each project. The information gathered might overlap and be repeated, or on the contrary might be contradictory and conflicting.

---

Therefore, in the selection of the criteria, all the factors must be analysed to weigh out and understand those most repeated or emphasised, and thus most important. The evaluation process can be carried out using a long list of criteria, however for the purpose of this thesis, I will simplify the evaluation process to consider only a limited set of criteria. The process aims at evaluating the different awarded projects shown in the third chapter, to see in what way they fulfil the criteria. The best project will find the best compromise between all the different requirements.

The condition assessment, despite being a part of the criteria for the evaluation process, will not be included as it requires a survey- and is out of the scope of this thesis. The contribution of this part in essence would be to understand the current physical condition of the building; the structural capacity of the Idroscalo, and the elements that need replacing or reinforcement. This allows the designer to understand the limitations as well as the opportunities of the design.

The evaluation process in this case will use a radar chart which is a good tool for comparing the different alternative projects submitted values over multiple common variables. Once the final criteria is identified, for each project, a value is plotted against each axis resulting in a shape form. This shape form allows the easy recognition of what criteria is most and least fulfilled, or which projects are the most well-rounded, which of course is the aim.

Since the criteria that will be used for the evaluation process has already been selected as being the most important for the Idroscalo- it is essential that the projects have a bare minimum number of points in addressing all of the categories. Projects that do not reach a minimum number of points for an aspect, show us the intervention is flawed. Heritage building should keep the most important values they have been attributed and although must compromise, should not fully lose any of the main ones. In the same way, the main needs and goals of the project should all be addressed. In our case, we are setting a minimum of 1 out of 5 for any defined criteria.

Finally, it should be mentioned that the thesis is keeping the evaluation process as simple as possible, not only by limiting the number of criteria that will be measured but also in terms of weighting of each of these criteria. The radar chart will take each axis of criteria, as having the same weighting. However, it most probably is the case that each set of criteria could be more or less important and should not be considered all the same. Consequently, it is important to consider how this process could in fact be extended and made more complex to create an improved instrument of evaluation.



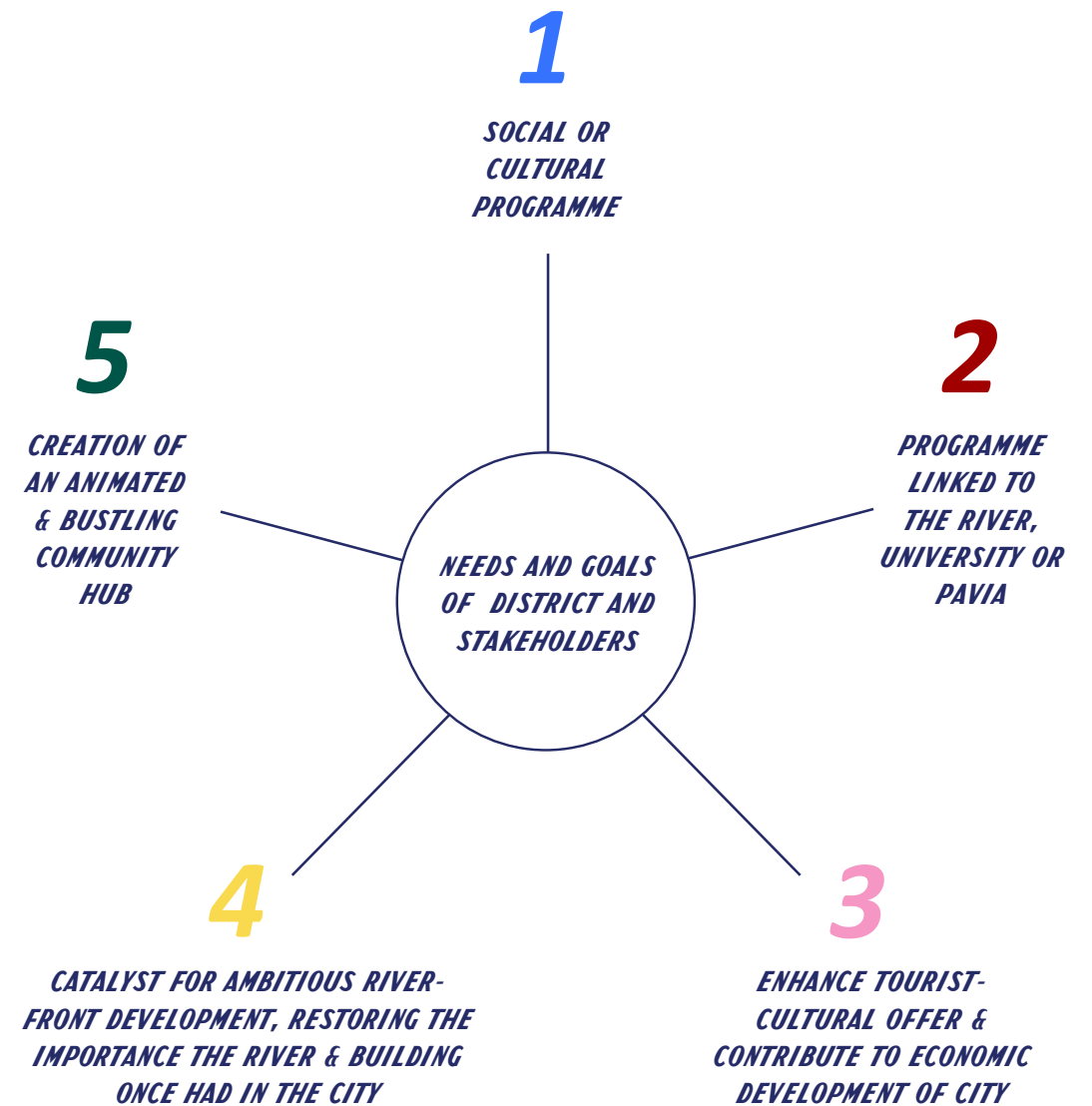
## Criteria Regarding the Needs and Goals of District and Stakeholders

- 1. Contemporary interpretation of programme
  - 2. Particular relevance to younger generations
  - 3. Social and cultural dimension of programme
  - 4. Creation of an animated and bustling community hub
  - 5. Catalyst project for ambitious river-front redevelopment
  - 6. Return centrality and importance of building to the city
  - 7. Enhance the tourist-cultural offer
  - 8. Become an engine of economic development
  - 9. Use if for public functions open to the local community
- 
- 1. Social or cultural programme
  - 2. New use should be linked to the University in some way
  - 3. New use should be linked to the River in some way
  - 4. New use should be linked to Pavia and its history



In order to simplify the process for the purpose of this thesis , I will only be selecting the main 5 factors from the list above. These will be based on the most recurrent needs or goals as expressed by the authorities as well as the locals. These will be included in the rating tool, used to then analyse the submitted projects.

