MASTER

The power of rehabilitation

Da Silva Eliziario, J.

Award date:
2010

Link to publication

Disclaimer
This document contains a student thesis (bachelor's or master's), as authored by a student at Eindhoven University of Technology. Student theses are made available in the TU/e repository upon obtaining the required degree. The grade received is not published on the document as presented in the repository. The required complexity or quality of research of student theses may vary by program, and the required minimum study period may vary in duration.

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.
• Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
• You may not further distribute the material or use it for any profit-making activity or commercial gain
The Power of Rehabilitation
Master Thesis

The Power of Rehabilitation

Josué da Silva Eliziário 0625205

Commission
Peter Erkelens
Associate Professor in Building Technology, Technische Universiteit Eindhoven, The Netherlands

Jacob Voorhuis
Assistant Professor in Architectural History, Technische Universiteit Eindhoven, The Netherlands

Miguel Santiago
Associate Professor in Architecture, Universidade da Beira Interior, Portugal

Department of Architecture, Building and Planning - ADE Unit
Technische Universiteit Eindhoven
March 2010
The Power of Rehabilitation
INDEX

Introduction ........................................................................................................................................... 6
Part 1 ......................................................................................................................................................... 8
  Rehabilitation through History .................................................................................................................. 8
  Taxonomies, levels, scales, and degrees ..................................................................................................... 9
  What makes rehabilitation different from the other interventions? .......................................................... 10
    The rehabilitation of SESC Pompeia ........................................................................................................ 13
Rehabilitation - a Strategist through different historical moments ............................................................ 25
  Pre-industrial time .................................................................................................................................... 25
  19th century ........................................................................................................................................... 25
  World War I ............................................................................................................................................ 32
  After World War II ................................................................................................................................. 37
Rehabilitation and the new challenges of the 20th century ....................................................................... 41
  Buildings for displaying ........................................................................................................................... 41
  Buildings for experimentation ................................................................................................................... 44
  Buildings for exploitation .......................................................................................................................... 46
Rehabilitation and aesthetics ....................................................................................................................... 50
  The image of the original: conservation of the whole old ....................................................................... 50
  The idea of difference: strata and fragments ............................................................................................. 52
  New construction as new material for the whole new .............................................................................. 55
  The higher ranking of rehabilitation: why is rehabilitation hierarchically over other interventions? .... 55
    Preservation ........................................................................................................................................... 55
    Conservation ....................................................................................................................................... 56
    Restoration .......................................................................................................................................... 57
    Reconstruction ...................................................................................................................................... 58
    Demolition ........................................................................................................................................... 58
    Why rehabilitation is hierarchically placed over other interventions? ............................................... 59
Part 2 .......................................................................................................................................................... 61
  The past of the Slaughterhouses of Madrid ............................................................................................. 61
    Origin of the Slaughterhouse ................................................................................................................ 61
    History of public slaughterhouses in Madrid .......................................................................................... 61
    Contest for the cattle market in 1899 and the first attempts to build a new slaughterhouse ................. 65
    The European experience and the German example ............................................................................ 67
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and organization of the slaughterhouse and cattle market</td>
<td>69</td>
</tr>
<tr>
<td>Nave 8</td>
<td>71</td>
</tr>
<tr>
<td>Building of butchering</td>
<td>71</td>
</tr>
<tr>
<td>Building of delicatessen and tanning</td>
<td>71</td>
</tr>
<tr>
<td>Constructive analysis</td>
<td>72</td>
</tr>
<tr>
<td>Structural analysis</td>
<td>73</td>
</tr>
<tr>
<td>Composition analysis</td>
<td>73</td>
</tr>
<tr>
<td>Nave 9</td>
<td>75</td>
</tr>
<tr>
<td>Constructive analysis</td>
<td>75</td>
</tr>
<tr>
<td>Structural analysis</td>
<td>75</td>
</tr>
<tr>
<td>Composition analysis</td>
<td>76</td>
</tr>
<tr>
<td>Rehabilitation of Matadero Madrid</td>
<td>78</td>
</tr>
<tr>
<td>Premises and Aims</td>
<td>78</td>
</tr>
<tr>
<td>Municipal requirements for naves 8 and 9</td>
<td>80</td>
</tr>
<tr>
<td>Program of technical needs</td>
<td>80</td>
</tr>
<tr>
<td>Location</td>
<td>83</td>
</tr>
<tr>
<td>Hidrography</td>
<td>85</td>
</tr>
<tr>
<td>Climate</td>
<td>86</td>
</tr>
<tr>
<td>Transports</td>
<td>87</td>
</tr>
<tr>
<td>Green areas</td>
<td>88</td>
</tr>
<tr>
<td>Design</td>
<td>89</td>
</tr>
<tr>
<td>Rehabilitation goals</td>
<td>89</td>
</tr>
<tr>
<td>Rehabilitation strategy</td>
<td>90</td>
</tr>
<tr>
<td>The new Matadero</td>
<td>105</td>
</tr>
<tr>
<td>Changing the character of the building</td>
<td>105</td>
</tr>
<tr>
<td>The new life</td>
<td>108</td>
</tr>
<tr>
<td>Overlapping of time and memory layers</td>
<td>111</td>
</tr>
<tr>
<td>Circuits</td>
<td>112</td>
</tr>
<tr>
<td>Rehabilitation interventions</td>
<td>114</td>
</tr>
<tr>
<td>Conclusion</td>
<td>116</td>
</tr>
<tr>
<td>Bibliography</td>
<td>128</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>132</td>
</tr>
</tbody>
</table>
INTRODUCTION

Rehabilitation has achieved, at the present, a relevant role, regarding the regeneration of the urban territory. Society's demands, political strategies, economical difficulties, and environmental / ecological concerns have raised rehabilitation as a serious alternative response to the models of urban development that have regulated and organized cities since the Industrialization. The scarcity of resources, the emission of toxic substances into the environment, and the decreasing of population in industrial countries triggered the need to rehabilitate existing buildings, rather than the continuous replacement of natural areas by new constructions and the consumption of natural resources. Rehabilitation has assumed such an importance that, at the present time, it represents 40% of the total building construction in Center Europe.

Rehabilitation has been a subject of study for long time, being structured, together with other interventions, in lists of definitions, taxonomies, levels, and scales. Although, rehabilitation integrates such structured lists of denominations, it seems slightly lost among so many names and definitions. Such definitions are mostly focused on constructive and managing issues, pushing into the background the potentials of rehabilitation to create singular objects from existing ones. Rehabilitation, with important transformative qualities is misplaced in long lists of descriptions, definitions, levels, and scales, losing its real relevance among other interventions. Besides, rehabilitation is very much approached from a technical perspective, giving prominence to constructive issues, excluding other dimensions comprised in rehabilitation. Another aspect, is the ranking assigned to rehabilitation in those structures. Rehabilitation is considered as one intervention more, having no relevant distinction among the rest.

Facing the potentials of rehabilitation, the central questions analyzed in this dissertation are: what makes rehabilitation different from the other interventions and why rehabilitation should be in a higher consideration regarding the other interventions?

In this work, rehabilitation is stated as an intervention that surpasses technological or constructive issues, and it is regarded as a complex and multidisciplinary exercise of thought. As a product of thought, rehabilitation is an intervention that organizes strategies, coordinates tactics, ideas, and concepts, based on historical knowledge, social analysis, functional needs, economical demands and political tactics. It can not be merely circumscribed to one more physical action of construction.

In this dissertation, rehabilitation is hierarchically placed over other scales of intervention, namely preservation, conservation, restoration, reconstruction, and demolition. Due to its strategic character, rehabilitation performs the role of a moderator or organizer, ordering and structuring the different levels of intervention. It uses other interventions as tools to achieve specific goals. As an intervention that sets up strategies, rehabilitation performs several tasks that go from maintenance to functional and aesthetical optimization, or from faithful restoration to
creative reconception. Rehabilitation achieves this higher level, not because it is more important than the other scales of intervention, but because of its character of organization and designing strategies.

Furthermore, this dissertation explores the ability of rehabilitation to create more than the necessary conditions for the well-being of building's users. Rehabilitation can create a new "soul" or "life", meaning that rehabilitation can generate a new character for the building, transforming or emphasizing its features. The new character has the power to re-approach or reinforce the bonds between building and people, basing its construction on parameters such as time, memory, and relations and processes of mental, creative, and physical character.

Finally, in order to apply the ideas presented on this thesis, it is developed a rehabilitation design as a case study. The object of rehabilitation is Nave 8 and 9 of the former Slaughterhouse of Madrid, a building from the beginning of the 20th century (1910). This case study is appropriate to experiment the complexity involved in a rehabilitation project, as well as, to verify the application of the contents stated on this work.
In the second half of the 20th century, rehabilitation became a serious subject of study for architects and urban planners, mostly due to the emergent awareness of the scarcity of resources, the increasing emission of toxic substances into the environment, and the decreasing of population in industrial countries. The consciousness of these issues by distinct actors running political, cultural, and social institutions triggered the vital need to rehabilitate existing single and collective sets of buildings, as well as urban areas, instead of continuing replacing natural areas by new constructions and consuming natural resources.¹

Rehabilitation through History

Rehabilitation is not a novelty from the 20th century. In the 15th century, during the Renaissance, Alberti (1404-1472) dedicated an entire book of his Re aedificatoria to the issue of building restoration, presenting in it the reasons to rehabilitate buildings and describing precisely the processes and methods of such intervention.² In the 18th century, François Guizot (1787-1874) spoke about rehabilitation, mostly focused on a conservative approach, defending the conservation of historic monuments due to their instilled national feelings, which could reflect the historic progression of its nation. Later, in the 19th century, William Morris (1834-1896), one of the founders of the Arts-and-Crafts movement and the Domestic Revival, defended the conservation of buildings, as well as the urban fabric, based on their religious, historical, picturesque, artistic, antique and symbolic values, which involved to rehabilitate those urban structures in order to extend their longevity. Camillo Boito (1836-1914) theorized on rehabilitation, mainly focused on restoration, proposing different types of intervention of buildings according to their characteristics. John Ruskin (1819-1900) and Camillo Sitte (1843-1903), both contemporary of each other, defended the preservation of cities, which included domestic architecture, as a strategy to maintain important collective memories alive and to respect ancient working values. Gustavo Giovannoni (1873-1947) defended rehabilitation as a plan of varied interventions carried out at different levels, which could improve the environmental quality of ancient urban areas. In the first half of the 20th century, there appeared important developments on rehabilitation theories, special at the urban level. The Athens Charter in 1933 by the Congress for Modern Architecture (CIAM) focused on the functional city, and the importance of planning urban developments was one of the first relevant documents on this subject. It was stated there that buildings of fine architecture, with expression of an earlier culture and public interest, should be preserved. This statement gave freedom to architects to implement the

¹ Christian Schülich, Creative Conversions in Building in Existing Fabric - Refurbishment, Extensions, New Design (Munich: Birkhäuser Oetilt, 2003) p. 10
modern architecture principles. Urban rehabilitations started to include massive demolitions of parts of the city and the construction of new urbanizations according to the modern urban concepts.

**Taxonomies, levels, scales, and degrees**

Distinct urban and building interventions also have been defined, theorized, and structured according to varied parameters along history. The 20th century was particularly fertile in producing such theories and definitions. Taxonomies, levels, sub-levels, scales, and degrees were developed and further studied to shape the complex and extensive scope of interventions.

For instance, Bernard Fielden has theorized on taxonomy interventions. According to his interventions structure, a conservation project can include seven degrees of intervention: prevention of deterioration, preservation of the existing state, consolidation of the fabric, restoration, rehabilitation, reproduction, and reconstruction.3

The Appleton Charter for the Protection and Enhancement of the Built Environment (1983) presented five levels of intervention: preservation, restoration, rehabilitation, reconstruction, and redevelopment.4

Hubert-Jan Henket used the building performance management as a reference to order the different interventions. He proposed a set of definitions, organized according to their scale and their aim toward the building in two families of interventions: performance preservation - cleaning and maintenance and the performance adaptation - renovation, rehabilitation, demolition, and new construction.

The Charter for the Conservation of Places of Cultural Heritage Value (1992) defined seven degrees of intervention: non-intervention, maintenance, stabilization, repair, restoration, reconstruction, and adaptation. James Douglas defined two scales of intervention: range of interventions and levels of intervention. The range of interventions was divided in four families - maintenance, stabilization, consolidation, and reconstruction - that gathered eight actions of intervention: preservation, conservation, refurbishment, rehabilitation, renovation, remodelling, restoration, and demolition. The levels of intervention positions the different levels of intervention and the relationship between the amounts of original fabric retained from the pre-existence and the amount of material.

---

Table 1 | Degrees, levels and scales of interventions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>prevention</td>
<td>preservation</td>
<td>consolidation</td>
<td>restoration</td>
<td>rehabilitation</td>
<td>rehabilitation</td>
<td>rehabilitation</td>
</tr>
<tr>
<td>preservation</td>
<td>period</td>
<td>rehabilitation</td>
<td>period</td>
<td>rehabilitation</td>
<td>rehabilitation</td>
<td>rehabilitation</td>
</tr>
<tr>
<td>cleaning</td>
<td>maintenance</td>
<td>renovation</td>
<td>rehabilitation</td>
<td>demolition</td>
<td>demolition</td>
<td>demolition</td>
</tr>
<tr>
<td>maintenance</td>
<td>maintenance</td>
<td>stabilization</td>
<td>repair</td>
<td>restoration</td>
<td>reconstruction</td>
<td>reconstruction</td>
</tr>
<tr>
<td>non-intervention</td>
<td>maintenance</td>
<td>stabilization</td>
<td>repair</td>
<td>remodeling</td>
<td>reconstruction</td>
<td>reconstruction</td>
</tr>
<tr>
<td>presentation</td>
<td>conservation</td>
<td>refurbishment</td>
<td>renovation</td>
<td>restoration</td>
<td>reconstruction</td>
<td>reconstruction</td>
</tr>
<tr>
<td>deprivation</td>
<td>preservation</td>
<td>consolidation</td>
<td>restoration</td>
<td>rehabilitation</td>
<td>reconstruction</td>
<td>demolition</td>
</tr>
</tbody>
</table>

What makes rehabilitation different from the other interventions?

The first references to rehabilitation were found in national documents in Italy and England. Offically, the term came up in 1965 in the ICOMOS Statutes document, and later in 1968 in the European Resolutions 68/11 and 68/12. The Resolution 68/11 focused Rehabilitation on urban scale, aiming to "the harmonization of the old and the modern town" providing "man with a framework and scale appropriate for his way of life". In 1975, two documents mentioning rehabilitation came up: The Declaration of Amsterdam (COE 1975) mentioned Rehabilitation at the building scale and the Resolutions of the International Symposium on the Conservation of Smaller Historic Towns (4th ICOMOS General Assembly) presented rehabilitation at the level of strategies or tactics adopted to "revitalize towns" taking into consideration factors related with society's memories, "rights, customs and aspirations", in order to respond to "communal aims and objectives".

---

7 Pereira Roders, Re-architecture - lifespan rehabilitation of built heritage, book I (Eindhoven: Bouwestenen Publicatieburo, 2007) p. 16
Bernard Fielden, in his work Conservation of Historic Buildings (1982), defined rehabilitation as an approach to preserve buildings by adapting them to new functions, in order to preserve their historic and aesthetical values, while they are updated to contemporary standards.10

The Appleton Charter (1983), stated that rehabilitation is "the modification of a resource to contemporary functional standards which may involve adaptation for new use, (...) new volumes, materials, (...) required to satisfy new uses or requirements".11

In 1999, the Burra Charter (ICOMOS), defined rehabilitation as "the intervention of modifying a place to suit the existing use or proposed" and it should be "acceptable only where the adaptation has minimal impact on the cultural significance of the place, and should involve minimal change to significant fabric, achieved only after considering alternatives".12

José Aguiar defined rehabilitation as "the series of actions undertaken having in mind the recuperation and beneficiation of a building, transforming it apt for its current use, aiming to solve physical deficiencies and the constructive, environmental and functional anomalies. He also stated that rehabilitation should "search for the modernization and a general beneficiation of the building upgrading its installations, equipments, and the spatial organization of the existing spaces - improving its functional performance and transforming these buildings apt for its complete and update use".13

In 2003, the ICOMOS document Principles for the Analysis, Conservation, and Structural Restoration of Architectural Heritage defined rehabilitation as the process to bring a building to a new use or function, without altering the portions of the building that are significant to its historical value.14

These definitions present a wider perspective of rehabilitation as intervention. A central idea is drawn, particularly on the documents European Resolutions 68/11, 68/12, and Resolutions of the International Symposium on the Conservation of Smaller Historic Towns: rehabilitation is part of urban processes of organization, development, and regeneration of the city at different scales, and to the construction of its image according to current thoughts. It is a multidisciplinary activity, which deals with social, cultural, political, historical, and environmental issues, combining distinct types of knowledge to perform interventions.

