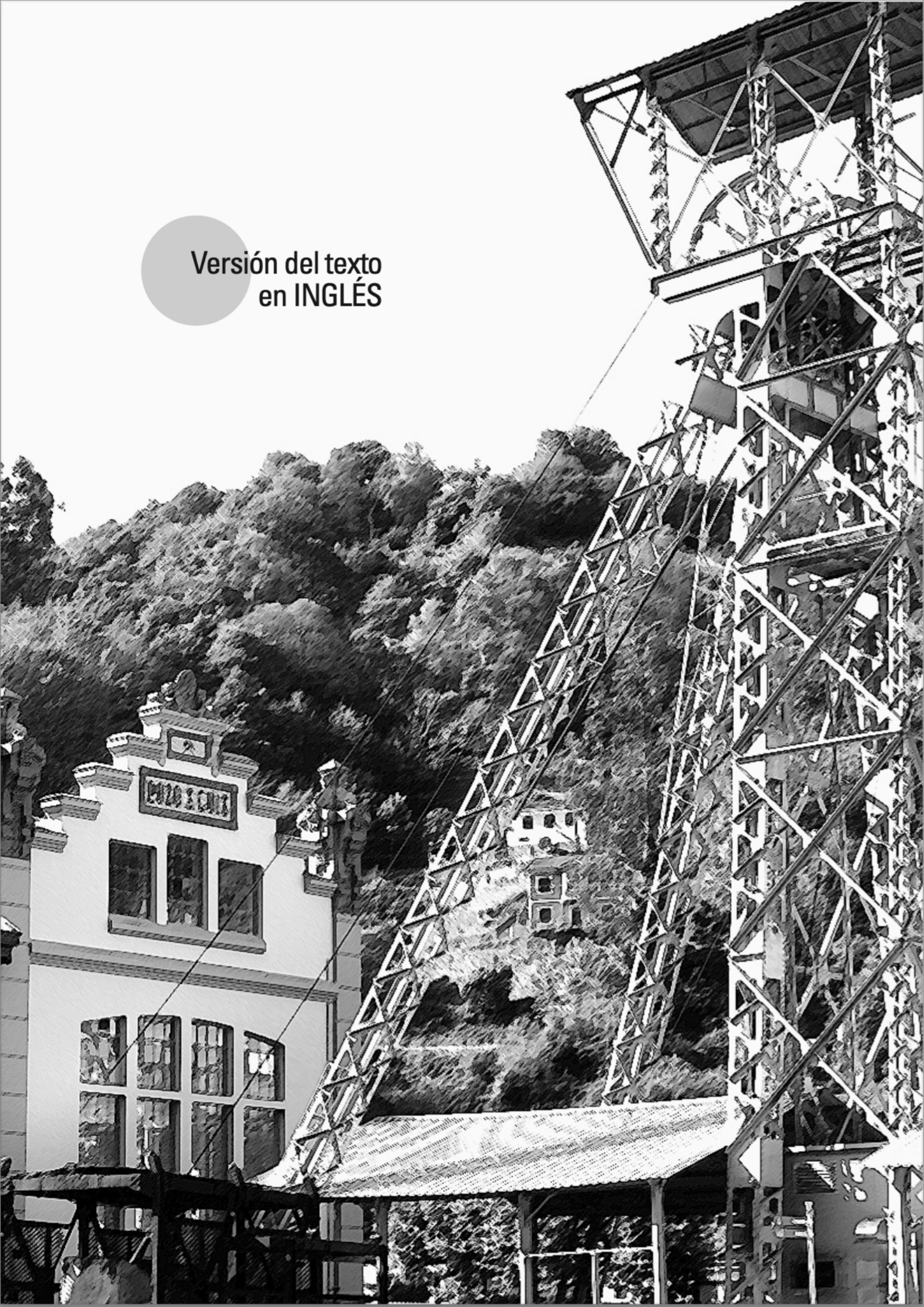


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Theorization and management of industrial heritage in Spain: contradictions and achievements of a current topic

MARÍA PILAR BIEL IBÁÑEZ

Translation by Valerie Magar

Abstract: *This article focuses on Françoise Choay's reflections on industrial heritage and, based on these and on her definition of a historical monument, it proposes an analysis of the reception of the concept of industrial monuments in Spain. Choay's reflections were written in the 1980s, the time when industrial archaeology studies began. The text reviews the most important scientific and bibliographical events that took place at that time and contributed to the establishment of the discipline. These first studies created a theoretical corpus, still in use today, which has served as a basis for the subsequent definition of industrial heritage. It also reflects on the development of the process of valuation of industrial assets through their protection (heritage laws) and their conservation (restoration-reuse).*

Keywords: *Spain, industrial archaeology, industrial heritage, industrial architecture.*

Introduction: Françoise Choay as a starting point

Relics of a lost world, engulfed by time and technology, the edifices of the pre-industrial era became, in Riegl's terminology, the objects of a cult. Finally, they were invested with an imprecise new memorial role - silently analogous to that of the original monument. Taking root in the destabilized soil of a society in the throes of industrialization, they seem to recall to its members the glory of an imperiled genius (Choay, 2001: 139).