## Selected Criteria to be Used for the Evaluation



## Criteria Regarding the Significance Assessment

1. Protect the innovative and rare architectural typology of the Idroscalo, specifically preserving its majestic and original form
2. Preserve the elements that are testimony to the Secessionism of the beginning of the 20th century such as the engravings of geometric shapes
3. Preserve the elements that are testimony to Modern Movement and Rationalist Movement such as the easily identifiable rhythm on the façades
4. Protect the distinctive and characterising features such as; the tracks for towing the seaplanes in or the large opening in which the hydroplanes entered from
5. The building originally contributed notably to the economic development of the city and, taking advantage of its historical past, should once again become a driver
6. Preserve the construction methods and new technologies that reflect the advances and changes of the time, such as the reinforced concrete stilted structure
7. Enhance or exhibit its symbolism as a building reflecting speed of cultural, technological, social and environmental change that defined the time
8. Enhance its original spiritual value of a station bursting with activity and life, central to the social scene and fun
9. Return its importance as symbol of the Ticino, giving life to the river

1. Enhance the original spiritual value locals associate to the Idroscalo, in particular its loud, busy, dynamic, creative, bustling, vibrant and happy spirit
2. Enhance its emotional value evoking memories such as the idea of speed, movement and travel, specifically planes and flying
3. Protect and enhance the emotions evoked such as the pride or nostalgia that the locals feel towards the building
4. Restore its connection to the Ticino, the importance and centrality of water and nature, becoming one with it