On those documents rehabilitation was exclusively described in terms of planning and strategic activities to revitalize urban areas and buildings, excluding descriptions of specific physical actions, which involve constructive or maintaining activities. Rehabilitation was associated to surveys, planning, strategies, and development of

---

concepts that could be implemented in a sustainable way, triggering the potential of cities and buildings allied to the inhabitant's imaginary, enhancing their quality of life.

The character of rehabilitation as an intervention that organizes and sets strategies is even clearer when there is considered the adaptation of buildings and urban areas. The adaptation of such spaces comprises several objectives, which are determined by major plans, sometimes called rehabilitation, regenerative or requalification plans. Those plans, many times, are based on social, cultural, and educational policies, aiming to recover or to reinforce the relations between communities and the built environment, or sometimes simply based on functional and structural needs, aiming to improve infrastructures of mobility and accessibilities within urban areas, considered outdated. In order to rehabilitate those spaces, it is necessary to carry out physical actions, which means constructive or repairing work. In these situations rehabilitation assumes the role of organizing and ordering the type of interventions that will be undertaken. The chosen interventions are defined according to the specificity of the strategy defined by the rehabilitation project. Under a rehabilitation project, other interventions can be performed, such as preservation, restoration, conservation or demolitions, in order to achieve specific goals. For instance, when a rehabilitation project sets up a strategy in order to recover a building or an urban area with a relevant historical value, it is required to undertake conservation or restoration performances, in order to preserve its original features, but adapting them to new functions. The modernization of a space to current functional and comfort standards under a rehabilitation project also can include demolition performances. Depending on the objectives and the strategy, rehabilitation gathers within its scope the use of other interventions to achieve its goals.

Additionally, those documents also prove other significant aspects of rehabilitation, which sometimes are pushed into the background or simply forgotten. One is the complexity associated to rehabilitation with a clear social dimension. It deals with matters that go beyond simple constructive or technological issues, but demand for a balanced combination of them and community memories, symbols, interests, and social needs. Another one is the multidisciplinary character of rehabilitation, which demands several areas of knowledge making them interact, in order to create well based strategies of intervention. Or the importance of the power of rehabilitation to generate a new life or character, which can assign interesting and renovated features triggering the potential of the space, while expanding their lifecycle.

Along with the ability to generate new life, one must consider also the power of rehabilitation to appeal to dream and fantasy, as well as its creativity aptitude. The external world is explored by the individual through intellectual processes of manipulation and logical operations, which intend to understand the objects and phenomena of such world. Vision, hearing, smell, taste, and sense of touch interact simultaneously to capture reality, followed by a process of coordination of all the senses in order to be conscious of that reality and record it in the memory. Fantasy is the human faculty of thinking in inexistent things or objects, relating them with what is known by the individual. Amazing spatial and sensorial experiences can be lived within rehabilitated spaces, where distinct layers of time, materials, textures, ambiences, events, and actors are mixed. Those rehabilitated spaces have the power to appeal to fantasy, evoking poetic images in the mind of the observer,
relating them with known memories and events, and creating new ones. Creativity also assumes a prominent role in rehabilitation. Through creativity, rehabilitation is able to merge the pleasure of well-being in an updated space to contemporary standards with the existence of elements transmitting memorial and subjective messages, offering different experiences to each single user of such space.

The rehabilitation of SESC Pompéia

The rehabilitation of the Pompéia factory in São Paulo, Brazil, by the architect Lina Bo Bardi, is a noteworthy example that shows, in a real case, the rehabilitation principles previously mentioned. This rehabilitation project demonstrates the role of rehabilitation as a strategist and coordinator of tactics at different scales (urban and building level); its complexity and multidisciplinary character; the social character that rehabilitation can lead; its role in creating powerful bonds between objects and people or recovering them when they are absent; the appealing to fantasy through symbolic elements, which belong to the collective imaginary of a community, in order to awake dreams and trigger dynamism; and the considerable role that creativity assumes in rehabilitation in order to materialize concepts in order to achieve its goals.

Urban context

São Paulo is a heterogeneous and discontinuous urban structure shaped by market trends and few zoning laws. It is a place of contrasts that passes from freshness to decrepitude without aging. Its urban territory is characterized by a mixing of different types of buildings and uses without any type of hierarchical rules or coherence: compact buildings built on small plots are set up next to housing areas, empty terraces, and institutional buildings. The factory, one of the few that remained from the industrial period of expansion in the beginning of the 20th century in São Paulo, was located in the industrial neighborhood of Pompéia occupying an area of 16,500 square meters. This suburban area was mostly characterized by the existence of industrial infrastructures and self-organized worker's housing, which began to be built between warehouses and factories in the end of the 19th century. After approximately 50 years, these buildings began to be abandoned by industry and its working force.

---

Rehabilitation strategy

In 1977, Lina Bo Bardi was commissioned by SESC to develop a rehabilitation project for the Pompéia factory. The aim was to rehabilitate an abandoned industrial complex within a major strategic plan, which intended to revitalize a degraded urban area.

Due to the historical value of the factory and its chaotic surrounding area, Lina Bo Bardi decided to preserve the entire complex and to develop the project based on the self-organized model of expansion found at the place, instigating contradictions and new interpretations. The rehabilitation strategy set up by Lina Bo Bardi was essentially based on three premises:

- *Preservation of memories.* The existing buildings were preserved, as well as all the elements that helped to keep the memory of a factory on that place. The new interventions also reinforced the idea of factory.
- *Conception of a new character for the factory.* A new relationship between work and leisure was explored in order to create a new character for the factory. *Play and desire* acquired a productive dimension capable to change the moral order of the work and the civilization, deconstructing, and subverting it. The unpleasant character of the industrial work, its repressiveness, violence, and hardness was erased, and replaced by spontaneity, sensibility, freedom, imagination, and *libido.*

- *Creation of space for community activities.* Key concepts such as community involvement, popular culture, and space democratization guided this rehabilitation focused on the stimulation of collective work, and democratization of knowledge and space.

The new SESC Pompéia

The rehabilitation of the Pompéia factory subverts the program and the intentions, proposing a dynamic social center with a non-conventional structure for culture and sports, based on the preservation of the original elements of the factory. The American and Brazilian peculiarities were incorporated on the project, as well as everything related with the idea of factory was maintained: brick walls, concrete structure, street pavements, and even the old metallic cylinders that remained as waste in the factory were inventively reused, painted and transformed in bins.

The old sheds were adapted into new functions, converting the old industrial structures into a modern project. The popular functions, observed by Lina Bo Bardi while visiting the complex before starting the rehabilitation of the factory, were kept, and added new ordered catalytic elements, such as social areas with spaces for games, audio-visual, and reading, multifunctional restaurant, which could receive also musical performances and parties, exhibition room and art/handcraft workshops. The premises of Aldo van Eyck's architecture influenced very much the development of this rehabilitation. For instance, the spaces of the

---

workshops acquire a fluid circulation; cells combined with short walls limit, without dividing, the different activities: labyrinth walls, a reference to the idea of "labyrinth clarity" of Aldo van Eyck's buildings. Anything should be fixed, but movable and dismountable to not create limits to SESC. The ephemeral should process and define the place and the architecture should be contaminated by the daily life.

The new three towers, added in the back of the plot, completed the functional program requested by the SESC. The first one is a regular tower, which gathers sport functions, distributed on four levels: swimming-pool and game courts. The second tower, connected to the first tower by bridges, is the one that gathers all the service functions: dressing rooms, toilets, exercise rooms, and the accesses. The last one is a high cylinder containing a water tank on its top to supply the water demands in the center. The addition of the three towers with their singularity point to what could come to be a new stand of intervention in the city: it creates a mark, a new visual reference in a landscape that is homogenous in its complete heterogeneousness, identifying the SESC Pompèia land.

The remaining 3,000 square meters, which includes a wooden deck over the stream (a solarium called the "beach road"), was conceptually defined as a frontier zone. It was a space to join and to separate two groups of buildings with no relationship to one another, because of its scale, language or history, in simulative dialogue with its current context.

The circuits are also important in the rehabilitation performed for the Pompèia factory. From the very first sketches, several paths run through the buildings, reinforcing the water movement, constantly present in the whole set, as everything was liquid. Like falling waters, those paths drop from up to down inside of the sheds and follow the river through the streets between the naves, ending in a big open swimming-pool. They were places within the complex used to perform activities, but also mechanisms to accelerate or to slow down the time, to extend the sensations and the perception of the place. SESC is a good example to understand the notion of time, related to the movement of the body in space, not the simple and boring walking, but as a free dance done with a conscious body.

The existent internal street, original since the foundation of the factory, introduces an urban dimension into the complex. First, this street bridged the urban space of the city with the private space of the center, inviting the first one to enter in the second. Second, this main street, slightly sloped, led the visitants through the cultural functions of the center, inviting them to enter in another street at the back of the plot (Black Water Street) where the sport facilities could be found. The meeting of these two pedestrian streets recreated an urban environment, as if it was a neighborhood, where several streets cross each other, with functions and services distributed along them. Finally, the urban dimension was reinforced not only by their function of accessing the diverse spaces of the center, but also by its multifunctional use. The streets were transformed into a stage for

---

19 Luiz Trigueiros et al., *SESC - Pompèia Factory* (Lisbon: Editorial Blau, 1996) p. 17
20 Ibid. p. 14
spontaneous manifestations or formal performances, reminding a public square or park where cultural activities, music or dancing are freely performed for the enjoyment of everybody. This strategy made possible to conceive an extraordinary rehabilitation that integrated all the activity spaces as well as their continuous communication and circulation with an amazing urban character within a closed plot.
Social goals

There we have undertaken a small socialist experiment.  

Conviviality between people is the great generator of everything.  

The second time I went there, a Saturday, the atmosphere was different - no longer the elegant and solidarity Hennebiquean structure, but happy people, children, mothers, parents, and OAPs went from one shed to another. Kids ran, youngsters played football in rain falling through broken roofs, laughing as they kicked the ball through the water. Mothers doing barbecues and making sandwiches at the entrance of Clélia Street; there was a puppet theatre near it, full of children. I thought: it has to continue like this, with so much happiness. I returned many times, Saturdays and Sundays, until I really got it - understood those happy things people were doing.

The rehabilitation of the Pompéia factory confirms the social strategic dimension of rehabilitation when it is intended to create a space for the community, made by the community, and to be reinvented by that same community, providing both play and entertainment. The establishment of social goals as one of the main guidelines of the rehabilitation strategy for the Pompéia factory was an expression of belief on the capability and potential of people to create.

The rehabilitation strategy demanded the preservation of an atmosphere of spontaneous sociability previously existent at the place. People had freely chosen those spaces for recreation and the location already had great vitality. The challenge was to maintain that positive energy and to increase the possibilities for community activities, while expanding the complex in order to respond to the extra functional demands requested by the SESC.

The tag name given by Lina Bo Bardi to the SESC project - “cultural city” - also reveals the social dimension of this rehabilitation project. According to her vision, the concept of city had double meaning. On one hand, the city is a place of refuge; and on the other hand, it represents a place of attack, which she used to describe it with the word goal (football). The reference to football, the favorite sport in Brazil, is present on the very first sketches of the project. The football invoked by Lina Bo Bardi is happy, healthy and expresses the freedom of the body for dancing, an aspect very characteristic from the Brazilian people. It is a magic football.

---

22 Lina Bo Bardi in Luiz Trigueiros et al., SESC - Pompéia Factory Lina Bo Bardi, (Lisbon: Editorial Blau, 1996) p. 8
23 Ibid.
25 Ibid.
like the one practiced by Garrincha.²⁶ Garrincha could transform any ordinary field into a circus for playing and fun, the ball into a trained animal, and the game into a party. The reference to the football of Garrincha is a metaphor of the art of fighting inside of the oppressor field, a fight very well known by the workers. It is also the art of skilful dribbling to break up the game of the opponent, which in the case of that people was related with their fight against the established game of interests of corporations taking advantage from their work. This happiness and freedom brought by the rehabilitation of the Pompéia factory was what the community of that place needed to trigger their natural spontaneity, so innate in the Brazilian people. It was a platform for free expression, deeply desired by a community who was oppressed by the work, with a lack of space to perform their activities, and willing to escape from their work routine.

The social character of this project is reinforced by the passionate research made by Lina Bo Bardi, who wished to find the essence of the Brazilian popular culture, as well as on the search of the poetry of the work, which contextualizes the work and integrates the worker within his culture.

Another aspect that reflects the social character of the rehabilitation of the Pompéia factory was the circulation plans. In the first sketches, the movement and the circulation of the people was the main theme of the whole set. Several ramps and paths cross the interior and the exterior of the sheds. While visiting the factory at weekends, Lina Bo Bardi saw people, particularly children drifting between the old factory sheds. This experience had a very strong influence on defining the strategy to rehabilitate the whole factory.

A city, if it is really a city, has a very compound rhythm based on many kinds of movement, human, mechanical, and natural. The first is paradoxically suppressed, the second tyrannically emphasized, the third inadequately expressed. To cater for the pedestrian means to cater for the child. A city which overlooks the child's presence is a poor place. Its movement will be incomplete and oppressive. The child cannot rediscover the city unless the city rediscovers the child.²⁷

The first years after the rehabilitation of the factory, SESC Pompéia became a novelty on the Brazilian cultural scene. Its success was mostly based on the strong social character of its rehabilitation, which took people and the creation of an attractive environment for human activities, as one of its main goals. In SESC, the architecture of the human behavior was studied, understood, and manipulated. Spaces were designed in order to create contexts, references and “giving birth to life”. The rehabilitation of the buildings was performed according to a sensorial approach, proposing architecture totally connected with human life. The final result was

²⁶ Manuel Francisco dos Santos (1933 -1983), known by the nickname Garrincha (little bird) was a Brazilian football right winger and forward. Also called Alegria do Povo (Joy of the People) and Anjo de Pernas Tortas (Angel with Bent Legs), he was considered by FIFA the best Brazilian player ever after Pelé. He is widely regarded as the best dribbler in football history; available at: http://en.wikipedia.org/wiki/Garrincha (accessed on 08.01.2010)
homage to the ordinary people, the forgotten, the ugly ones, and a powerful criticism to a world that constantly punishes the losers. SESC Pompéia became a democratic cultural space, a place where finally people were honored, allowing them the social integration they were fully entitled to, which is their right.
Symbolism and dreams

The rehabilitation of the Pompéia factory also demonstrates how rehabilitation can appeal to fantasy through specific symbols known by people. These symbols appeal to their capability of dreaming in order to create bonds with the building, as well as to trigger interesting and distinct sensorial experiences.