## Selected Criteria to be Used for the Evaluation

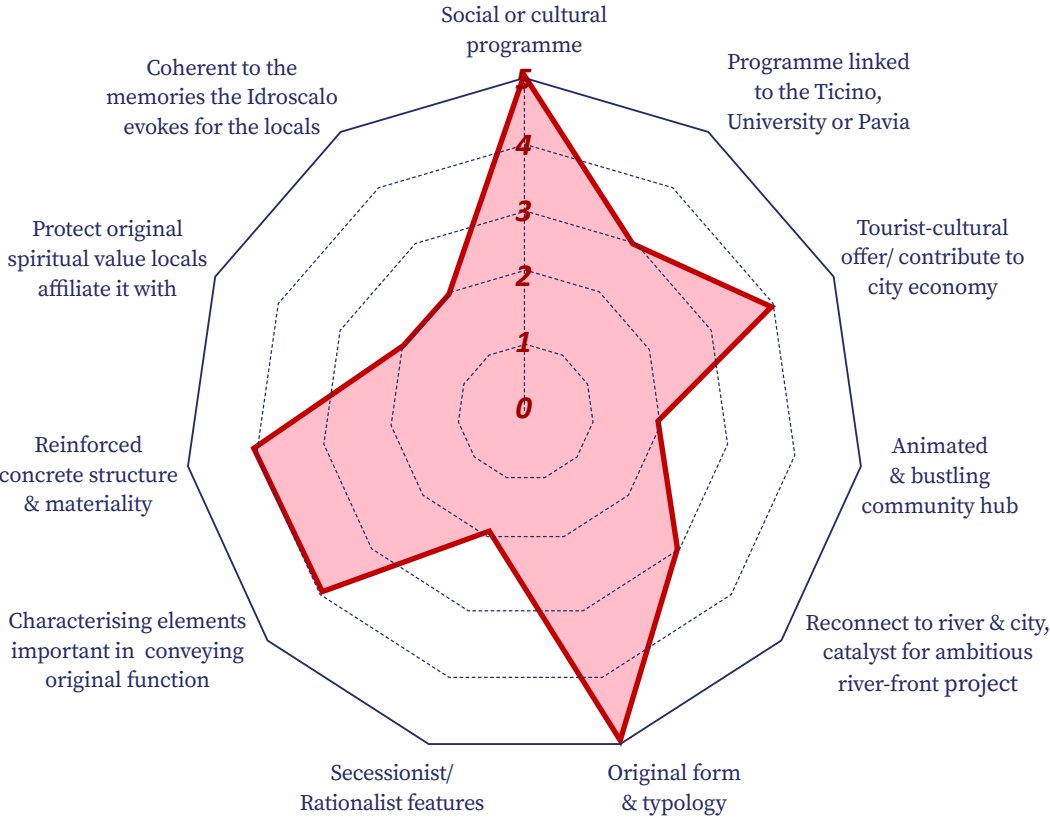




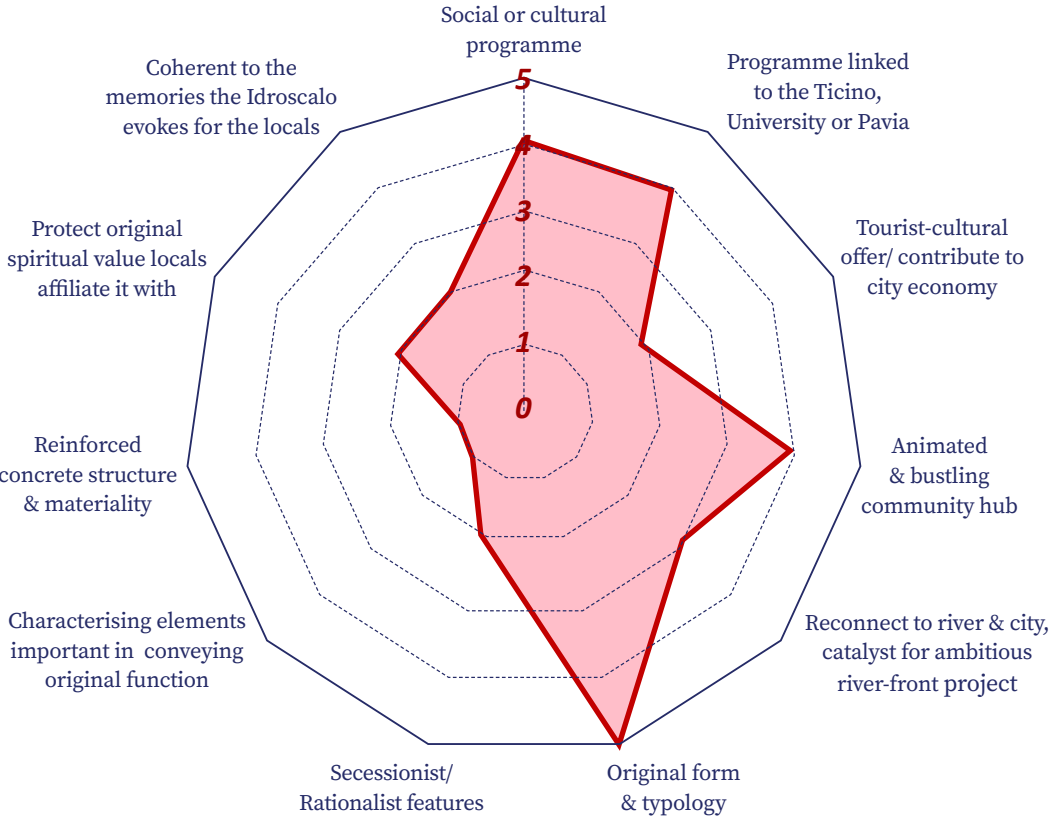
# PROJECT A: THE HOUSE OF LIGHT



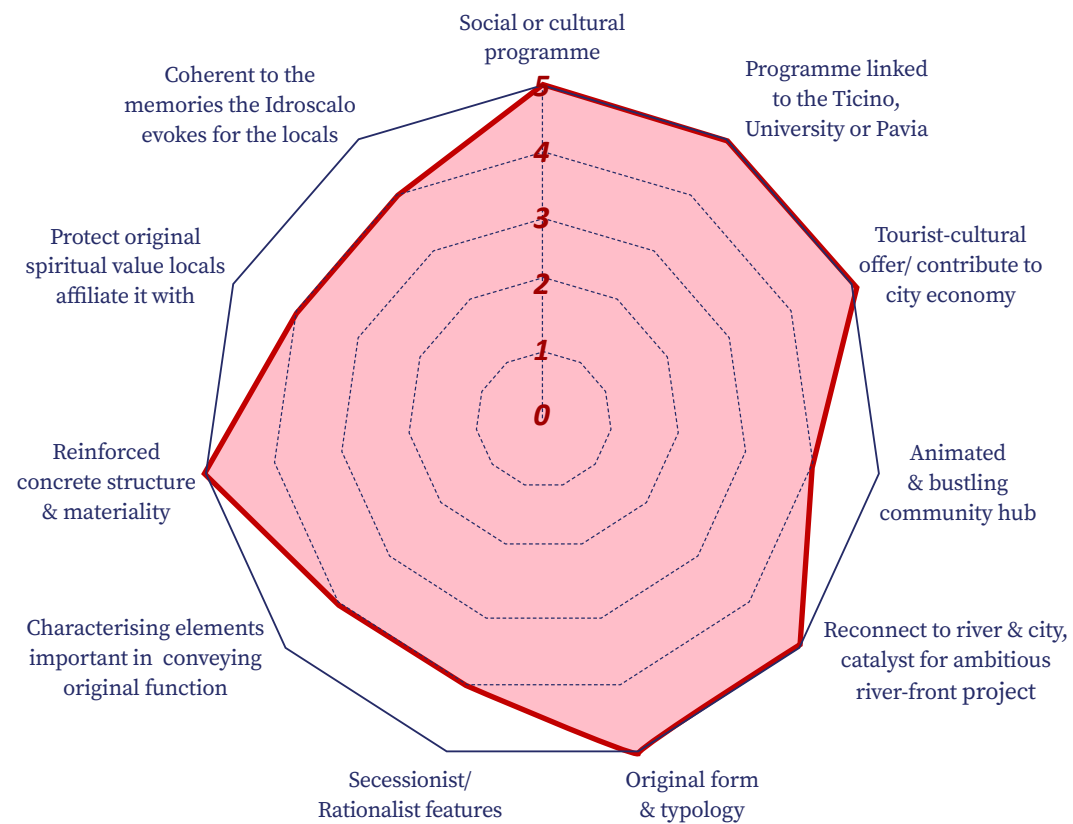
All images of projects awarded from TerraViva Competitions, 2022  
All radar charts by Claudia Dorman-Alonso, 2022



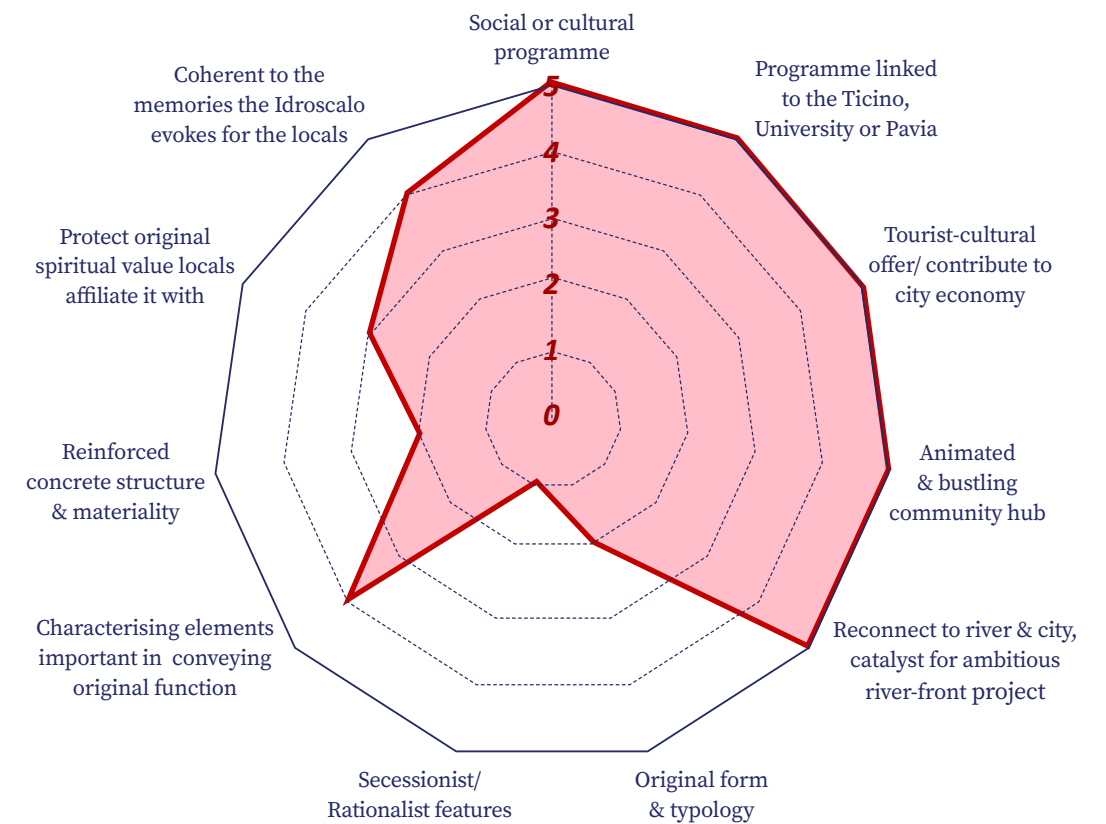
# PROJECT B: FATA MORGANA



## PROJECT C: TWOFOLD

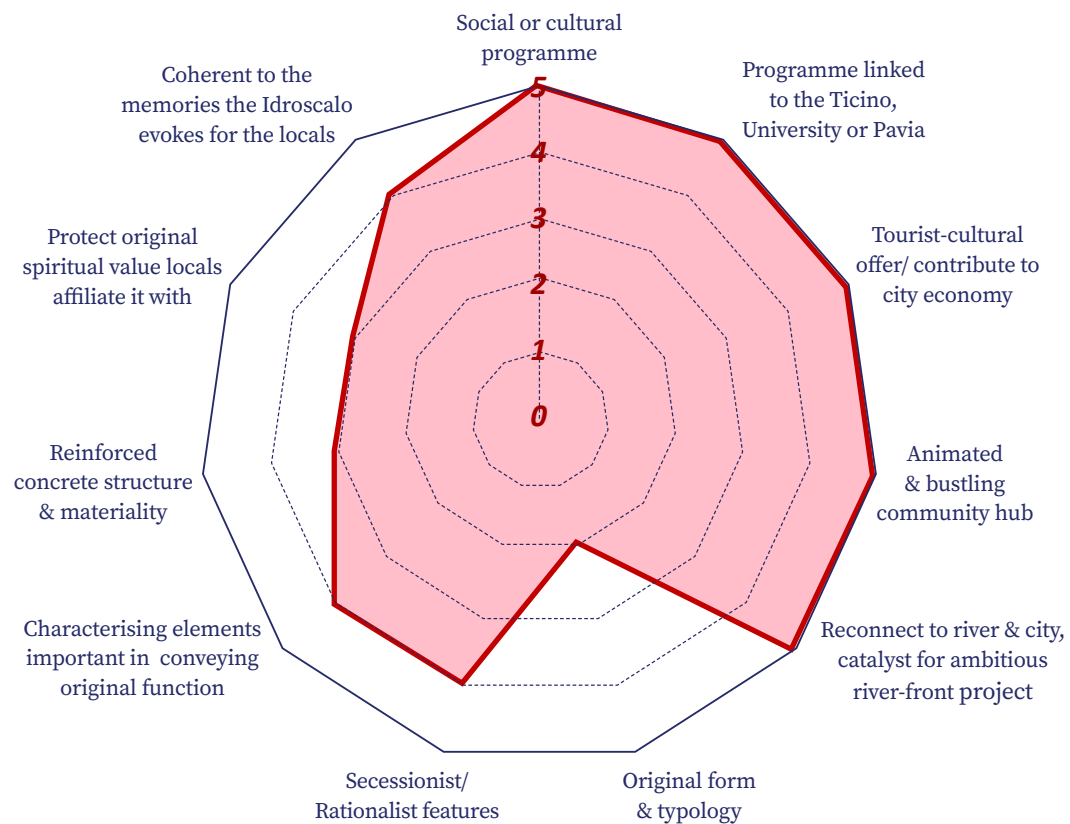