The rehabilitation of Pompéia factory searched for a direct communication with the public through several elements distributed along the entire complex, which asked for the creative popular imaginary and symbolism, and at the same time linking with the daily-life such as the bread oven, the furniture made from wooden boxes, the tissues hanged from the roof structures, the falling water, the river São Francisco, and the native vegetation.28

Beneath the old roofs of the three conjoined sheds, winds a rivulet cut into the stone flooring, a reference to the principal river of the Northeast, the São Francisco River. To one side a large fireplace, kept alight on cold days, unites in the same environment the ancestral hearth, the water and earth of the tiles and the bricks in the walls of the sheds creating the magic of a reunion of the four elements.29 In the rainwater gutters that border the central street, a lining of pebbles recalling so many other streams. In the flooring of the toilets, it appears the juxtaposition of coloured ceramic tiles. In the junctions between the walkways and the two buildings of the sports area, protective elements are sculptured from iron, the flowers of mandacaru, the most common cactus of the north-eastern Brazilian territory. The kitchen and the swimming-pool are covered with tiles of marine motifs, drawings of birds and tropical plants. Along the water tower, the concrete pours in just the right amount to make one person think that the women of cajazeira might have made their laces there. It is these small charms, these small gestures that are added to the memories impregnated into the walls of the sheds, are offered to the user as clues, so that he/she may begin to recognize himself/herself in the work and appropriate it all.30

Multidisciplinary character

The rehabilitation of Pompéia factory is also a reference on demonstrating the multidisciplinary character of rehabilitation. Different areas of knowledge were coordinated and managed under this rehabilitation project to implement all the elements that came together to build up the SESC Pompéia. Under this rehabilitation project, restorations, conservations, preservation actions and new constructions were performed. More than just to rehabilitate a degraded industrial complex, the project was inserted in a plan that intended to trigger the requalification of an urban area. This fact involved to take into consideration more than simple constructive or technological aspects. Social, cultural, and educational aims were added to the strategy of intervention; traditions and popular culture enriched the project in order to create bonds between people and the buildings; and distinct

---

29 Luiz Trigueiros et al., SESC - Pompéia Factory; (Lisbon: Editorial Blau, 1996) p. 20
30 Ibid., p. 21
functional programs were developed as a way to encourage the participation of the community in varied activities, as well as people interaction.

Rehabilitation - a Strategist through different historical moments

Rehabilitation has been performed along history to upgrade and to revitalize the urban territory. Intimately associated to economical questions, management of available resources, and symbolic values, rehabilitation has passed through different conceptual transformations, which have influenced the way the urban fabric and the buildings have been approached.

Pre-industrial time

Adaptation for new use is not a new phenomenon; buildings have been re-used throughout history. In pre-industrial times, the reconversion of existing buildings was due to economical needs. The scarcity of different materials for construction, the difficulty of transportation as well as the complexity of demolitions made necessary to reuse places and buildings, and to recycle materials and components.

In the 6th and 7th centuries began the great period of transformation of parts or the whole of the forum’s unwanted secular monuments into churches and chapels. In 625/38 a.C, during the Pope Honorius I, the Senate-House was adapted into the church of S. Adriano. At some uncertain date in the 6th century, the vestibule of the Imperial Palaces became the church of S. Maria Antiqua.31

Documents of the 8th and 9th centuries mentioned the demolition of ruins to create new buildings. The historian Agnellus of Ravenna described the demolition of a country palace of Theodoric at his own order:

Now in our times, I ordered my servants to demolish this palace and I brought its materials to Ravenna for the construction of my house which I built from the foundations.32

Abbot Josue of S. Vincenzo al Volturno, some time before, wished to demolish a very ancient temple in the region of Capua, in order to reuse its columns and other marbles in a new church. In 913 a.C., the chancellor

---

32 Ibid., p. 213
of Beregion’s required a large part of the theatre of Verona in order to build a hospice and church on the site.33

The unwanted and ruinous public buildings could be put to new uses in two different ways. First, they could be treated as quarries and torn apart in order to reuse their building materials. Second, they could be reused in more or less their original form, but for different purposes. This second option had the advantage that the original structure was thereby preserved and maintained.34

Any large building might be adapted to defensive purposes. This could be done in two ways. The first method was the incorporation of the building into a walled circuit in order to strengthen the latter, save on material and effort. Several monuments of Florence were used to perform such interventions, as well as in Rome where several buildings were incorporated to the Aurelian walls, including houses, the pyramidal tomb of Caius Cestius, and the Amphitheatrum Castrense. The second method was the adaptation of the buildings into fortresses. We can mention as examples the Amphitheatres of Spoleo and Capua, and Mausoleum of Hadrian (Castel S. Angelo), in Rome. Since it dominated an important bridgehead into the city, it was incorporated into the general defenses of Rome at an early date.35

Centuries later, for instance, the Baths of Diocletian in Rome were converted into the Santa Maria degli Angeli church by Michelangelo in 1566.36 The Coliseum of Rome was used to supply materials for the constructions carried on during the Baroque period.

19th century

In the middle of the 19th century, rehabilitation was performed at large scale on cities. Future, modernism, vanguards, and prosperity were keywords in urban development strategies, which led rehabilitation to perform massive demolitions as a strategy to revitalize cities, according to the new patterns of thought, and to the latest urban and architectural visions. At that moment, the regeneration of the urban fabric was equal to the demolition of existing buildings, and the new construction, adapting cities to the emergent demands that rose up with the expansion of industry and the consequent changing of society’s life patterns. Cities had to be adapted to give place to new neighborhoods for workers, factories, warehouses, office buildings, leisure areas, commerce, and green zones.37 The Haussmann renovation of Paris or simply the Haussmann Plan (1852-1870) is a remarkable example of a rehabilitation performed on that period, not only by its radicalism and scale of intervention, but

---

34 Ibid., p. 207
35 Ibid., p. 210
because it was the setting up of regenerative strategies carried out under a major urban development plan, which involved all the aspects of urban planning, both in the center of Paris and in the surrounding districts: streets and boulevards, regulations imposed on facades of buildings, public parks, sewers and water works, city facilities and public monuments.

Aims

The relevance of Haussmann Plan for Paris also relies on the fact that those strategies aimed to achieve clear goals. Haussmann was in charged by Napoleon III to undertake a plan to transform Paris, the capital of the Second Empire, into the latest main worldwide urban reference, displacing the dominance of London.

Ideology

Another aspect that makes the Haussmann Plan significant as a rehabilitation performance is that the construction of those strategies were based on architectural and urban concepts promoted at that moment, as well as on particular functional, social, and cultural needs of that time and place. Concerned with the totality of the urban space and to attend the emperor’s requests, Haussmann introduced a new vision of urban planning, changing not only individual buildings or the style of architecture, but setting up a strategy to renovate Paris, creating a whole new urban structure.

Socio-economical and urban context

The strategies set up by Haussmann were in accordance with the rapidly growing demand for middle class housing and luxury space, leisure and spectacle, as well as to create infrastructures to accommodate low income groups in the city. At this time, the city was still facing the same social, economic and political problems, which contributed to the revolution in 1848. Economic recovery from one of the first full-fledged crises of capitalism over accumulation was blocked by several barriers. Capital was not connecting to labour, strong tie artisan communities in the city still formed a strong political force, and the fragmented locally focused national market undermined the rationalization of national and urban space. Paris was held down by a straitjacket of 18th century structure of social practices confined in a medieval frame of physical infrastructure.

Paris was characterized by the dominance of the medieval structure and the compactness imposed by the city walls. The growing population demanded new and better ordered functional structures. The inner city, with a density of 850 inhabitants per hectare, was crowded of craftsmen and working class; while the aristocratic housing area had a density of occupation of 100 to 250 inhabitants per hectare, much less than the center of the city. The proletarian settlements in the center of the city were set next to the main political and administrative buildings. From the 18th century onwards, the separation between classes caused the occupation of the historical center of Paris by the working class and the expansion to outlying areas by the wealthy bourgeois.
This occupation allowed the control of the center of the city by the rebels during the popular insurrections between 1830 to 1848 in Paris, who took advantages from the deficient accessibility of the narrow streets of the center of Paris, as well as the lack of technical and human infrastructures in that area to resist against the national French army. Paris was a city of economical contradictions, and became a combat place of cultural values and classes.

**Upgrading Paris**

To change this situation Napoleon III, together with Haussmann, implemented a wide ranging of measures based on a Post-liberal model of management. First, the introduction of a modern credit system, breaking up with the conservative banking system, enabled small investors and developers to enter the market. This state directed speculation strategy and state financed public works to absorb surpluses of capital and labour also attracted middle and large developers into the market transforming Paris into a landscape of permanent flux. The Expropriation (1840) and the Health Laws (1850) also had a crucial role in the implementation of efficient urban strategies settled by Haussmann to regenerate Paris according to modern ideas.

**Mobility**

During the eighteen years of the Second Empire (1852-1870), the French national and urban space was entirely rationalized, with Paris as the main reference. Haussmann ordered the construction of a radial system of railway tracks around Paris, to facilitate transportation and to integrate the Parisian hinterland and the countryside. The network was expanded from the existing 1.931 Km in 1850 to 17.400 Km in 1870. Similarly, the installation of a national telegraph system and a network of roads throughout the country contributed to the ongoing rationalization of a national and urban space.

**Destruction to renovate**

"The old Paris is gone (the form a city takes
More quickly shifts, alas, than does the mortal heart);"

"I picture in my head the busy camp of huts,
And heaps of rough-hewn columns, capitals and shafts,
The grass, the giant blocks made green by puddle-stain,
Reflected in the glaze, the jumbled bric-à-brac."

"Once nearby was displayed a great menagerie..."
“Paris may change, but in my melancholy mood
Nothing has budged! New palaces, blocks, scaffoldings,
Old neighborhoods, are allegorical for me,
And my dear memories are heavier than stone.”

Within the urban space of Paris, the medieval center of the city faced one of the most radical urban renovations in history, mainly based on massive demolitions. Slums were cleared around the city center and the considered dangerous classes were expelled, in order to improve the capacity for the circulation of goods, military forces, and people within the city. The expelled working class, controlled by the army and the police, set up in the industrial outskirts of Paris. This strategic movement brought the bourgeois again to the cultural and functional control of the city. The bourgeoisie recovered the central areas of the city and the periphery located in the opposite side of the industrial settlements. Haussmann introduced strategic urban connections to link efficiently the wealthy periphery with places of recreation, industry and commerce, opening 145 km of grand boulevards. Together with the construction of new mobility infrastructures, Haussmann planned the construction of a water system to supply the new luxurious houses of the wealthy bourgeois built on the renovated city center, as well as a sewage system, in order to manage a healthy environment in the new glamorous Paris. Insalubrious neighborhoods were opened up for the free circulation of fresh air and light during the day. The newly installed gas lightning turned the boulevards into pumping veins were the public life of the city could take place at night. Haussmann was also obsessed with details of alignments, creating local asymmetries to produce a symmetrical effect at a grander urban scale.

Rehabilitation strategies

Basically, Haussmann set up a group of rehabilitation strategies, which intended to renovate Paris at distinct levels according to what was fashionable and needed at that moment. His rehabilitation plan encompassed aspects such as:
- Organization of a legal financial system, allowing the execution of public constructions, and combining the interests to promote economical prosperity.
- Promotion of work for the Parisian population diminishing the tension between classes.
- Structuring of the city through a system of radial arteries and rings connecting the distinct neighborhoods, the train stations with the city center, and facilitating the access and the mobility of military corps into the city.
- Demolition of medieval buildings on the historical center of Paris, moving the working class from the center to the industrial outskirts, in order to build public buildings, housing, and commercial areas.

---

- Organization of the Parisian administrative and repressive structure - military headquarters and police stations - in order to control the urban areas of the working class.
- Adaptation of the existing technical structure of the city to the demands of the new modern Paris through the latest scientific advances: water supply through aqueducts, sewage system, waste management, lighting, and public transport.
- Construction of governmental buildings for administrative purposes.
- Creation of a homogenous image for the city according to the bourgeois social, cultural and economical values, relating commercial, leisure, and administrative areas with residential zones.
- Displacement of the working class to the industrial outskirts of Paris.
- Organization of the green system of the city, building public squares and gardens.
- Development of urban and visual regularization laws of coherence for the new constructions;
- Opening new streets within the urban fabric: Haussmann built 95 Km of new streets that cut throughout the medieval fabric, and erased approximately 50 Km of old streets;
- Creation of schools, hospitals, colleges, headquarters, prisons, and public parks.
World War I

After World War I, rehabilitation strategies based on destruction and on the clear contrast between the old and the new were strengthened. They remained as a standard approach until the 1960's. By that time, the priority was given to innovative urban and architectural visions, which could update the urban space according to the rising demands of society and to design cities in the future. Taking again Paris as an example, about 50 years after the implementation of Haussmann plan, the city became, again, a target of those destructive strategies of rehabilitation, in order to update it once again to the new needs - The Plan Voisin by Le Corbusier.

Aims

We are in the very center of the city, the point of greatest density of population and traffic; there is any amount of room for both.  

For a number of years French officials were unsuccessful in dealing with the squalor of the growing Parisian slums and the rising of the traffic within the city in the beginning of the 20th century. In 1925, Le Corbusier, who was profoundly influenced by those problems at the turn of the century, was sponsored by Gabriel Voisin, of the Voisin Aircraft Company, to present a proposal to deal with the cramped and the dirty conditions that enveloped much of the city. According to the analysis of Le Corbusier, Paris was too much dense, small and old, and it was outdated. Paris had stopped physically and on time, as a medieval relic. It was necessary to relate the urban spaces and to restructure the city according to the emergent patterns of life.

The plan was complex and long, requiring a massive economical effort to renovate Paris according the proposed strategies. Due to this fact, the Plan Voisin was addressed to a private consortium of investors, supported by banks and corporations, and not to governmentally-headed institutions. According to Le Corbusier, the plan had to convince in first place the elite, meaning the heads of the large French organizations and corporations. Therefore, the plan for the new renovation of Paris was first presented to chief executives of the major automobile companies, such as André Citroën and Louis Renault.

Ideology

The Plan Voisin represents the Modern Idealism in its purest state. The modernist city was based on a vision that sought to stand for the eradication of disorder, overcrowding and the advance of technology and man's development towards a bright future. These premises drove Le Corbusier in setting up the Plan Voisin for Paris.

The plan was based on the division of the urban space in sectors - business, elite residential, industrial, and worker garden city, emphasis on speed / movement (automobile) creating adequate circulation of transport

---

within the city without which it could not perform its economic and cultural functions effectively, and provision of healthy, modern worker housing, together with abundant natural areas.

The new modern architectural forms proposed in the plan intended to provide a new organizational solution that would raise the quality of life for the lower classes. The plan presented an innovative perspective of the urban space, brought by the increasing massive use of the automobile. The urban space was seen as a set of destinations, in which people could move though continuously. This concept promoted the construction of new freeways through the entire city. Besides, it endorsed further destructions of traditional urban spaces to build freeways that connected the new urbanism to low density, low cost, suburban, and rural areas, which were free to be developed as middle class single-family housing. The intention of Le Corbusier with the Plan Voisin was to build up an answer for the modern needs and at the same time would regenerate economically the city:

From right to left, from east to west, you see the great East-West throughway of Paris which embodies the future of Paris and offers the City Council the chance to launch a gigantic financial enterprise, a money-making enterprise = a source of wealth.49

Demolitions and extrusions

Influenced by the Manhattan experience in the beginning of the 20th century in USA, where the city was totally compressed and grouped in vertical extrusions in a limited area, Le Corbusier proposed the demolition of part of Paris to rebuild it rationally. He proposed to flatten around 40 ha of land, most of central Paris next to the Seine. This area was considered by Le Corbusier as unhealthy and old-fashioned (the surroundings of the market Les Halles, the street Rivoli, the Opera, the Madeleine Square, and the Faubourg Saint Honore). The flatten center of Paris would be replaced by eighteen cruciform towers of sixty stories, approximately 200 m high, displayed in an orthogonal street grid and park-like green space. The crystal towers were planned to be spaced at intervals of 400 m to avoid more densely-sited urban fabric of Manhattan. The open space ensured views from the offices of the landscaping below, and each tower was designed with roof gardens. The vertical rise of the skyscrapers intended to solve the problem of the horizontal congestion of Paris, as well as to achieve higher density and open space. In general, the Plan Voisin attempted to balance a rigid geometrical infrastructure and architecture with more natural layout of parklands.41

---

40 Le Corbusier (Charles Edouard Jeanneret-Gris), The Radiant City: Elements of a Doctrine of Urbanism To Be Used as the Basis of Our Machine-Age Civilization (London: Faber and Faber, 1967) p. 233
Housing

The Plan Voisin was a housing system that separated the business elites from the workers. The *immeuble-villas* of the bourgeoisie were located in the western residential part of the plan. This elite housing system, non-profit and cooperatively owned, was composed of low-rise apartment buildings containing two stories, luxury units. The design of the unit ensured privacy similar to an individual, free standing home, but their assemblage in steel-framed complexes promoted convenience in communal services, which Le Corbusier imagined as building maintenance, housekeeping and food shopping.⁴²

Nature

The Plan Voisin stated Le Corbusier’s concept of nature. Space, light, and forms were considered by Le Corbusier as part of nature. Nature was more than simple greenery, but it was a dialogue between buildings and the forms of the surrounding hills and mountains, which in the case of the Plan Voisin he created artificially in the center of Paris.⁴³ His concept of nature was associated with his vision of the city inspired by the example of Cubist art, considered by him both urban and meditative. The city was as a place of meditation and cultural creativity. Meditation requires calm and serenity, lofty solitude and nature. These concepts explained the proposal of the plan in opening up the city with taller and more widely spaced buildings offering a sense of distance to provide urban space for such activities and experiences. The business district was an affirmation of the central importance of both private industry and the city’s population need for trees, lawns, sunlight, air, and less noise. Moreover, the architectural shapes presented on the plan were designed to provide maximum sight lines to the natural surroundings and to allow ample sunlight to enter in work and living spaces.⁴⁴

Brain center

With the Plan Voisin, Le Corbusier set up a strategy in order to transform Paris into the world’s prime city of administration. The centralization of business - a brain center - was very much in association with the widespread ideas of scientific management and faith in the private sector. Low-rise government buildings were abandoned to the residential quarter, perhaps in anticipation of their hoped for decreasing utility. The skyscrapers were the headquarters of elite industrialists, those who would administer industrial production to the benefit of all, and dissolve the need for a public sector.⁴⁵

---

⁴⁵ Ibid., p. 39
Fast mobility: the freeway

Le Corbusier was conscious of the fact that the automobile was changing human agglomerations; therefore, the plan was designed for the exponential growth of automobile circulation. There is a progressive elimination of the street as the dominant organizing principle of urban form. An elevated highway 20 km in length that would cross Paris from East to West together with a new rectilinear street system, separated from pedestrian routes by grade, replaced the less rational, narrow and curving streets of medieval basis.