## PROJECT D: IDROSCALO HUB

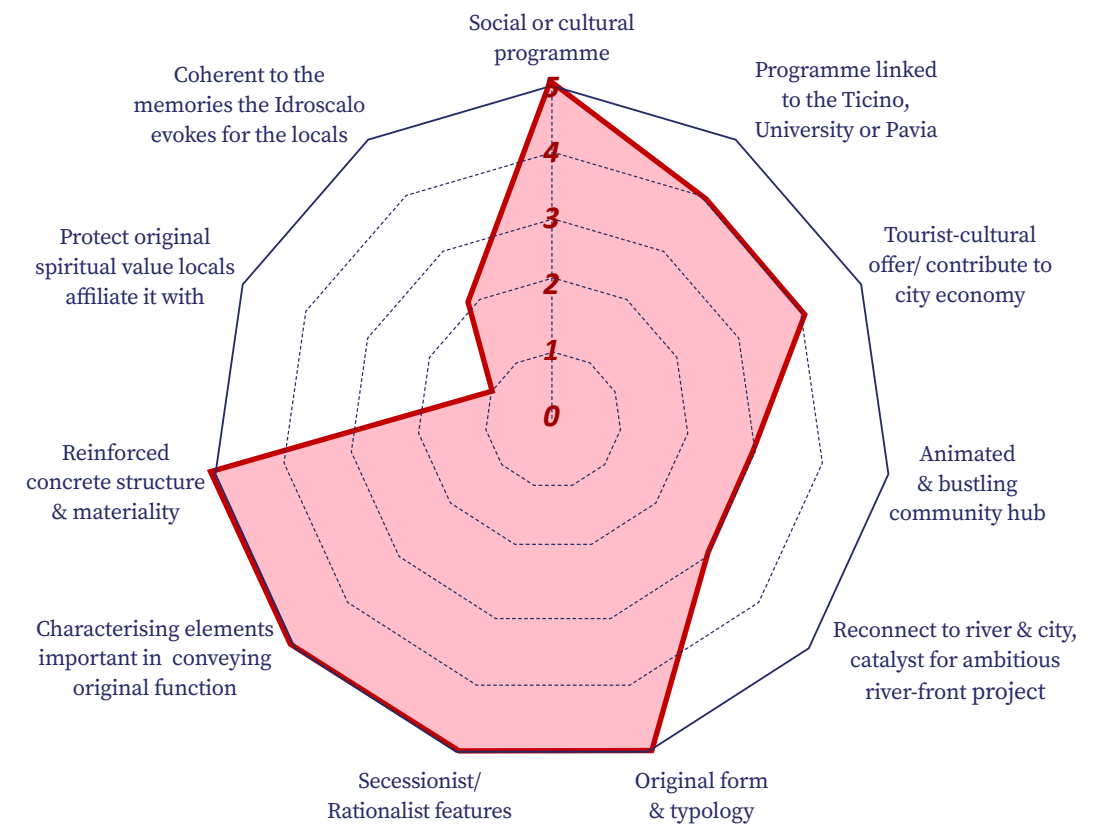




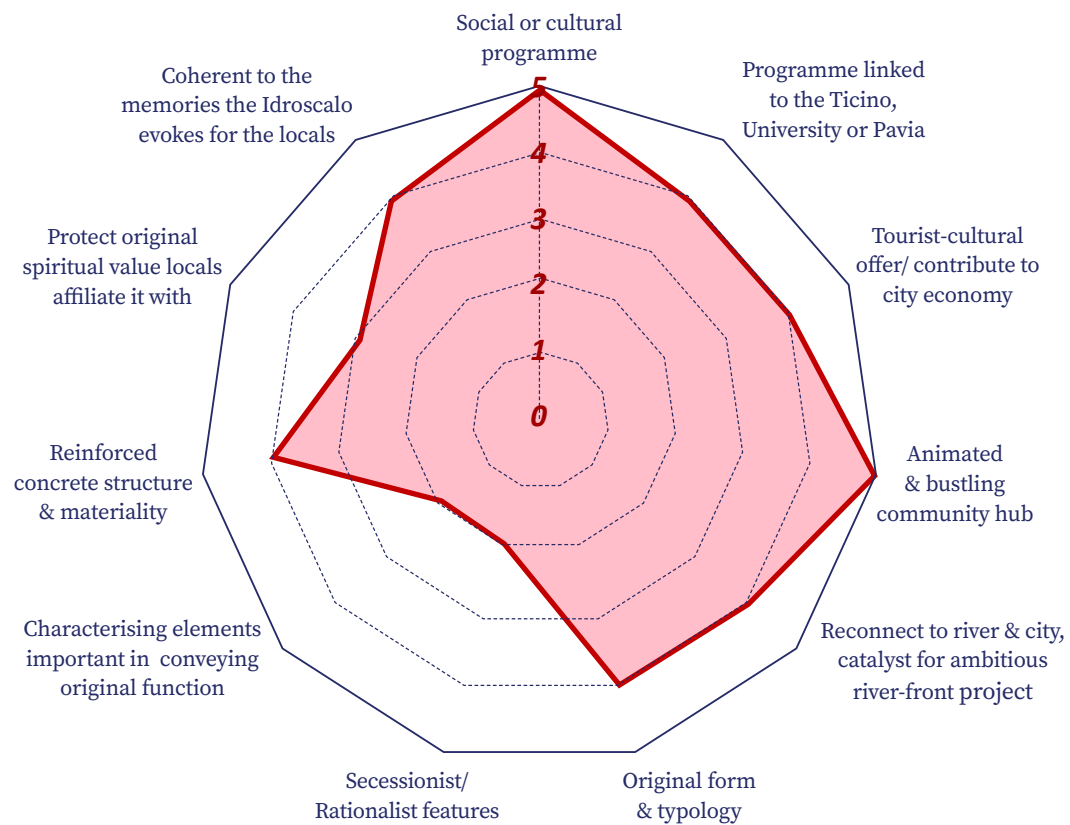
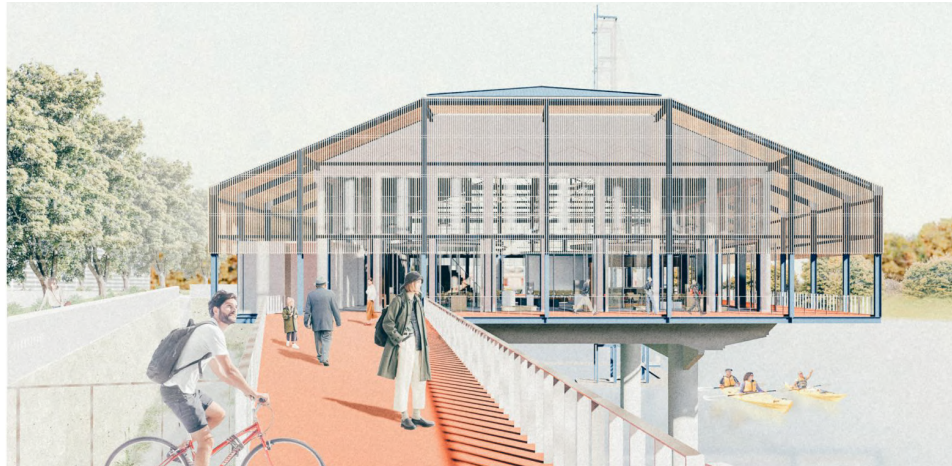
## PROJECT E: PAVIA O.N



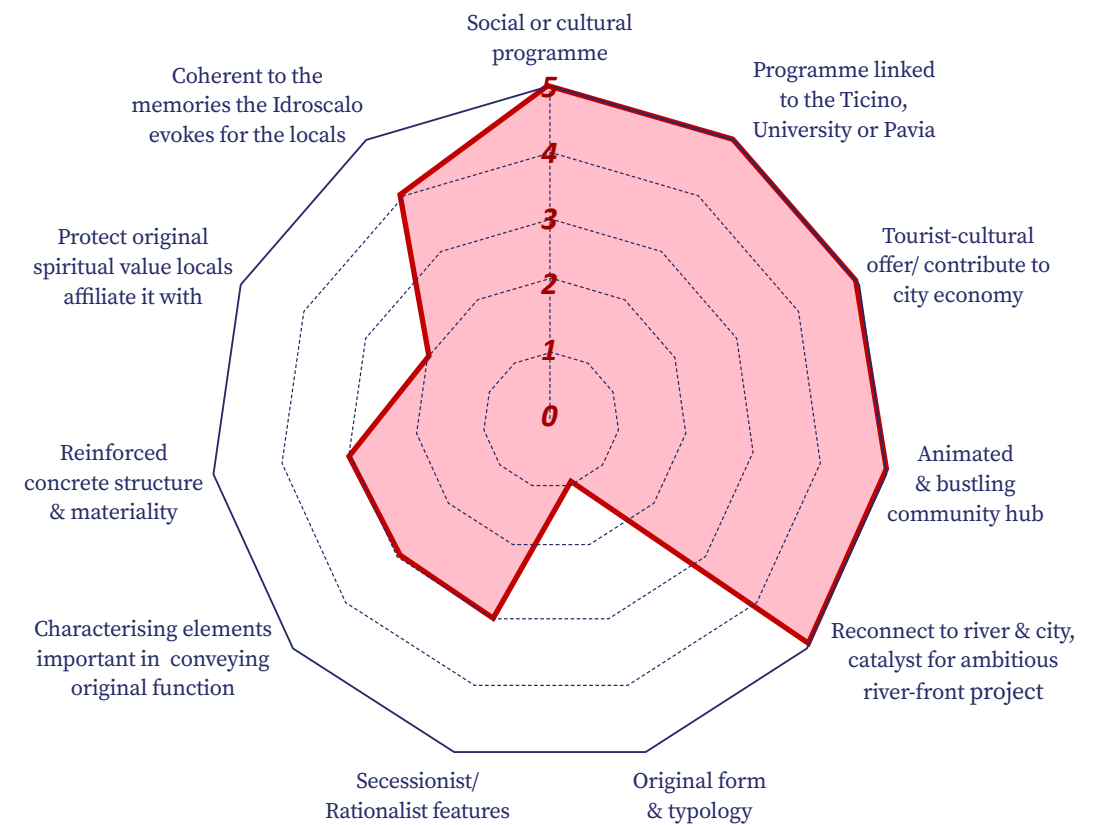
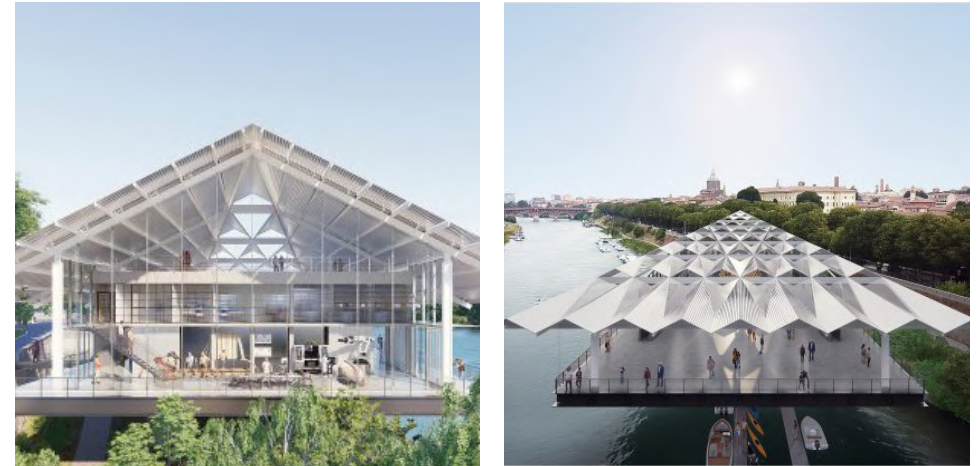
## PROJECT F: ACT