Monuments: the relation with the past

The past is transformed into something that is not dangerous anymore to life, but it finds its true place within it.

The plan also integrated monuments, which were identified as valuable cultural treasures: the Louvre, the Arc de Triomphe, and the Place de la Concorde, all of which actually remained outside of the plan's limits; the Palais Royal, the Place des Vosges, as well as townhouses and churches, such as St. Martin and St. Merry. The idea of Le Corbusier was not to destroy the past but rebuild it. Stripped of their antique urban fabric, these buildings would be preserved like museum pieces in the green carpet of skyscrapers and low-rises.

Le Corbusier proposed with the Plan Voisin to replace Paris by a continuous park. The city was planned to become a system of mechanical infrastructures built above nature, while the past was transformed into fragments of ruins, disposed and displayed on the greensward, in an 18th century manner.

---

After World War II

After the 1960s, the way rehabilitation approached the built environment changed. The perspective embraced from the 1960s on was more similar to the approach followed in the pre-industrial time, regarding the reusing and adaptation of buildings and places, as well as the recycling of materials and components, as an alternative to massive demolitions. The factors that forced this changing were direct consequences of the ones that were on the base of the strategies followed until then: difficulty on replacing parts of the urban fabric, such as neighbourhoods or industrial structures, and the emergent ecological concerns. By the 1970s, strategies of renovation became focused on conservation.

Particularly from the 1990s onwards, rehabilitation enlarged its range of intervention embracing buildings and urban areas that were not seriously contemplated as interesting and worthwhile to be rehabilitated, such as military complexes, industrial sets, and abandoned circulation areas. These buildings and areas turned into fields for experimentation, belonging to a strategy of economical and sustainable development performed from then on.

The Strijp-S in Eindhoven is a fine example of such rehabilitation strategies undertaken from the 1990s on. Strijp-S is an area of 66 acres of surface within the city of Eindhoven used to be the Philips estate. In the past years, those facilities started to be moved to new and modern buildings in the outskirts of the city, where technological parks were settled. What remained in Strijp-S was a set of empty industrial buildings and an enormous area within the city without a clear function. Facing this situation, the municipality of Eindhoven set up a rehabilitation strategy for this area to transform it into a complex and multifunctional urban space that mixes living, working and recreation.

The rehabilitation plan of Strijp-S provides for the preservation and renovation of historic buildings combined with new estate. With creativity and culture being made visible and tangible in all facets, Strijp-S intends to become the Creative City with a distinct character, ambiance and personality.

Eindhoven

With over 200,000 inhabitants Eindhoven is the fifth city in the Netherlands where reputable companies, such as Philips, DAF and Campina, have been established. With the development of the High Tech Campus in Eindhoven as an international location for top-level technological activity and the University of Technology as a source of innovations, Eindhoven has become Leading in Technology. Education plays a key role in Eindhoven, having the University of Technology and also the Design Academy as its most remarkable educational facilities, attracting both students and visiting lecturers from all over the world. Eindhoven has also created several landmarks, such as the Van Abbeumuseum, the Witte Dame and the Evoluon building.
History

Being the largest private employer in the Netherlands, Philips has played a mayor role in a lot of households. Every day no less than 12,000 people pass the entrance to Strijp-S. It all started in 1891 when Gerard Philips opened a small light bulb factory in Eindhoven. The small family business developed into a multinational enterprise that has brought several innovations along the years. In 1917 the first projection lamps for X-ray tubes were developed and in 1927 Queen Wilhelmina addressed the Dutch people in East and West India from the physics laboratory (the so-called NatLab) via an experimental short-wave transmitter by Philips. In 1946 the world’s first television broadcast took place, from Eindhoven. The Philips estate grew to be an industrial city with its very own infrastructure often referred to as the Forbidden City because of the strict entrance policy that was used in order to protect the technological developments and discoveries. In the new set-up, this environment where so many discoveries were born will once again be the cradle of creative developments and innovations.

Housing

The rehabilitation strategy set up to Stijp-S intends to create a renovated and distinct urban character emphasized by the diversity in architecture, reinforced by the existing monumental buildings transformed into living and office space. Mostly located at the border of Strijp-S in the area between Torenallee and Kastanjelaan, approximately 2'500 to 3'000 houses of different typologies were planned, adapting some of the former existing buildings into housing as well as the construction of new town flats. Housing was strategically mixed with cultural facilities disposed at the ground level of the renovated and new buildings and studios for artists above the residential level.

Working

The rehabilitation plan of Strijp-S also included working facilities in the area. A surface of 90'000 sqm, located next to Phililteelaan, the second green boulevard in Strijp-S besides Torenallee, were assigned for offices in order to receive national and multinational companies, as well as for beginning entrepreneurs in the creative sector. In addition to of the office space, commercial facilities were also planned, such as shops and catering businesses. The area is accessible through a suburb train station as well as the Eindhoven ring-road.

Culture

Culture in all its aspects assumed a relevant role in the rehabilitation strategy of Strijp-S. Theatre, cinema and concert platform are some of the cultural facilities in the area, together with spaces for festivals and street shows, and exhibitions. The strategy intended to knit closely culture with every day life. Not only the performance or exhibition is visible, but also the build-up to it. Rehearsals, preparations and other matters leading
to the final goal are visible in Strijp-S. The goal is to emphasize the creative character of Strijp-S showing its cultural features through the continuous interaction between city and public.

**Studios**

Strijp-S intends to become a stronghold of designers, artists and musicians, theatre makers and technical creative spirits. In the Klokgebouw and the NatLab studios and workshops are created, combined with living space. The historic buildings are spacious and the incidence of light and position make them highly suited for creative professions. The industrial inheritance of Strijp-S has not only historical or aesthetical interest. The buildings are given a new use, including living, working or a combination of those, stimulating Strijp-S' urban character.

**Green**

The Torenallee, running straight across Strijp-S, is a green structure with trees and a large pedestrian area in the centre of Strijp-S where all sorts of activities can take place. The layout of the Torenallee makes this not only the meeting place par excellence of Strijp-S; its spacious design also makes it the ideal spot for street shows and pavement artists. 59

---

Rehabilitation and the new challenges of the 20th century

In Pre-Industrial times, rehabilitation strategies were basically characterized by concepts of adaptation, reusing, and recycling of buildings, materials and components. This approach was strongly influenced and conditioned by economical factors and resource’s management, which did not allow many radical urban transformations. Changes were performed according to the ideologies stated at the moment, but in a more constraint way.

With the Modern mentality, supported by Industrialization and its possibilities of mass production, faster and better transportation and generation of money and prosperity, new urban concepts were stated. The previous rehabilitation’s trends, based on reusing, adaptation, and recycling were replaced by strategies of massive demolition. Those strategies reflected the paradigms at that time, which asked for new urban models, but also the emergent social and cultural demands. Rehabilitation went beyond simple design tendencies or aesthetical questions. Its strategies were part of a major plan, which aimed to develop a new urban model, the Modern City, based on the differentiation of old and new, where the new, associated with the future, had prominence above the past.

Recently, environmental concerns have requested the development of new strategies to deal with this subject. Contemporary visions on transforming the urban territory more sustainable and environmentally friendly have influenced rehabilitation strategies. Pre-Industrial concepts of rehabilitation were recovered: strategies based on unconsciously destruction and wastes were replaced by the reconversion and recycling of materials, surfaces and energy. Within this conceptual approach, rehabilitation has set new strategies based on changing facades, revalorization of industrial areas, renovation of pedestrian and commercial zones, and efficient renewable energy production. Besides, rehabilitation has extended its intervention strategies to buildings and urban areas that previously were not contemplated as appealing and worthwhile to be rehabilitated. From this renovated approach of rehabilitation toward the built environment, three types or categories of buildings have emerged: buildings for displaying, buildings for experimentation, and buildings for exploitation.

Buildings for displaying

Buildings for displaying are spaces of presentation. The rehabilitation of these buildings is part of urban policies or strategies that intend to bond objects (buildings) and community (citizens), and to reinforce the cultural identity and the historical consciousness of a place or building, promoting at the same time economical activities, such as tourism. This strategy is many times used to conserve historical monuments, such as castles and factories, keeping the original features visible. The museum of Portimão, in Portugal, is installed in a former factory of fish Conservas La Rose. The factory is one of the most important economical symbols of the past for the population, representing the main economical source for thousands of families in the entire city. Due to its significant value for the community, the building was rehabilitated within a strategy that intended to promote
historical and identity awareness. Although new structures were added to receive new facilities, the original building was totally restored, remaining the original spatial features and the old machinery of the factory, showing aspects of the former activities performed in the building. The spaces are themselves the exhibition; people visit the museum to see and to experience the environment of the factory and to be familiar with one of the most relevant objects of the city’s identity.
Buildings for experimentation

Empty buildings without functions, ignored, and outdated according to contemporary standards of use, such as industrial or commercial naves, become an exciting platform for experimentation, due to their low economical and historical value. Within this rehabilitation strategy, creativity has a prominent role in triggering new interpretations. Unusual, sometimes almost surreal, spatial experiences take place in these buildings by assigning to them functions completely opposite to the original ones.

Artists were one of the first groups to become interested on such buildings, discovering their spatial potential, and operating transformations on them. The reuse of such buildings has several advantages: do not request fixed and long term interventions and can be appropriated by users in a transitional and informal gesture, for instance, appropriating public space to carry out cultural activities as an action of functional creativity, or using neglected structures to install temporary exhibitions or to develop performances. For this spatial appropriation, few physical elements are needed, many times installing simple objects to improve the circulation and the accessibilities, such as ramps and stairs. The most important element is the empty space, which acts as a container for experiences and ideas.

Figure 40 | Switching station artists lofts, Chicago, USA

Figure 41 | Tijdelijk Restaurant in Strip-s, view of the temporary kitchen, Eindhoven, The Netherlands, 2009

Figure 42 | Tijdelijk Restaurant in Strip-s, view of the dinning room, Eindhoven, The Netherlands, 2009
Buildings for exploitation

Urban areas and buildings, which were not seen as potential objects of triggering commercial, social, and cultural dynamism are activated to create economical profits and prosperity through the opening of new market perspectives. Within this rehabilitation strategy, former factories are transformed into headquarters of multinational companies or into luxurious apartments (lofts), a profitable business for real estate companies; military complexes are adapted into hotels, industrial structures are transformed into social and cultural facilities, such as apartments for elderly (Røsilos in Copenhagen, Denmark, by MVRDV), public parks (Duisburg Park, Germany), and art centers (Tate Modern, London, England, by Herzog & de Meuron; Fiat Lingotto Factory in Turin, Italy, by Renzo Piano, 1994).

This strategy presents several advantages. On one hand, it allows having cheaper prices of urbanization, to reuse places, and to use large surfaces. On the other hand, the historical value of the buildings emphasizes the prestige of "being old", the atmosphere of authenticity, and the relation between old and new as a symbol of innovation and creativity, dialogue and adaptation.
These rehabilitation strategies to revitalize urban areas and buildings have discovered new ways of looking at those objects and places, finding on them qualities that have triggered the development of new conceptual typologies. These new typologies copy and recreate the features exclusively found on rehabilitated buildings, such as factories: light, big surfaces, flexibility, multifunctionality, and ephemeral spaces, allowing the use of the space for a wide range of functions by different groups of people and interests. Those qualities, for instance, were widely explored and disseminated in the work of Bernd and Hilla Becher, who were interested on industrial structures and in showing their inherent beauty and spatial qualities. This alternative looking to urban areas and buildings, together with rehabilitations performed on this type of buildings triggered the development of museum typologies that allow changing constantly the space and adapting it to different performances and uses, such as the Pompidou Center in Paris, designed by Richard Rogers and Renzo Piano in 1978. The building was conceived as a place for people, where different ages, interests, and cultures could come together. The center combined different facilities, such as conference halls, cinemas, restaurants, libraries, concert halls, and art galleries. It was designed in order to not constraint the future arrangement of these facilities, but the activities would dictate the form of the building over time. The design of the building was based on a framework of spaces that could be added together or subtracted, opened or divided. All the structural column, service ducts, lifts, and corridors were placed outside of the building next to the facades, opening the internal space and erasing all the obstacles. The access to the activities in the center was made by a system of external public streets hung off the facade of the building. In order to create a building that could be transformed in unpredictable ways, it was designed a kit of parts that could be assembled in different patterns. The Pompidou Center was an exploration of the concepts of adaptability and flexibility, features that are characteristic of industrial structures.51

51 Richard Rogers, *Cities for a Small Planet* (USA: Westview, 1998) p. 76, 77
Rehabilitation and aesthetics

Along with these new rehabilitation approaches and interests the aesthetical aspects involved in such strategies must be considered. Formal dogmas have no place in rehabilitation strategies. The concept "form follows the function" is subverted, and function is adapted to the form, following its characteristics. Rehabilitation strategies have to be constantly designed and readapted. Each building is different, and always requires a survey case by case, analyzing each situation, settling tactics, and designing solutions to be implemented individually. A strategy followed for a specific building or urban area, perhaps has to be readapted to the next situation. It is not a linear implementation, but an irregular and mutable strategy that varies according to diverse factors that are found in each place and building. The "genius loci" concept assumes a significant role in rehabilitation, recovering the importance of history, identity, memories, and invoking the natural and original features of the place as a reference for new interpretations.

In rehabilitation there are no standard aesthetic principles. Aesthetics is defined according to the strategy set up by rehabilitation. It is a consequence that comes after the main guidelines are established. Formal possibilities can go from original reconstruction of parts of an old building to the addition of new structures; from faithful reconstruction based on inventories to conservation of its current condition; or from opposition of old and new to complete remodelation.

Although, there are no formal and aesthetical standards on rehabilitation strategies, there are approaches based on common criteria, which can be grouped in three categories: conservation of the whole old, strata and fragments, and the whole new.

The image of the original: conservation of the whole old

The original form and the reference to the original historical construction is fundamental. This concept is very often associated to rehabilitation strategies to conserve historical monuments, adapting buildings to similar functions to the primitive ones. Cultural functions are normally assigned to buildings that are object of such strategy. Interiors are conserved and opened for public use. For instance, palaces are completely restored or conserved receiving then museum facilities, libraries, and cultural centers.

The conservation of the original features of the space and materials is the main goal of many popular and industrial museums. The building is the attraction itself, keeping as much as possible of its originality. The rule for this type of intervention is "minimum change, maximum silence". It seeks for the conservation of the original, preserving the whole image and shape, valuing the authenticity. For that, rehabilitation defines strategies that perform actions of conservation or integral reconstruction. When buildings are partially destroyed, inventoried data, such as original images and drawings, is used to analyze the missing parts and to perform specific interventions to recover the original image of the building. The interior receives a new adapted function, avoiding as much as
possible the destruction of the original inner space. The exterior, as a skin, is restored, and sometimes improved to a better condition than the original. In these cases, authenticity and truth become secondary in detriment of the image.
The idea of difference: strata and fragments

The concept of whole and homogeneity is refused by this approach. The model of several and distinct layers is accepted. The object (building) is composed of distinct fragments that shape a unity perceived by the observer. Old and new come together in the same object, on fragmented layers, contextualizing different historical moments.

This aesthetics form is based on a strategy that aims to mark a distance that is dissonant, but different through the addition of a new layer to the existing ones. When new constructions are added to the existing building, the added object has a character that clearly distinguishes it from the original object, generating a spatial tension between the distinct layers. There are no first protagonists; old and new have the same relevance and prominence; both are studied with the same intensity and share the excitement of being manipulated.

The rehabilitation of Castelvecchio (1956-1964), in Verona, by Carlo Scarpa, is a reference of this type of aesthetical intervention. Old and new interact mutually to create a single and unitary piece based on their differences, which makes them to become more evident and close to each other as they are opposed. This gesture of mutual interaction was the orientation that prevailed in most of the rehabilitation projects in the 1980s and 1990s.

This differentiation seeks to awake a process of interpretation. Concepts such as collage and superimpositions, based on the placement of an image on top of an already existing image, are used in this process of interpretation and contrasts where the individuality of each element does not coincide with the context.

Within this strategy, materials presume a significant role. They are the elements that make visible the interpretation of the fragments. Materials such as steel, glass, and concrete are frequently used to contrast with natural stone or simple mortar or earth. The use of different and more advanced materials, comparing with the ones of the original building, accentuates even more the artcraft work.
New construction as new material for the whole new

The existing object (building) is taken as an available and variable constructive material, with infinite potential to generate a new whole object. Authenticity is not a priority or an inevitable requirement on this strategy: the original object is vastly interpreted and manipulated. The identity of the original is kept, but its manipulation produces a new object that is completely transformed and an interpretation of the original. Within this approach, hybrid forms frequently come up. The connections between the existing building and the new additions are fluid. Components of the building are totally removed remaining only the main structure, adding a new construction where is needed or a new skin. It is created an amalgam where separations have no place. Old and new are not clearly evident, becoming melted in a new object, where none of the parts is more significant than the other one, but both aim to create a singular and innovative concept of formal language. The final product is a homogenous object, based on a collage of distinct characteristics, which do not intend to clarify the layers of the building, but to gather them in their best.

The higher ranking of rehabilitation: why is rehabilitation hierarchy over other interventions?

There are distinct reasons that justify ranking rehabilitation over other interventions. However, to understand the basic differences between rehabilitation and the other interventions, it is necessary to look at their definition, as well as to understand their goals and the actions that are performed in each of them.

Preservation

Preservation is one of the interventions related to physical actions. It is rooted on preventive intentions and on work associated with arresting deterioration. Preservation is a professional endeavour that seeks to preserve, conserve and protect buildings, objects, landscapes or other artefacts of historic significance.

In 1933, the Athens Charter (CIAM) mentioned preservation asserting that "architecture should be preserved and protected from demolition." Bernard Fielden (1982) defined it as an intervention that deals directly with cultural property, aiming to keep it in its existing condition. He stated that "repair must be carried out when necessary to prevent decay, damage, and destruction caused by water, by chemical agents and by all types of pests and micro-organisms must be stopped in order to preserve the structure." The Appleton Charter (1983) defined preservation as the "intervention that retains the existing form, material, and integrity of the site." Also

---

the Burra Charter (1999) asserted that preservation is the intervention that aims “to maintain the fabric of a place in its existing state and retarding deterioration”. James Douglas, in his book Building Adaptation, defined preservation as an intervention that arrests and retards “the deterioration of building or a monument by using sensitive and sympathetic repair techniques”.

According to these authors, preservation is constantly defined or related with physical actions, such as repair, maintenance, or actions of cleaning and arrest decay in short term routine, in order to control degradation. It can include control of external humidity, temperature and light, as well as measures to prevent fire, arson, theft, and vandalism, and to provide for cleaning and good overall housekeeping.

Conservation

Conservation describes the process through which the material, historical, and design integrity of mankind’s built heritage are prolonged through carefully planned interventions. Conservation aims mainly to preserve as much as possible of the original fabric and make overt what is old and what is new.

Conservation was widely promoted among the Arts-and-Crafts thinkers in England. John Ruskin defended that the essence of monuments was traceable through the marks imprinted by past generations, and together with William Morris, denounced the uselessness of reconstruction and copy. The Athens Charter (ICOM 1931) recommended the reinstate of original fragments and the recognition of all new materials.

Several documents, which treated conservation issues, associated it also to physical actions. For instance, the European Charter of the Architectural Heritage (COE 1975) recommended “integrated conservation” as the “application of sensitive restoration techniques and the correct choice of appropriate functions”. The Burra Charter (1999) considered conservation as “all processes of looking after a place so as to retain its cultural significance”. José Aguiar defined conservation as a “multidisciplinary science, which requires laboratories to support specialised analysis and pathological diagnosis, as well as the expertise awareness on traditional and modern construction processes, technologies, materials, etc.” HEREIN defines conservation as “different types of

58 COE, European charter of the architectural heritage, Congress on The European Architectural Heritage (Amsterdam: Council of Europe, 1975) available at http://www.icomoc.org/docs/euroch_e.html (accessed on 18.01.2010)
60 José Aguiar et al., Guia de Apoio à Reabilitação de Edifícios Habitacionais, vol.1 (Lisboa: LNEC, 2001) p. A.I. - 1
actions required to prolong the life of cultural heritage, and if possible, to clarify the artistic or historical messages therein without the loss of authenticity and meaning". 

Conservation includes actions of maintenance and safeguard, which involve cleaning, arrest or treatment decays, undertaken in a medium and long term basis routine. It also comprises technical and administrative actions, which can be planning, supervising, and repair small scale damages.

Restoration

Restoration is based on physical actions, such as repair large scale damages, consolidation of fissures, and rebuilt small scale gaps in harmony with the building aesthetics. The scope of restoration depends upon the need, and other circumstances, such as the status of the building, and the affordability of the work required. Samuel Johnson defined restoration in his Dictionary of the English Language (1755) as the "full refurbishment to bring back to the original condition, such as cleaning, repainting, and redressing" and simply as "the act of replacing in a former state".

Restoration performances were defended by Viollet-le-Duc who defended the idea that when restoring a monument, one could re-establish it to a reality that might have never existed; Ludovic Vitet defended that one should follow a "process of rigorous and conscientious induction" based on existing fragments (...) there should be no influences from contemporary ideas, nor hypothesis based on caprices. The restorer should be familiar with artistic practices of most periods". Unlike Viollet-le-Duc, John Ruskin considered restoration as a lie, the worst manner of destroying a building. Morris defined restoration as whole sake destruction, a fallacy and impossibility.

Already in the 20th century, the Athens Charter (1931) recommended the respect of all the historical periods and the contribution of all of them to the building, in detriment of the unity of style. Replacements of missing parts should be in harmony with pre-existences but simultaneously evidential to not falsify the artistic or historic evidence. The Nairobi Recommendation (1976) stated that "any restoration work undertaken should be based on scientific principles". Bernard Fielden asserted that the objective of restoration is to "revive the original concept of legibility of the object". José Aguiar stated that restoration has several aims, such as "to recover the image, the original conception, or a historic golden moment of a building, where its architecture possessed totality".

Restoration was mainly associated to actions of physical character. The Appleton Charter (1983) stated "restoration period implies the removal of forms, components, and materials from other periods, and the reconstitution of missing parts, from that specific restoration period". HEREX asserts that restoration involves the application of any necessary treatment in order to allow the survival of a cultural item and to rectify any damage.


57
A restoration performance includes restitution, which involves repairing large scale damages, to consolidate fissures, to rebuild small scale gaps; and reconstitution that aims to consolidate and to rebuild medium scale gaps in harmony with the original building’s aesthetics.

Reconstruction

Reconstruction is an intervention mostly defined by physical actions. Reconstruction reproduces the pre-existence of the building, based on the inventory intervention. HEREIN defines it as “the methods used to reproduce a cultural property which has been destroyed, or is incomplete, utilizing the remains and information which one has.” It regards the entire building, being either substituted by a new existence similar to the pre-existence (rebuilding) or totally different (building new).

The Appleton Charter (1983) described it as “a recreation of vanished or irreversibly deteriorated resources”. The Burra Charter (1999) stated that “reconstruction means returning a place to a known earlier state and is distinguished from restoration by the introduction of a new material into the fabric”.

Reconstruction can involve rebuilding and new construction. Rebuilding includes the actions undertaken to rebuild the building partially or totally based on previous inventories. New construction is the group of actions undertaken to build new buildings reusing the existing urban fabric, infrastructures, services, and so on.

Demolition

Demolition aims to demount a building with relocation, reprocess recycling of forms, components or materials, or simply the destruction of a building, without taking into consideration those aspects.

In 1933 the CIAM participants defended very much new construction within existing urban fabrics. They promoted in the Athens Charter the demolition of “fine architecture”, whenever it would obstruct development. This development could take form by “altering major circulation routes or even shifting central districts”. They recommended the demolition of urban areas surrounding the historic monuments that, once demolished, could give space for development. The post-war period was a period of many demolitions according to Sherban Cantacuzino. New planning policies expelled industrial and commercial activities from the city center, so the buildings that hosted these activities had to be demolished. The Nairobi Recommendation (1976) defended that demolitions

---

should be only considered for those buildings without any historic or architectural value. The Burra Charter (1999) considered demolition unacceptable, recognizing that minor demolitions could be required within other scales of intervention, such as conservation.

Why rehabilitation is hierarchy placed over other interventions?

Foremost, what has to be answered is why rehabilitation should be in a higher ranking regarding the other interventions. In first place, this higher level is not ordinarily assigned to rehabilitation due to inconsequential reasons, such as simple intuitive levels of importance. In this dissertation, rehabilitation is ranked over the other interventions due to three central motives: strategic role, multidisciplinary scope, and the character of the actions performed.

Rehabilitation performs a strategic role designing strategies, which reasonably involves a complex work of organization and coordination in order to set up a solid plan of intervention. The other interventions are purely based on physical actions, which basically aim to perform tasks of maintenance, repairing, arresting deteriorations or restorations. Although they have an irrefutable importance, they do not define strategies of intervention. Preservation, conservation, restoration, reconstruction and demolition are interventions that themselves belong to a main designing strategy, which in this case is defined by rehabilitation. Rehabilitation sets the type of strategic decisions on the entire range of interventions. Therefore, it counts with the rest of interventions as tools to perform actions and tasks in order to achieve its strategic goals. Rehabilitation acts as a moderator; it chooses the correct and most suitable interventions to accomplish its aims.

Rehabilitation has a multidisciplinary scope. This is another reason that elevates it to a higher level of consideration among the other interventions. Its multidisciplinarity involves the management and synchronization of distinct types of information and intervention.
<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Levels and scales of interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fielden</td>
<td>1982</td>
<td>prevention, preservation, restoration, rehabilitation, repopulation, repopulation, reconstruction</td>
</tr>
<tr>
<td>ICOMOS</td>
<td>1985</td>
<td>preservation, period, restoration, rehabilitation, period, repopulation, repopulation, reconstruction</td>
</tr>
<tr>
<td>Hennet</td>
<td>1986</td>
<td>cleaning, maintenance, restoration, rehabilitation, demolition, repopulation, repopulation, reconstruction</td>
</tr>
<tr>
<td>ICOMOS</td>
<td>1992</td>
<td>maintenance, rehabilitation, repair, restoration, repopulation, repopulation, reconstruction, adaptation</td>
</tr>
<tr>
<td>Douglas</td>
<td>2006</td>
<td>preservation, conservation, rehabilitation, renovation, repopulation, repopulation, reconstruction</td>
</tr>
<tr>
<td>Douglas</td>
<td>2006</td>
<td>preservation, conservation, rehabilitation, renovation, repopulation, repopulation, reconstruction</td>
</tr>
<tr>
<td>F. Rouson</td>
<td>2010</td>
<td>preservation, conservation, rehabilitation, renovation, repopulation, repopulation, demolition</td>
</tr>
<tr>
<td>Elizario</td>
<td>2010</td>
<td>(…), preservation, conservation, restoration, reconstruction, demolition, (…), rehabilitation</td>
</tr>
</tbody>
</table>

Table 2 | Degrees, levels and scales of interventions
PART 2

The past of the Slaughterhouses of Madrid

Origin of the Slaughterhouse

The origin of the slaughterhouse as a public institution is uncertain. It is possible to find references to slaughterhouses in the work of Homer, in Greece. In Rome, the Roman Consulate established private and public slaughterhouses administered by independent societies, which also had the role of implementing the pre-established sanitary policies. Private slaughterhouses were assigned to slaughter sheep and cattle, and the public ones were used to slaughter pigs. Paris had its first slaughterhouse built nearby the cathedral of the city after the reorganization of the Butchers Society in 1316. In Madrid, the first reference to public slaughterhouse appears in 1502, when the king asked the relocation of the slaughterhouse due to its nearness to the construction of the new city hospital.

Since the 15th century the Town Hall of Madrid administrated the supply of meat to the population through four public butcheries distributed along the city. Most of those slaughterhouses were placed in the south area of the city in Barrio del Rastro, staying there almost until the 20th century. Next to Barrio del Rastro was located the Puerta de Toledo (Toledo Door), one of the major entrances of cattle, which was kept outside of the city in the meadows of Amaniele, Arganzuela, Corregidor and Prado da Villa. Along with the meat market in Barrio del Rastro other services began to grow up, such as inns to lodge cattle merchants, and other products and goods started to be trade there.

History of public slaughterhouses in Madrid

In the 17th century, when Madrid was chosen by Felipe II to become the capital of the Spanish Empire its population doubled the number. In less than 25 years the population of the city increased from 65'000 to 175'000 inhabitants, between 1606 and 1630. Together with the increase of population came also the increase of food demands, in particular meat. This fact forced the administration of the city to plan and build more slaughterhouses and food markets to supply the population.

Rastro Slaughterhouse

The Rastro slaughterhouse was a building of large dimensions, based on a rectangular plan with two patios organizing and structuring the functions: slaughterhouse, butchery, weight of meat, and market. After some years,
the building was abandoned and private owners purchased it. The closing of this public slaughterhouse and its consequent administration by private owners brought several problems. First, the public service of slaughterhouse became performed exclusively by private corporations. Second, private butchers, who belonged to private corporations, abused from their position in the market to take higher commercial profits. And third, the control of the hygienic conditions in the installations of the slaughterhouse was lost, as well as irregularities on weighting the meat also became out of control. In order to change this situation, the administrative institutions of Madrid took some measures in order to centralize and again the slaughterhouse service: the closing of all the private slaughterhouses throughout the city and the definition of a rigorous schedule for the entrance of animals in the city.

After implementing these measures, private investors attempted once again to purchase the Rastro slaughterhouse and to restart commercial activities. However, the Town Hall of Madrid denied such proposals, assigning to the architect Juan José Sánchez Pescador to develop a rehabilitation project for the building. The project of Pescador recovered the original organization of the building around the patios, keeping the open and ephemeral character of the inner space. The Rastro slaughterhouse remained working until the construction of the slaughterhouses of the Paseo de la Chopera. After that, it was demolished and built in its place an administrative building.

Puerta de Toledo Slaughterhouse

The Puerta de Toledo slaughterhouse was initially installed in the building that previously was occupied by the Hospital of S. Lourenzo, next to the Puerta de Toledo. The adaptation of the building into slaughterhouse was performed by Lorenzo Domingo Joan. It was a simple building, of one floor organized around three patios, entirely assigned to slaughtering, while the shears and barns were located in another plot.