## PROJECT G: PAVIA'S LIVINGROOM

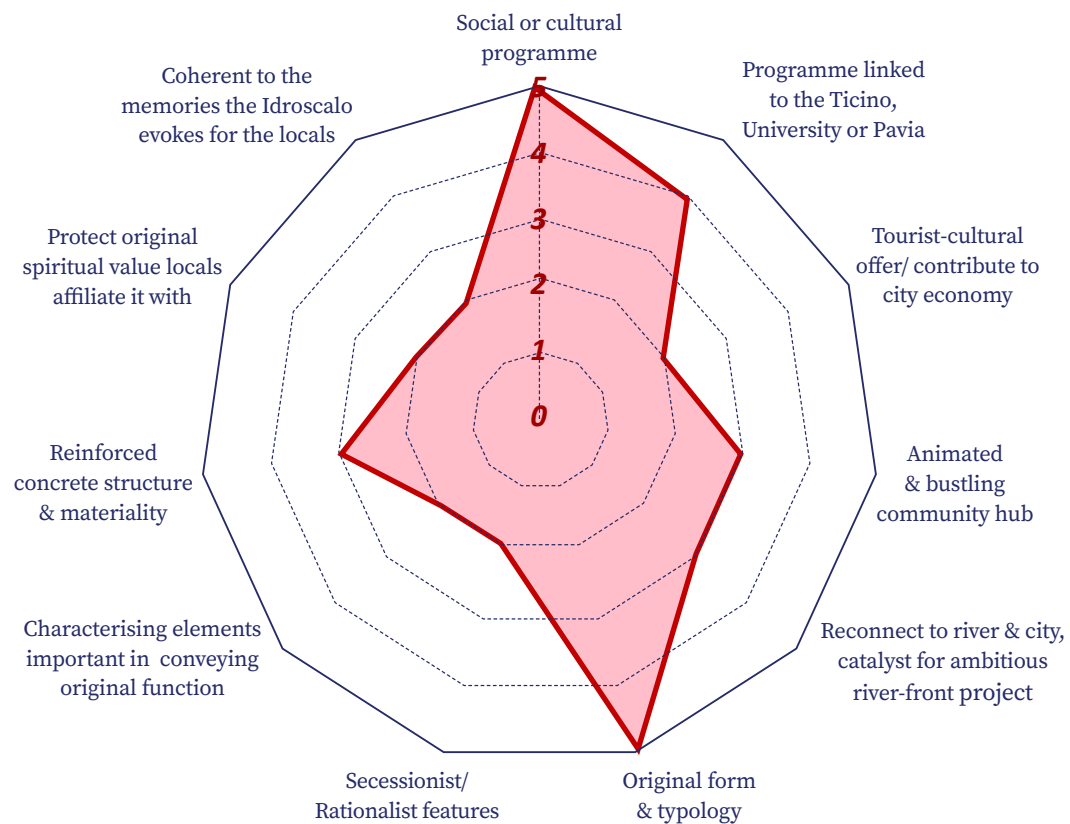


## PROJECT H: CONTINUED MODERNITY

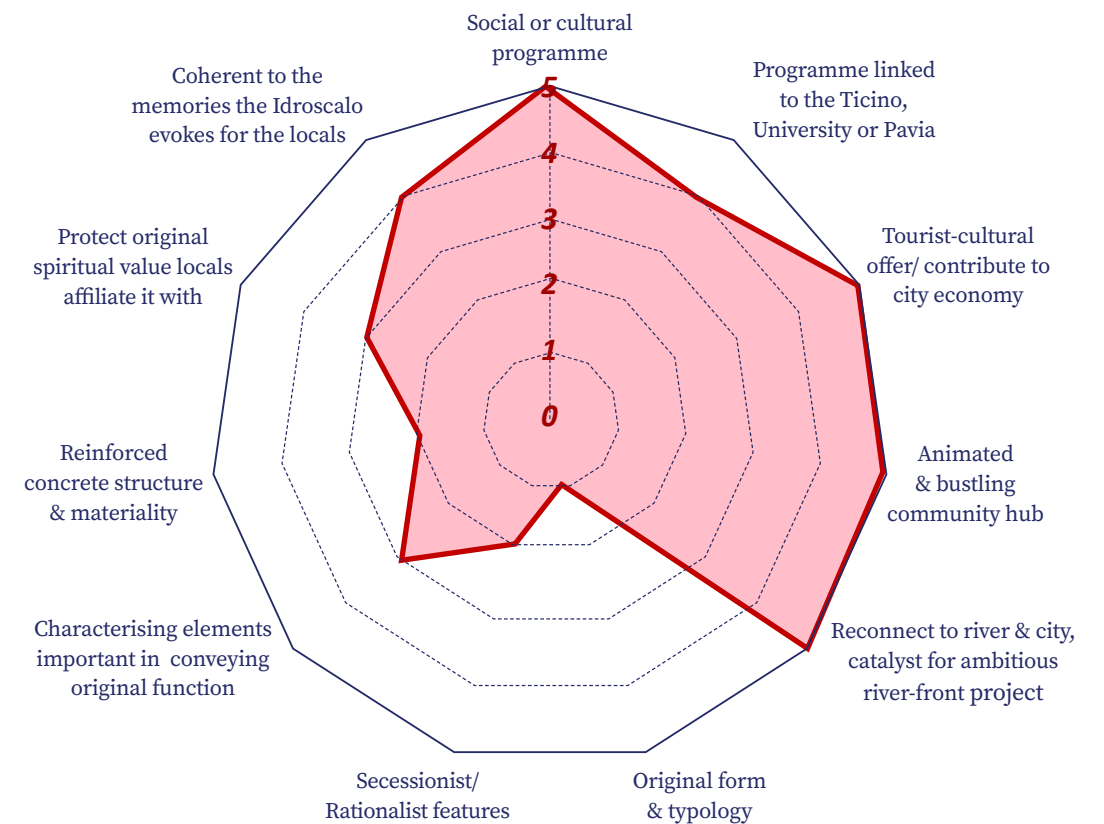




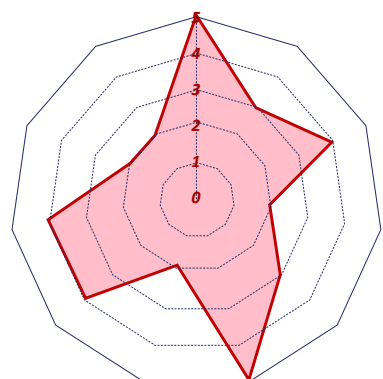
## PROJECT I: THE WIDE TICINUM HALL



## PROJECT J: TERMINAL PAGANO

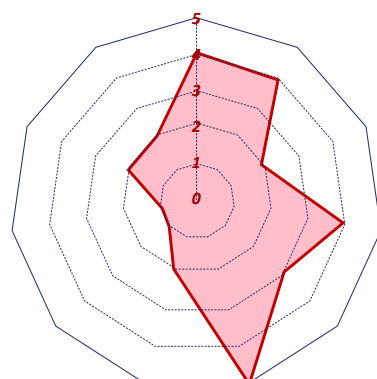


**PROJECT A**  
**THE HOUSE OF LIGHT**



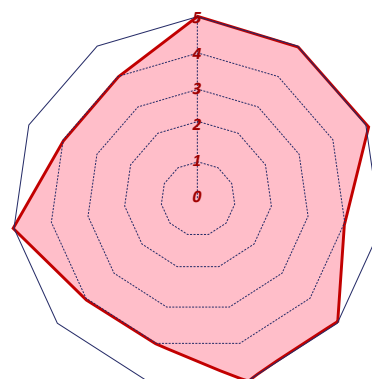
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**PROJECT B**  
**FATA MORGANA**