The life of the Puerta de Toledo slaughterhouse was marked by many criticisms about its precarious installations, the lack of money to repair the building, the urgent need of a new slaughterhouse, and by the fact that the building could not answer efficiently the food demands of the population. In order to improve the situation, the Town Hall of Madrid decided to renovate the building and to expand it. The project of Pescador proposed to increase the surface of the building and its division in three distinct slaughterhouses for pigs, sheep and cattle. The complex was divided in several sectors of production according to an internal order. The project proposed the construction of a new square for the entrance of services none related with slaughtering activities. The planned building was compact, symmetrical, and with a complex distribution. It was shaped by several isolated buildings assigned to varied services, which were connected by a system of streets and ramps. The project of Pescador was based in the same the system of independent pavilions separated by streets used in the slaughterhouses of Offenback (Germany), Göteborg (Denmark) and Basileia (Switzerland).
Figure 62 | Rastro slaughterhouse in Topography of the Villa of Madrid, Pedro Teixeira, 1656
Figure 63 | Restoration of the Rastro slaughterhouse, by Juan Sánchez Pescador, 1848
Figure 64 | Puerta de Toledo slaughterhouse, 1655.
Figure 65 | Puerta de Toledo slaughterhouse plan, by Juan Sánchez Pescador, 1861.
Contest for the cattle market in 1899 and the first attempts to build a new slaughterhouse

In 1899, the Town Hall of Madrid promoted a contest for the construction of the new cattle market the meadow of Arganzuela. The architect Joaquín Saldaña won the contest presenting a project of symmetrical composition, based on independent pavilions connected by an internal circuit parallel to the Paseo de la Chopera street. In the main axis of the complex was located the administrative buildings, treasury and canteen. On the right side of the axis was located the supplying market and on its left side the labour market. For this project, Saldaña found the inspiration in the models of the cattle markets of London and Paris. The chosen constructive system was economic and it was used in most of the sanitary, industrial buildings, and schools at that time. The system was basically based on brick walls without plaster, stone base, and concrete foundations; the few decorations were made in ceramic or artificial stones. The project was approved by the Town Hall, but several problems came up with this proposal: low budget for the construction and external interferences that frustrated the construction of the project.

In the end of the 19th century, the population of Madrid reached 800'000 inhabitants. The constant increase of population triggered even more the meat demands of the population and exposed the inefficiency of the slaughterhouses of Rastro s and Puerta de Toledo in providing the amount of meat demanded by the population at that time. Facing this situation, the Town Hall of Madrid realized the urgent need of building in a short time a new cattle market and slaughterhouse. In 1907, the Town Hall of Madrid assigned to the municipal architect Luis Bellido the project of the new cattle market and slaughterhouse in Paseo de la Chopera.
The European experience and the German example

For the new municipal slaughterhouse of Madrid and the cattle market the Town Hall of Madrid presented several requests, which demanded a straight connection between both buildings, easy access for the cattle through the railway, free and public administration to prevent commercial monopoly, construction of spaces to deposit wastes, sanitary inspection, and the abolition of commercial mediators in supplying the meat to the population.

These premises matched perfectly with Bellido’s modern ideas of slaughterhouses. Bellido was interested in the organization and technical advancements introduced in slaughterhouses, knowing many treatises on slaughterhouses, carrying out independent research on the main European slaughterhouses visiting them. From this journey, Bellido concluded that the German model of slaughterhouses was the most advanced and the one that better answered the needs of the program required by the Town Hall of Madrid. Bellido, an expert on Spanish slaughterhouses, knew the disadvantages of such buildings, which in reality exceeded by far the advantages. Spanish slaughterhouses were influenced by the French model, which was mainly characterized by the lack of hygienic conditions, lighting, ventilation, technical organization and specific machinery.

For the project of the new slaughterhouse of Madrid, Bellido followed the German model. He was an enthusiast of the German discipline and the efficiency of their public services. The visits to slaughterhouses in Berlin, Colonia, Breslau, Offenbach, and Leipzig confirmed the benefits of building public slaughterhouses instead of private. The slaughterhouse of Offenbach was the most perfect model found by Bellido. It was organized in two independent parts with a common access to the slaughterhouse and the market; a single building was assigned to administrate the entire complex; a railway terminal facilitated the transport of animals and wastes; docks to receive and to exhibit the cattle were abundant. The slaughterhouse had an aseptic and diaphanous character, preventing as much as possible the contact between workers and the meat. The organization of the inner space of the sheds was adapted to the optimization of production process, taking into consideration the access of animals into the building, the demands of each activity performed in building, ventilation, acoustic isolation, and thermal conditions. Animal wastes were stored in independent pavilions and afterwards put outside of the complex. Some of these modern slaughterhouses had an area of fridges to store meat, cowsheds for sick animals or under quarantine, laboratories of analyses, and sterilization spaces.

Bellido applied these modern ideas in the project of Madrid. He established for the complex the following guidelines: slaughterhouse and cattle market built in the same plot with common administration; easy location for pedestrian, car and railway access; sanitary inspection in all the phases of production (for living animals and meat); existence of an independent sanitary section with washing area, special slaughterhouse and machinery for sterilization of contaminated meat; austere and ample spaces for the cattle market; implementation of modern mechanical instruments to facilitate the work and to be more hygienic; installation of fridge chambers; dead and living animals handled by mechanical devices; space to slaughter and to wash animals; installation of
complementary services to supply meat; and construction of pavilions with the possibility to be expanded in the future.

Figure 67 | Slaughterhouse of Coionia, published by Loverdo, J., Les Abattoirs, 1906
Location and organization of the slaughterhouse and cattle market

The meadow of Arganzuela was chosen to locate the new slaughterhouse due to the recommendation of the Municipal Office of Sanity, which advised that the construction of the new slaughterhouse should be in the south zone of the city, near to the river and the railway. Although the location was positive regarding accesses, was not the best plot to place a building such a slaughterhouse. The plot did not have the adequate hygienic environment since the Manzanares river was not prepared with proper infrastructures to receive the wastes from, as well as the level of the plot did not allow a good drainage. Despite of the disadvantages that the meadow of Arganzuela had and the financial effort needed to elevate the plot to provide it with conditions for drainage, Arganzuela was defined as the place for the construction of the new municipal slaughterhouse and cattle market of Madrid.

With the collaboration of engineers, the problem of the plot slope was solved through the construction of an infrastructure, which allowed the necessary sanitary conditions that the original plot could not offer. The location of the slaughterhouse was then defined, being limited it in the north side by the Paseo de la Chopera, in the south side by the Manzanares river, in the east side by the Vadode Sta.Catalina, and in the west side by the Paseo de Santa María de la Cabeza. The plot had a total area of 165'415 square meters to develop of the entire complex and 35'000 square meters were reserved for future extensions.

In 1909, Bellido’s slaughterhouse project was approved by the Town Hall of Madrid. Bellido called it “a small productive city”. The trapezoidal plot was divided in two sectors to optimize the functions slaughterhouse and cattle market. With this organization, the remaining elements of each sector were disposed according to an internal organization in order to answer better the demands of each one. The organization of the complex emphasized the main internal street, which was the main artery of the complex, relating and organizing the diverse groups of pavilions with the administration building. Above all, Bellido was concerned with the functions of the complex. The main access was performed through the administration building with an entrance through the Paseo de la Chopera. On the right side of the entrance was located a fire station and a security area; on the left side was placed the garage, the toilets and the butchery. In the south area of the complex was placed the fridge chambers, machinery rooms, boilers, and ice factory. In the east zone were located the buildings assigned to slaughtering and the cattle sheds. In the west area was located the railway with docks, as well as a place for wagons disinfection. The cattle market was located contiguously to the slaughterhouse, in the north area of the plot. A wall divided the slaughterhouse from the market area. With this zoning organization, the public of the cattle market could not mix with the slaughterhouse activities.

Figure 68 | Plan of Madrid and surrounding villages in the beginning of XX century. F. Casado. 1900
Figure 69 | Perspective of the new slaughterhouse of Madrid. Arq. Luis Bellido. 1918
Figure 70 | The new slaughterhouse of Madrid. by Luis Bellido. 1918
Nave 8

The nave 8 is located in the southwest area of the slaughterhouse and is composed by two juxtaposed buildings, which are at the same time, independent. The minor one corresponds to the place where animals were butchered and the major building was dedicated to making sausages, the delicatessen works, and tanning.

Building of butchering

This building, where animals were butchered, was connected with the nave of delicatessen and tanning due to functional aspects related with the processes of production. The space where the work was carried out was elevated from the ground in order to facilitate the extraction of the animal wastes from the interior of the building to its exterior through train wagons, which were situated in a lower level. The building had two floors and was acceded through a ramp in L shape. In the center of its first level was the area to butcher the animals and around its perimeter were placed several water basins to wash the meat. The waste was placed into cars in the lower level, called cargadero, and then in the wagon train. At the same level of cargadero, was installed the coal storage and the generators of steam and hot water, and the workers dressing room.

Building of delicatessen and tanning

The building assigned to delicatessen works and tanning was a parallelepiped of 21 m high, with 70 m of length and 33 m of width plan, and a surface of 9400 square meters distributed by four floors. It was accessed from two different levels of the plot: one of the accesses by a ramp and the other one through a vertical core composed by stairs and lifts. Both entrances were communicated with a vestibule, where the areas of administration and services were placed, as well as a passage for trolleys carrying the meat from butchering building to the delicatessen working area. The working spaces were organized according to the rational structure of the building and divided by partition walls of 2 m high in order to allow natural ventilation. Natural light was provided by windows in the longitudinal facades also organized according to the orthogonal structural of the building.

In the upper floor was located the tanning area. This floor was composed of two parts: vestibule, where the animal skins were previously treated, and a larger area where the skins were disposed with a central gallery of access. The system to dry the animal skin was artificial; the ventilation system sucked up the fresh air and warmed it through a battery of steam heaters. The small dimensions of the windows in this floor allowed to maintain the the space warm and humid.

The last floor, a covered terrace, was assigned to the work of fat melting. The roof was flat, covering all the surface of the building.
The basement was used for storage. It was organized as the other floors: a central gallery of access dividing the floor in two areas and each area divided according to the needs. The access to this floor was done through the vertical core of stairs, lifts, and a ramp. It had also a service area with showers for the workers. Natural light was provided by windows in the longitudinal facades.

**Constructive analysis**

According to Bellido, the buildings should transmit their industrial character; decoration should be suppressed and only the functional and necessary elements to operate the building should be built. The utilitarian character of the buildings should be revealed through the simplicity of the materials and the constructive typology, taking into consideration principles of proportion and organization.

In order to achieve such simplicity and functionality in the construction, Bellido used, both in the slaughterhouse and in the cattle market, simple and cheap materials, such as granite, silica stone, and bricks, and tiles.

Regarding the constructive system, Bellido opted for two systems: the traditional system, which was based on bricks and stone to build the partition walls; and for the structure he used an innovative system, barely used in Spain at that moment, based on columns and beams of iron and concrete.

The facades of the buildings were built with a base of granite, brick and silica stone. The corners were performed in brick and granite. It was also used artificial stone and colorful tiles for the few decoration of the walls and lintels.

The pavements in each floor changed according to the work performed there. In the butchering building the slab was covered with a granite pavement. The delicatessen and tanning areas were covered with a ceramic pavement in the main area and cement Portland in the rest of the floor. The interior walls and ceilings were painted in white colour. The frames of the windows were built in brickwork and the frames of the doors in granite. The windows frames were in iron and double glass, with iron blinds and a special mechanism to facilitate their opening and closing in the floor where the delicatessen works and tanning were carried out. The doors were made in solid iron using the *Hayward* system; the exterior doors were made of pine wood and the interior ones in iron.

The roof in the butchering building was built according to the industrial system - flat tiles over wood panels. This roof had three skylights over the railway connection. The roof of the delicatessen works and tanning was a flat concrete roof.
Structural analysis

The structural system of the buildings was mixed, with support walls in the perimeter and columns and beams in the interior. The materials of the structure were also different. In the butchering building was used metallic structure and in the delicatessen and tanning the structure was in totally built in concrete. The foundations were performed in concrete with beams connecting joists of foundation.

In the butchering building, the metallic structure formed an axis of five columns coincident with the central beam of the roof. In the lower level, longitudinal and transversal structural wall supported the building.

In the building of delicatessen works and tanning, the structure was built in concrete and formed a structural grid of columns and beams. The columns were disposed in order to create a central gallery of circulation and distribution of the space.

In the last floor, the flat roof is supported by the west wall and the concrete columns. The walls of the north and south facades were eliminated to get the maximum ventilation in the entire floor since this floor was also used for tanning using natural ventilation. Columns replaced the walls in the facade.

Composition analysis

In the first design proposals, Bellido separated the butchering building and the delicatessen and tanning building in independent blocks. Initially, Bellido projected four isolated pavilions with four levels each, separated by patios and connected by platforms, with the butchering building in the eastern side of the blocks. The buildings were characterized by a character of lightness, whose last floor was open to allow ventilation for the tanning areas and the fat melting. Due to the volatility of the atmospheric conditions of Madrid and to the appearance of new industrial installations for tanning with hot air, Bellido opted to design a single building, gathering all the functions that before were designed separated. Bellido did a fusion between architectural form and function, expressed in the diaphanous spaces, in the homogeneity of the lighting, in the manifestation of the structure and volumes, and in the organization of the inner space. Bellido used also components of the contemporary industrial architecture, taking advantage from its structural expression, the symmetrical facades, and the clear volumes of the buildings.

Figure 71 | Building to butchering animals
Figure 72 | Building of butchering animals, first floor plan, by Bellido, 1907
Figure 73 | Building of delicatessen and tanning
Figure 75 | View of the fat melting area in the upper floor
Nave 9

The nave 9 was located in the southwest area of the complex. This building was assigned to slaughterhouse and the market of birds. Its location in the plot took advantage of the access to the railway, as well as to other accesses of the complex. This building was aligned with nave 8, creating the southwest limit of the slaughterhouse complex. Nave 9 had 94 m of length and 33.6 m of width in plan with a surface of 6400 square meters. The building had two floors with an internal access of stairs and a flat roof. The building was a perfect parallelepiped. The inner space of the building was mainly characterized by its ephemeral character and by the strong presence of the structure of the building, visible in all the extension of the floors. Natural light is provided by windows in the longitudinal facades and by five skylights on the roof.

Constructive analysis

The nave 9 reflected, as the others buildings of the slaughterhouse, the tendency of Bellido for architecture of functional character, in which the structure of the building was pragmatically assumed and the economical construction and its formal expression was added to the final product.

The constructive techniques and the materials used were the same ones applied in the other buildings of the complex: granite, silica stone, and brick. The constructive typology used two systems: the traditional craft, based in the techniques of construction with brick and stone, and the industrial one, using concrete in the structure. The windows frames were made in iron with two kinds of windows: a minor one, divided in three parts with rotating wings and mechanical systems of opening, and another one, of larger dimensions, with two doorway wings.

Structural analysis

The structure of the nave 9 shows a finer knowledge and improvement in the construction with concrete compared with of the rest of the construction of the entire slaughterhouse complex. This improvement occurred due to the fact that Bellido, in the final moment of the construction of the slaughterhouse, worked with the architect Javier Ferrero, who was an expert on this technique, using it in previous works.

The structure of the nave 9 is based in a support wall in the perimeter of the building and in the interior an orthogonal grid of columns and beams of concrete, which support floors and the flat roof.
Composition analysis

The slaughterhouse and market of birds was part of a second typology of buildings within the entire complex. It was essentially characterized by its flat roof and concrete structure. The functional demands were similar to the other buildings: ephemeral spaces where industrial activities could be easily performed, services for the workers, and possibility to expand the building according to future demands by repeating the structural module.

The organization of the building shaped its form. The market of birds needed to be separated from the slaughterhouse. The small size of the animals (birds) requested only two floors with 4 m high. The staircase, in the western zone of the building, composed the core of internal accesses between floors and at the same time was located close by the secondary exit of the complex. The patios were grouped in the central zone of the nave allowing the internal area of the building to have light and ventilation.

The use of the patios to bring light into the building was fundamental for the internal organization of the space. The subtle way that Bellido treated the patios, without opaque elements that could stop the view of the entire nave or the circulation inside of it, gave to the space interesting architectural qualities.
Rehabilitation of Matadero Madrid

Premises and Aims

Matadero Madrid is located in one of the most significant industrial parks of the beginning of the 20th century in Madrid. The rehabilitation of Matadero intends to adapt the existing buildings into new functions to receive a wide range of cultural and educational activities related with artistic formation, creative processes and dialog between arts. It intends to reflect on the contemporary socio and cultural context, and to support the constructive processes of the present and future culture. Matadero will be a laboratory for experimentation that seeks to boost multidisciplinary creations in all forms, focusing research, production, training and diffusion. Scenic and visual arts, design, music, dance, architecture, urban design, landscape, fashion design, literature, and cinema are the artistic areas of action of Matadero, which will be promoted by the Governmental Department of Arts of the Town Hall of Madrid, private and public entities. Matadero is in contact with other artistic international centers, such as Le 104 in Paris, Les Abbatoirs de Toulouse, Lieu Unique de Nantes, Mattadoio de Roma, and Delfina Foundation in London.

In order to support creators and to promote cultural and educational activities Matadero has established 10 objectives:
1. To encourage the creation, through economical help, as well as to give to creators the necessary resources;
2. To disseminate the creations of artists developing their work in Madrid;
3. To become a meeting center for cultural experts, artists and general public;
4. To promote the production of new artistic works of local, national and international artists;
5. To contextualize the artistic creation in time and to link it with other fields of public life.
6. To encourage reflection on the constructive processes of culture;
7. To arouse the cultural interest among the citizens of Madrid and to generate new public for arts;
8. To be the headquarters of the main cultural events in Madrid, as well as of other international cities that are linked to contemporary creations;
9. To establish a network of national and international partners, which have similar spaces for artistic development in order to collaborate in common projects;
10. To promote the organization of activities between all the institutions integrating the project Matadero Madrid.

The municipality of Madrid has chosen naves 8 and 9 of the former slaughterhouse of Madrid Matadero to receive the headquarters of Intermediae, the center of resources for artistic production; the social area of Matadero, the administrative area of the entire complex. Nave 9 will be rehabilitated and adapted to receive the center of contemporary architecture, and the design center.

Figure 78 | Views of Matadero Madrid
Municipal requirements for naves 8 and 9

The municipality of Madrid has established a strategy to guide the rehabilitation of both buildings, which were also followed in this master project.

1- The design must value the internal space of the buildings. The industrial character of the naves should be maintained while creating the necessary conditions to install the headquarters of several institutions. The original shape of the buildings should be preserved, as well as the structural and spatial organization of the naves.

2- Platforms of connection between both buildings should not take the relevance of the existing buildings and must be able to be disassembled. Additions of juxtaposed or isolated elements to the existing buildings should have small / medium dimensions in order to advertise the institutions hosted in the naves. In the roof of nave 9, it is admitted the necessary constructions to prepare the terrace for public use.

3- Exterior spaces should be generators of life, to receive public activities. The entrance of Matadero will be located in Legazpi Square and an underground parking must be planned in the free space between naves 8 and 9 and the Vado de Santa Catalina Avenue.

4- In order to solve the specific demands of the functional program the solutions should be flexible, reversible, with an industrial character, allowing any future change of functions.

Program of technical needs

Nave 8

Nave 8A has a surface of 9170 square meters distributed in four floors. In this building will be located the headquarters of Intermediae (5000 sqm), the center of resources for artistic production (2000 sqm), and the social area of Matadero (2000 sqm).

Foundation Intermediae (5000 sqm)

Intermediae promotes the experimentation, reflection and intervention of contemporary creation, as well as the development of collective, open, and permeable projects with public participation. Intermediae plans and develops several courses, workshops, conferences, auditions, exhibitions, concerts, performances, projections, and collective projects.

- Foyer 310 sqm (welcoming space, information, exhibition, and performances of artistic interventions of big format)
- Exhibition room 1100 sqm - Dock
- Storage 150 sqm (direct access to docks)
- Workshops 340 sqm (carpentry, electronics, extraction of gases, and washing of materials)
- Lecture rooms 250 sqm (5 rooms of 50 sqm/ each)
- Social area 900 sqm (information of the existing resources, space of documentation, reading and artistic interventions)
- Offices 400 sqm (12 desks, 2 meeting rooms for 10 people, and 1 private office)
- Private and public toilets, technical rooms and storage

**Center of resources for artistic production (2000 sqm)**

The Center of resources for artistic production will offer in *Matadero* specialized services for professionals within the contemporary art sector, supporting the work and the education of creators through projects, planning workshops, exchanges, and assisting with technological equipment and other individual or collective facilities of low cost use.

- Management and organization area 120 sqm office for 6 people, meetings room, and warehouse)
- Meeting and advisory area 150 sqm (reception, meeting room, and projection room)
- Documentation center 50 sqm (research room, reading, and consulting with 12 desks)
- Workshops 740 sqm - Edition and post-production area 350 sqm (multimedia room for 20 people, video room for 10 people, digital photographic room for 10 people, sound studio for 3 persons, and 2 photographic laboratories 25 sqm/each)
- Printing area 60 sqm (room for scan and plotter)
- Stage 250 sqm (space for photography and video activities, 5 to 6m high, direct access to the exterior, and 2 dressing rooms with toilets and showers)
- Private and public toilets, technical rooms, and storage rooms

**Social area of *Matadero* (2000 sqm)**

The social area of *Matadero* will be a meeting space with multifunctional character placed in the last floor of nave 8A, in which will be developed several activities and events.
Nave 8B

**Administration area of Matadero (425 sqm)**

The nave 8B will receive the administration and general coordination of Matadero.

- Control and information space - Space for administration and management (2 private offices, open work zone for 4 people, and meeting room)
- Multifunctional room
- Storage room 60 sqm
- Private and public toilets, technical rooms, and storage

Nave 9

Nave 9 has a surface of 6400 sqm and it will receive the headquarters of the center of contemporary architecture and the design center.

**Center of contemporary architecture (3200 sqm)**

The center of contemporary architecture is a place to promote architecture, reflection, creation and ideas. It intends to promote emergent architectural ideas and experimentation, education and the discovery in a close relationship with the public.

- Rooms for lectures and conferences (free seats)
- Storage room for chairs, tables, and materials used in workshops, lectures and conferences
- Exhibition rooms
- Workshops rooms - Directors office (1 office for the director of the center, 1 free office, common area of work for 5 people, waiting room, and one meeting room for 20 people)
- Administration and management area (common zone of work for 4 / 5 people and one meeting room for 10 people)
- Public information
- Reception and control
- Architectural shop with storage
- Private and public toilets, technical rooms, and storage
Center of promotion of design (3200 sqm)

The design center will be a space to disseminate and to promote contemporary design in its distinct forms: graphic, industrial, web, advertising, editorial, illustration, etc. The center will offer a program of communication, creativity, ecology, and new industrial materials. It intends to establish contacts between designers, companies, institutions, students, and citizens through workshops, seminars, conferences, exhibitions, and documentation.

- Foyer (reception, control, and information)
- Service area (book shop with one office and one storage, resting and social area)
- Educational area (one classroom of 100 sqm, two classrooms of 60 sqm, and computer area with 8 desks)
- Exhibition room
- Storage 60 sqm
- Research and documentation area- Administration and management area (two offices, common area of working for 5 people, one meeting room for 20 people, and one room for visits)
- Private and public toilets, technical rooms, and storage

Terrace

The terrace will be an exterior space on the top of nave 9, where it will be possible to observe the Manzanares River and at the same time a space were events can be performed. It should have covered areas with adaptable and flexible structures according to the needs. This space should be independent from the other existing spaces in the same building.

Location

Matadero is located in Arganzuela district in Madrid. Arganzuela has a surface of 6,55 km² and a population of 146'833 inhabitants with a density of 22'417 inhabitants/km². The district comprises seven neighborhoods: Imperial, Acacias, Chopera, Legazpi, Delicias, Palos de la Frontera, and Atocha. Matadero is placed in Chopera neighborhood, which has a surface of 0,57 km² with a population of 22'200 inhabitants.66

Figure 79 | Arganzuela district, Madrid
Figure 80 | Chopera neighborhood, Arganzuela district, Madrid
Figure 81 | Matadero in Chopera neighborhood, Madrid

66 Available at [http://mapsol.net](http://mapsol.net) (accessed on 26.01.2010)
Hidrography

*Manzanares* River is the main water source of Madrid. The river enters in the city through the area of *Monte del Pardo* in the north side of the city next to *Ciudad Universitaria*, then flowing to the area of *Casa de Campo*, where the *Meaques* bank converges. The river shapes a natural border to several districts of Madrid, converging to the *Jarama* River, in the district of *Getafe*.

Figure 82 | Water lines of Madrid district
Climate

Madrid has Mediterranean climate. Winters are cold with frequent frosts and sporadically snow. Summers are hot and dry, with high temperatures, occasionally over 35°C. The precipitation is scarce, but well distributed during the whole year. The annual mean maximum temperature is 19.5 °C and the minimum is 9.5 °C. January is the coldest month of the year, with temperatures between 2-10 °C, and July is the warmest month, with temperatures between 18-32°C. The average of rain collected per year is 435 mm.

Mediterranean climate

The Mediterranean Climate is characteristic from the southern regions of Europe, near by the Mediterranean Sea. It is hot and dry in summer, unstable and humid in winter. The rain season lasts for 2 to 4 months in winter, being rare precipitation in the rest of the year. The regions that have Mediterranean Climate, which includes the south of France, Italy, Greece, Portugal and Spain, have temperatures above 18°C. Winds from the Sahara Desert make the climate more warm and dry. In regions located near by the Mediterranean Sea, the summers less dry and temperatures are mild.
Transports

Madrid has a vast and complex transport network organized to facilitate the traffic within the city. Metro, trains and buses are the main important public transports in Madrid. The metro is one of the biggest in expansion in the world, currently serving three million users, being the second biggest one in Europe, after the metro of London. The urban train complements the metro network. It is connected to more than 20 metro stations and it is spread throughout Madrid, arriving to the majority of the city districts. Parallel to the urban train, the city is connected to the national network of trains, which have their main stations in Atocha and Chamartin. Lately, Madrid has incorporated in its transport network the fast train AVE, which aims to connect all the capitals of the Spanish provinces.

The district of Arganzuela, particularly the area where Matadero is located, is served by this network of transports having several bus stops and metro stations in its surroundings what makes it a well connected zone with the city center.

Figure 85-87 | Metro, bus, and AVE (fast train) network, Madrid
Green areas

Madrid is one of the European cities with more green areas within the urban territory. Madrid has twelve major parks spread throughout the entire city being the Parque del Retiro and Casa de Campo two of the most remarkable green structures of the city. In the district of Arganzuela, where Matadero is placed, there are two significant parks: Parque de la Arganzuela and Parque Tierno Gaván.

Parque de la Arganzuela was created in 1969 and enlarged in the 1990's with the terrains of the old city Slaughterhouse, has undergone new remodelation with the underground burying of the M-30 highway. It is near Puerta de Toledo, on the banks of the Manzanares River. The neighborhood of Arganzuela, which used to be an industrial area, is today a residential one close to Madrid’s center. In the park, there is a greenhouse that keeps some 9000 tropical species.

Parque Tierno Gaván is one of the biggest in the city having 45 ha of surface. Its construction started in 1986 in Arganzuela between the former train station of Delicias and the M-30 highway. The vegetation of the park is mainly composed by coniferous trees, bushes, aromatic plants, as well as a large area of greenery. The park has several sport facilities, pedestrian paths, a museum, and an auditorium where cultural and educational activities are performed.

Figure 8.8 | Map of main green areas in Madrid
Design
The rehabilitation of Matadero is based on the research presented on this dissertation, regarding the role of rehabilitation as an intervention of setting up strategies at different scales and on coordinating other interventions in order to achieve its aims and strategies. Regarding this understanding, the rehabilitation project of Matadero comprises interventions at urban, building, and landscape level.

Rehabilitation goals

Urban planning
Matadero is located within the urban fabric of Madrid, in an area surrounded by apartment buildings with commercial facilities at the level of the street, high traffic density, the Manzanares River, and two green zones, which are the Parque de la Arganzuela and the Parque Tierno Galván. Whereas the area has already a strong urban character, Matadero can become the main urban reference of this area, offering a remarkable identity to the place.

In order to transform Matadero in an urban reference, this rehabilitation project aims to reinforce and improve the access system in the location, to connect the new district areas to the existing ones, maintaining the same features; to improve the quality of the public space in terms of furniture, light, infrastructures, and waste management; to create new green areas within Matadero complex; and to connect the new added green structure to the existing city's green network.

Building
Matadero was an important industrial complex of Madrid in the beginning of the 20th century. Nowadays, the buildings are not used any more as slaughterhouse or for other activities related to it. The slaughterhouse was built according to specific functional and working demands, which gave to the buildings a very particular character. The buildings have passed through several transformations along the years, fact that caused them physical damages and consequent deterioration. Despite their physical condition, the buildings are interesting industrial structures with relevant weight in the industrial and social history of the city. Facing these facts, the goals for their rehabilitation aim to introduce new functions and facilities in order to keep the buildings in use and to extend their lifespan; to create a new character; to recover their memory, activities, events and actors related with them; to trigger their spatial qualities in order to activate distinct sensorial experiences in the users; and to update them to contemporary standards of comfort based on ecological and sustainable principles.
Rehabilitation strategy

Urban planning

To achieve the urban goals previously mentioned, the rehabilitation strategy set up is mostly based on specific interventions. These strategic interventions aim to improve the quality of the surrounding urban space and to trigger the transformation of Matadero into an urban reference. The strategy involves the following measures:

- The reinforcement of the main street accesses to the complex;
- The creation of service accessibilities in order to facilitate the entrance of vehicles to supply the institutions hosted in the buildings;
- A clear definition of internal corridors of circulation within the complex, connected with the external public pedestrian accesses, to create a continuation of the private space of Matadero with the urban public space;
- The widening of the surrounding pedestrian accesses to invite the use of such accesses by people instead of cars;
- The replacement of former facilities, such as bus stops and kiosks, ordinary placed in the urban space, by new ones placed according to a plan;
- The creation of more parking areas in order to clean the pedestrian accesses from illegal and chaotic parking;
- The creation of a plan for the lighting of Matadero complex to emphasize the access, making it attractive and exciting to walk through;
- The replacement of the current urban furniture by new one more suitable to contemporary demands;
- The introduction of sustainable devices for energy production and water collection in the public space;
- The introduction of small green areas into the public space, such as road infrastructures and side walking paths;
- The creation of multifunctional platforms in order to promote distinct types of free cultural performances in the urban space;
- The recovering of relevant memories associated to the place and the previous activities carried out there.
- The introduction of new green areas connected with the existing city’s green network and the construction of a new pedestrian area next to Manzanares River, taking advantage of the natural qualities of an area that is totally abandoned.
Figure 89 | Reinforcement of the main accesses to the building
Figure 90 | Creation of service accesses
Figure 91 | Introduction of hierarchic corridors of circulation inside of the complex
Figure 92 | Creation of multifunctional platforms for cultural activities
Figure 93 | Walking access new proposal
Figure 94 | Pedestrian accesses: Widening of the sidewalks in order to create a promenade
Figure 95 | Facilities: Replacement of old facilities by new ones and better located
Figure 96 | Parking: Implementation of more parking areas
Figure 97 | Lighting: Replacement of old lamps by new ones capable of producing its own energy
Figure 98 | Green areas: Introduction of more green areas in the public space
Figure 99 | Urban furniture: Replacement of old urban furniture by new design
Figure 100 | Renewable energies: Introduction of devices for energy production and water collection using existing infrastructures
Figure 101 | Recovery of memories through symboolical elements
Figure 102 | Introduction of the new green areas into the existing city's green net
Figure 103 | Multifunctional platforms
Figure 104 | Introduction of renewable energy resources
Building

The rehabilitation strategy regarding the building is mainly based on two premises: the recovery of important memories associated to the past and the clear differentiation of distinct elements, in order to create contradictions and trigger the spatial qualities of the buildings. In relation to these premises, the strategy for the buildings intends:

- To respect the life trajectory and the memories of the buildings until today. The purpose is not to give prominence to any exclusive moment, but to look at all of them with the same relevance and potential;
- To create a public space into the building, achieving an open building for people;
- To mark a clear contrast between the former elements of the building and the new added ones;
- To recover the former internal circuits, allowing the current users to experiment the same moving paths done by the workers of the slaughterhouse, as well as the meat produced there;
- To overlap time and memory layers;
- To create fluid and configurable spaces capable to be rearranged according to the needs or future demands;
- To update the building to contemporary standards based on sustainable and ecological principles.
The new *Matadero*

**Changing the character of the building**

(...firstly, we do not want to see what happens there and secondly, its activities turn death into a productive and neutral event...)\(^7\)

The sustainable killing of animals to feed man and its symbolical meaning expressed in primitive ceremonies and rituals have evolved from its original cave, where such ceremonies toward the animal took place, to the modern slaughterhouse. The noble and remarkable act of killing an animal becomes a simple ordinary and banal action of killing, rational, functional, industrial, mechanical, and aseptic with the single purpose of feeding man's desire for meat. The symbolical and religious performances associated to hunting and consequent killing of the animal were lost with the modern slaughterhouse.