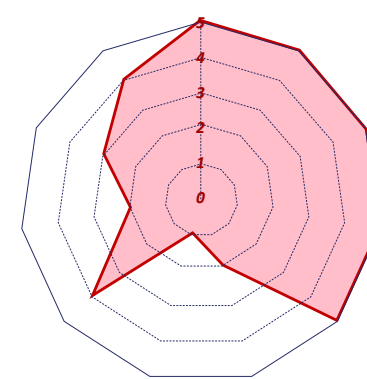
COMPREHENSIVE SCORE  
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**PROJECT C**  
**TWOFOLD**



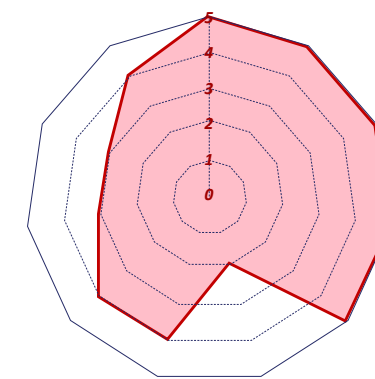
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**PROJECT D**  
**IDROSCALO HUB**



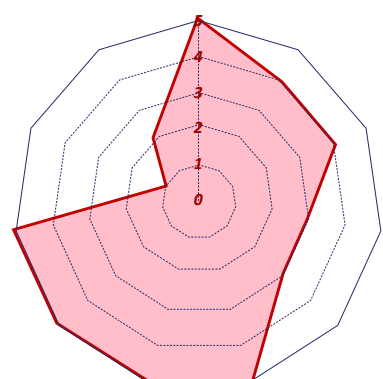
COMPREHENSIVE SCORE  
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**PROJECT E**  
**PAVIA O.N**



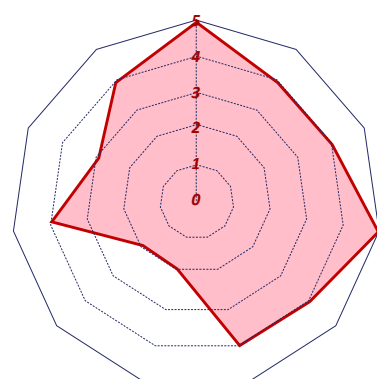
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**PROJECT F**  
**ACT**



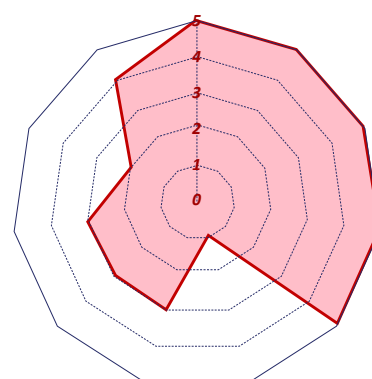
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**PROJECT G**  
**PAVIA'S LIVINGROOM**



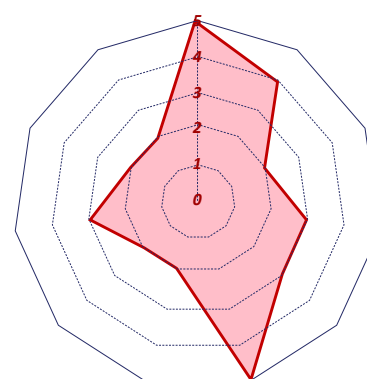
COMPREHENSIVE SCORE  
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**PROJECT H**  
**CONTINUED MODERNITY**



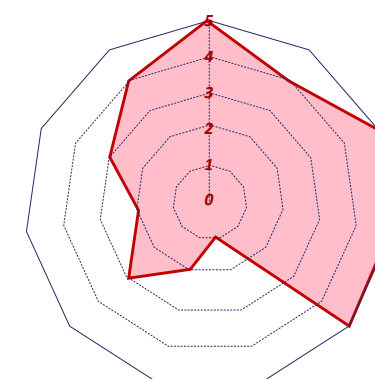
COMPREHENSIVE SCORE  
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**PROJECT I**  
**THE WIDE TICINUM HALL**



COMPREHENSIVE SCORE  
**33**

**PROJECT J**  
**TERMINAL PAGANO**



COMPREHENSIVE SCORE  
**39**





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Fig 6. Pereira Roders, A. R. (2007). *Re-architecture: lifespan rehabilitation of built heritage-scopus*. (p. 39).

Fig 7. Hebstreit designstudio. (2021).

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Fig 9. Postcard from 1926 on Sale on Ebay, Retrieved March, 2022 from: <https://www.ebay.it/itm/313612474226?mkevt=1&mkcid=1&mkrid=724-53478-19255-0&campid=5338722076&customid=&toolid=10050>.

Fig 10. Societa Italiana Servizi Aerei. (1932). *Hangar Ticinum Brief*. (p. 5).

Fig 11. Photography by Guglielmo Chiollini, Pavia. (1926). Retrieved January, 2022 from: <https://cronobook.com/pic/3af5ee0f-13b6-424e-b1cf-a7c75cdc7329>.

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Fig 14. Google Earth. (2022).

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Fig 16 - 23. TerraViva Competitions. (2021). Hangar Ticinum.

Fig 24. TerraViva Competitions. (2021). Hangar Ticinum Brief. (p. 7).

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Fig 27. Arkertipo Magazine. (1930), Retrieved March, 2022 from: <https://www.arketipomagazine.it/nuova-vita-per-palazzo-gualino/>

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Fig 32. TerraViva Competitions. (2021). Hangar Ticinum Brief. (p. 20)

Fig 33. TerraViva Competitions. (2021). Hangar Ticinum Brief. (p. 18)

Fig 34. TerraViva Competitions. (2021). Hangar Ticinum Brief. (p. 22)

Fig 35. TerraViva Competitions. (2021). Hangar Ticinum Brief. (p. 14)

Fig 36. Mısırlısoy, D, & Günçe, K . (2016) Adaptive reuse strategies for heritage buildings: A holistic approach. (p. 93).

Fig 37 - 45. Claudia Dorman-Alonso. (2022).



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