Along with the slaughterhouse, and associated to the consciousness of the trivial action of killing, came also the feeling of shame. The brutal and cruel violence practiced against the animal in the slaughterhouse led to the closing of the slaughterhouse and its activities of killing from the nearness of the community. The awareness of such cruelty and violence triggered the development of the first experiences of combining all the activities related with slaughtering in one single enclosed area. In this way it was avoided the spread throughout the city -such as the case of Paris and Madrid- of slaughtering activities, mixed with other activities performed within the urban space, in places without the right hygienic conditions also. In this way, it was possible to hide the killing from the new sensible community, which wanted to consume the meat but not to see the brutality associated to its supply.

The slaughterhouse took the place of the primitive cave, where animal worship ceremonies preceded the hunting; a space of hard access, where only the brave and strong hunters were admitted to receive the power to dominate the strong and wild spirit of nature and where the shamans, mediators between man and spirits, enthusiastically and passionately kept the mystery of those rituals. The slaughterhouse also became a place exclusively accessible to the brave men, the ones capable to live and experiment the extreme brutality of killing thousands of animals every day. The slaughterhouse was idealized as an efficient killing machine, which replaces the religious ceremonies by the hygienic rituals, substitutes the sacrament of a controlled and sustainable hunting by the unrestrained butchery to satisfy the voracious desire of a new consuming civilization, displacing the killing of the animal from the natural environment into the interior of space built by man. The closed slaughterhouse, where the carnage happens, also hides the performance of courage and braveness of the hunters from the sight.

---

of the tribe or community, transforming the relation between men and animal into an insignificant ritual of trivial production and consume - a formal ritual without any meaning.

The slaughterhouse was a building with special features that generated a particular character through the years. Intimately related with killing and bloody activities, Matadero was a building of violence and massive production, serving the food demands of the city, but detached from the population. It was a closed building, only opened for its workers and traders, assigned to the single function of supplying the meat demands of an entire community. The rehabilitation of Matadero intends to provide a new character to the buildings, different from its previous one. The new character of Matadero is based in the intimate contact with the population, open to the community, a place where killing and violent activities are replaced by activities of creation, interaction, dynamism, culture, and education. From a bloody building, in the past, where red was the predominant colour, the new Matadero becomes a building of life and creation where the green replaces the red.
Building 20th century
Slaughterhouse
Killing
Blood
Slaughtering
Closed building
Monofunctional
Partial space occupation
Mono accessed
Repulsive building
Absence of vegetation
Mono speach
Introver
Non-sustainable

Building 21st century
Cultural center
Reviving
Creation
Communication / Interaction
Open building
Multifunctional
Total space occupation
Multi-accessed
Attractive building
Presence of vegetation
Dialog building
Extrovert
Sustainable
The new life

The new character of Matadero is achieved by the introduction of a new symbolical element that represents life in opposition to death: plants / vegetation. Plants are able to invade any place or space if they find the basic conditions of growth - light, humidity, and ground. Plants have the capability to purify the air through a photosynthesis process, to produce their own energy, to search for water and nutrients in order to survive, to distribute such nutrients through its entire body, to defend from predators and natural elements, to expand or grow, and to adapt to new conditions or places when moved from one place to another.

In Matadero, a new layer of vegetation is introduced over the existing layers of the buildings. Like a plant that invades any type of space, this new layer also invades the inner space of the buildings. It has the capability to expand, to readapt according to the needs and conditions, and to be reconfigured in the place or be removed and assembled in another place.

The features of the new layer are the following:
- Removable partitions;
- Mechanical jointing of materials (to facilitate future use);
- Flexible design (multifunctional space; can be used for several functions);
- Natural ventilation (implementation of intelligent system that responds to different human needs of climate and interacts with the environmental changes);
- Natural light (different types of opacity and textures);
- Space organization (fluid and multifunctional);
- Installations system (a system of installations runs inside of the layer skin, supplying with energy, water, telecommunications, lighting and sewage the whole building);
- Vertical gardens (vegetation from street level, spiral upwards as a continuous ecosystem facilitating species migration, engendering a more diverse ecosystem and greater stability in order to facilitate ambient cooling);
- Water self-sufficiency (by rainwater collection and grey water reuse);
- Water purification (rainwater collection system comprises of “roof-catchment-pan and layers of scallops, located at the building’s facade to catch rain water running off its sides. Water flows through gravity. The filtered water accumulates in a basement storage-tank, and is pumped to the upper level storage tank for reuse - plant irrigation and toilet flushing);
- Photosynthesis (capability of purifying the air).

Figure 112 | New layer; internal walls
Figure 113-116 | Views of the external aspect of the new layer
Energy capability of producing energy (self-sustainable)

Respiration: capability of searching and capturing water and nutrients in order to survive (root system, defense mechanisms, mechanisms of self-defense in order to defend from predators or natural elements: wind, water, etc.)

Distribution / feeding capability of distributing nutrients through a system of macro arteries to the all body plant expansion / growth capability of expanding (reproduction) and growing (maturity)

Readaptation: capability of readapting to natural elements or places (moving situations)

NATURAL VENTILATION: implementation of intelligent system the responses to different human needs interacting with the environmental changes / features

NATURAL LIGHT: different types of opacity, textures

SPACE ORGANIZATION

INSTALLATIONS SYSTEM
A system of all type of installations runs inside of the SKIN / SURFACE layer, supplying the whole building in energy, telecommunications, lighting, water and sewage (capability of carbon feeding)

ACCESS GREEN RAMP (built in organic concrete, allowing the growth of vegetation)

INTERACTIVE SCREENS
- sensors implemented in the layer SKIN / SURFACE
- constantly showing information, movies, photos, music, programs, cultural advertising, etc.

WATER PURIFICATION
The water-collection system comprises of roof-catchment-pan and layers of 'scallops'

VERTICAL LANDSCAPE
Vegetation from street-level spirals upwards as a continuous ecosystem facilitating species migration, engendering a more diverse ecosystem...
Overlapping of time and memory layers

**Time** - The building is used as a container and its interior remains in its current conditions. The layer time is expressed in the walls of the building as a big screen that envelopes the content. The scenario intends to create the effect of memory flashes. Whenever the visitors move in the building, find tension, surprise, mystery, stimulating to create or imagine their own stories about the building.

**Memory** - The building was strongly related with savage activities (slaughtering, bleeding, and killing) physical work, movement, repletion, etc. The rehabilitation design intends to recover part of this memory through the recreation of the circuits made by people and animals in order to develop those activities. A circuit through the whole building, connecting the floors (horizontally and vertically), makes the visitor move as the animals or the workers did in their daily tasks. The main longitudinal access is marked through a ramp that connects the building in its verticality. The transversal accesses recover the direction in which tasks and works were developed. The new functions are also disposed in a transversal direction, recovering the same structure of organization as in the past, although with new functions and meanings.
Circuits

The internal circuits of the new Matadero are recovered, simulating the same circuits previously done by the workers and the animals in the past. Visitors follow the same circuit made by the animals or the meat during the entire process of killing and production in the horizontal and vertical direction. The circuits run through the buildings as an invisible guide, showing the visitor the distinct and overlapped layers of the space.

A new connection to the bird’s slaughterhouse is also added to the circuit. With it, becomes possible to join both buildings and their functional program. Along the circuit, different sensorial experiences can be experimented by the users. Like a screen, the building shows to the visitor different moments of its life. Some parts of it are restored; others are new and based on interpretations, or inspired by the original functions of the building.

The circuit ends in the Manzanares River, where animal waste, fat, and feathers were damped in the past. Now the river also becomes the end of the journey for the visitors. After crossing the two buildings, the journey ends in the water, a symbol of life, not anymore a place for waste and garbage.
Rehabilitation interventions

In order to achieve the goals proposed for the buildings according to the rehabilitation project, several strategic interventions are planned:

- Preservation: inventory of actions
  Inventory of documents and data.

- Conservation: safeguard of actions
  Reparation of medium scale damages, treatment of decay, performance of small scale. Ex: facades.

- Restoration: restitution and reconstitution actions
  Reparation of large scale damages, consolidation of fissures, rebuilding of medium scale lacunas, in harmony with the building aesthetics. Ex: structure, facades.

- Reconstruction: rebuilding and building new actions
  Based on the inventory results, the construction of new buildings, reusing the existing urban fabrics, infrastructures, services, etc. Ex: adjacent building to nave 8, internal additions, ramps.

- Demolition: reduce actions
  Demount with relocation, reprocess, recycle forms, components, materials, etc. Ex: demolished slabs.
Reconstruction, rebuilding and restitution and reconstitution based on the inventory of documents and data.

Reconstruction of medium scale damages, repair of small scale damages and treatment of decay, performance of conservation and safeguard of actions.

Conservation: reinstatement of large scale damages, repair of medium scale damages, in harmony with the building aesthetics. Restoration: restitution and reconstitution of large scale damages, repairs and reconstruction of medium scale damages, in harmony with the building aesthetics.
Along this dissertation, rehabilitation was presented as an architectural and urban intervention that goes far beyond simple physical actions of construction or adaptation of spaces into new functions or upgrading of buildings to contemporary demands or requests. Much more than that, rehabilitation is an intervention based on setting up strategies that embraces a wide range of different aspects and complexity. Such complexity emphasizes one of the aspects of rehabilitation stated on this dissertation - its multidisciplinary character. This aspect of rehabilitation highlights its role as a strategist of interventions. Under rehabilitation, strategies are set up in order to achieve goals, using other interventions as tools. Actions of conservation, restoration or reconstruction among others, can be requested by rehabilitation as part of its general intervention in a single architectural space or in a collective and urban area according to what is intended.

This dissertation also focused on the social role of rehabilitation. As previously stated, rehabilitation is more than constructive or technological issues. The city, and consequently the buildings that shape it, are the spaces where people live, work, move, have entertainment. In this case, rehabilitation assumes a prominent role in creating bonds between objects and people; by recovering the qualities or adding new ones to such objects, and bringing them back to the users. SESC Pompéia, in São Paulo, analyzed in this dissertation, is a remarkable example of rehabilitation's social role on bonding people to places and buildings that were almost erased and forgotten from the collective imaginary. Rehabilitation is also able to create new life, assigning to individual buildings or urban areas a new character, which can trigger the potential of the space. This work also considered the ability of rehabilitation to invoke dreams and fantasy through the construction of spaces that can trigger sensorial experiences as well as to encourage the creation of poetic images linked to the memories of the users.

This dissertation also considers rehabilitation in a higher ranking regarding the other interventions. The reason is mainly associated to the fact that rehabilitation is an intervention of setting up strategies and plans, which makes it different from the other interventions. These other interventions are mostly defined as physical actions, while rehabilitation uses the combinations of interventions as tools to perform and achieve its plans.

This dissertation illustrates how rehabilitation has been performed for centuries: from adaptation of buildings into new functions, passing through the recycling and reuse of materials or massive destructions of single buildings and urban areas, to the ecological and subversive transformation of buildings.

Nowadays, rehabilitation has assumed a decisive role regarding the upgrading of the built environment - cities and buildings. The increasing importance of rehabilitation is deeply associated to the opening of its scope of intervention. If new buildings have to respond to the constant evolution of society, rehabilitation has to consider how to adapt this vast number of buildings. As previously mentioned on this work, history has shown that buildings can be modernized and upgraded to respond to new needs. By creating a dialogue between old and
new, rehabilitation has succeeded in bringing buildings to contemporary standards. Another factor of its success is the fact that rehabilitation embraced, in its range of interventions, different typologies of buildings. Buildings have been rehabilitated in order to become spaces for display, transformed into museums, art galleries, and cultural centers; or to become buildings for subversive experimentations such as factories adapted to housing or to leisure facilities; or buildings for exploitation, where the space is transformed in order to receive distinct activities that can generate economical profits.

Regarding aesthetics and the final aspect of buildings, rehabilitation has suffered moments of strict cultural and rigid patterns, but also moments of flexibility, opened to experimentations. Rehabilitation has allowed the replacement of the established concept of clear differentiation between old and new for more alike amalgams of objects, where all the layers of the building come together to create a one single and unique object.

Finally, the rehabilitation of the former slaughterhouse of Madrid into a cultural center was based in the ideas developed along this dissertation. The rehabilitation design intends to show the different aspects approached in the thesis. It shows the power of rehabilitation, transforming a building, as well as an urban area, taking in account preexisting events, memories, and actors. All of them relate coherently creating a new character to the building and its surroundings. Besides, the rehabilitation project generates a remarkable object bonded to people. The design also integrates ecological and sustainable principles, which are one of the most important aspects of rehabilitation strategies.

In all its singularity and complexity this work intended to present rehabilitation as a relevant intervention strategy, performed since buildings and cities exist, with an inherent power to create singular objects bonded to people.
BIBLIOGRAPHY


- Pereira Roders, Re-architecture - lifespan rehabilitation of built heritage, book I (Eindhoven: Bouwestenen Publicatieburo, 2007)


- José Aguiar et al., Guião de Apoio à Reabilitação de Edifícios Habitacionais, vol. 1 (Lisboa: LNEC, 2001)

- Luiz Trigueiros et al., *SESC - Pompéia Factory Lina Bo Bardi*, (Lisbon: Editorial Blau, 1996)


- Le Corbusier (Charles Edouard Jeanneret-Gris), *The Radiant City: Elements of a Doctrine of Urbanism To Be Used as the Basis of Our Machine-Age Civilization* (London: Faber and Faber, 1967)


- Richard Rogers, *Cities for a Small Planet* (USA: Westview, 1998)


- Bruno Muntari, *Fantasia* (Lisbon: Edições 70, 2007)


- Rik van Stiphout et al., *Eindhoven - City of Light* (Eindhoven: Gemeente Eindhoven, 2007)


ACKNOWLEDGEMENTS

Every work has its mentors, inspirers, and supporters.

To the mentors. I am greatly thankful to Dr. Peter Erkelens for his help and support during the last three years, in the most varied aspects, and especially for his interest in my work and knowledge, kindly shared with me. Dr. Jacob Voorthuis for his constant enthusiasm transmitted along so many meetings and discussions, for his vastly knowledge and references that helped me to develop this work accurately. I am deeply grateful to Professor Miguel Santiago for his constant and kind attention in guiding me in the development of this master despite the physical distance between us, as well as for his knowledge and experience shared with me in the last six years. I am also very grateful to the Technische Universiteit Eindhoven, which received me and gave me the opportunity to develop this master program at the Architectural Department. Also, I could not forget my previous university, Instituto Superior Manuel Teixeira Gomes, in Portugal, which opened the door, three years ago, for me to come to the Netherlands and run an internship at TU/e, leading me later to the master program.

To the inspirers. I would like to mention the ones that have been always an inspiration for my work: my family, for their tireless, optimistic, and enthusiastic character. To them I am infinitely thankful for their unconditional support.

To the supporters. The latest three years have been quite busy with so many activities, projects, writings, ideas, and of course this master. None of these would have been possible without the support and help of good friends. My very good friends Alex and Massimo have helped me in so many adventures and misfortunes; I am very grateful for their inestimable time in helping me with wild and stubborn computers, for their friendship, affection, and companionship. There are no words that could explain all my gratitude to my dear friend Rui Barriga, for his uncountable hours of on-line discussions, his interest, support, and belief in my work. I am also very thankful to my good friend Marivel, a person who supported me through her kindness, happiness, enthusiasm, and optimism. Finally, one person requires further mention. The unconditional and faithful support, as well as the inspiration of Ana Moya, her insight, constructive criticism, discussion, companionship, friendship, humor, kindness, affection, and effort. These words can not tell all my gratitude for all her support. From the bottom of my heart I am deeply grateful to all of you.