More than 100 years after Alois Riegl noted this reality, we can affirm that today's society, post-industrial and immersed in the 4.0 industrial revolution (Bianchi, 2020), lives a similar situation regarding the buildings of the industrial era. These transformed European society at the end of the 18th century and during the following two centuries, and gave rise to what Françoise Choay calls "the second cultural revolution" (Choay, 2021).

On February 27, 2021, the digital newspaper *elDiario.es* published the news of the suspension of the demolition of the gas factory in Oviedo, because Oviedo "cannot afford to continue destroying its heritage"¹. On July 29, 2020, another newspaper, *Público*, headlined, "A washing machine factory 'recycled' as an avant-garde cultural center"²; while on March

¹ Original quotation: "no puede permitirse seguir destruyendo su patrimonio."

² Original quotation: "Una fábrica de lavadoras 'reciclada' como vanguardista centro cultural."

13, 2021 *elDiario.es* again reported the dismantling of the centenary Metro depot in Cuatro Caminos (Madrid) in order to build hundreds of houses on the site, even though the judicial process to prevent its demolition has not concluded. This same presence of industrial heritage is also detected in the university environment through the presentation of end-of-degree and master's degree projects or in the defense of doctoral theses. There is no doubt that industrial heritage, especially that which is linked to the factory, is part of the concept of historical heritage that Spanish society currently manages. If we review the heritage laws of the autonomous communities, we can see how many of them protect this type of heritage while others specifically include it in their titles. At the same time, it is becoming increasingly common to find articles in specialized journals on intervention operations in abandoned factories for their reuse as an efficient instrument for their conservation. And, finally, the role of society that denounces, on the street and in social networks, the mistreatment or indiscriminate demolition of industrial buildings is becoming increasingly important.

This accumulation of facts shows that the integration of industrial heritage into the concept of cultural heritage has undoubtedly taken place. But it also leads us to question the reason for some absolute statements about it. Choay herself includes several of these maxims. On the one hand, the capacity of these buildings "some of which belong to the history of technology" (Choay, 2001: 149) for reuse because their "solid and sober construction and easy maintenance, are easily adaptable to contemporary norms of utilization, and lend themselves to multiple uses, both public and private" (Choay, 2001: 149). The author also points out the impossibility of preserving an industrial landscape since it "may be rendered illusory by its very dimensions, in an era of urbanization and territorial reconfiguration," (Choay, 2001: 150) although she recognizes that they have "an affective memory value for those whose territory and horizon they constituted for generations" (Choay, 2001: 149) in addition to possessing the value of documents "of a particular phase of industrial civilization" (Choay, 2001: 149). She applies this same reflection to the case of agricultural landscapes and concludes by stating that "No precedents exist to guide us in such cases of obsolescence on a territorial scale" (Choay, 2007: 150). From the time Choay wrote this text (1992) to the present, much work has been done to solve this problem. The path that has been found is cultural tourism. The reuse of industrial spaces (both buildings and territories) to generate tourist resources around their history, has become one of the most successful strategies (for example the action in the Ruhr mining basin in the federal state of North Rhine-Westphalia) that is being replicated in all European countries. Even, as Françoise Choay denounces, at the cost of subjecting this heritage to a process of trivialization so characteristic of the era of the culture industry and the imposition of economic value over others.

Beyond all these considerations, the reality of industrial heritage is the result of a long process that began in countries such as Great Britain, France and Italy and which undergoes a transformation similar to the rest of the historical heritage. This article arises from the questions that Choay's texts on the monument and the historical monument raise, but applied to the case of industrial remains. It is a question of reflecting on the processes undergone by these resources until they reached the status quo of heritage, on who have been the agents in charge of selecting, activating and legitimizing these resources, from what interests and points of view this process has been carried out and whether, in this path of reinterpretation and adoption of new values, the voice of some has been imposed over that of others.

This review focuses on Spain and the early years (1980s) of the reception of European historiography, a time that coincides with the process of industrial transformation, as well as with the abandonment of large industrial spaces in urban environments and the publication of the first monographs focused on the remains of industry.

The context of the process of industrial waste heritagization: deindustrialization and neoliberalism

In the 1980s, Spain underwent a major industrial reconversion that lasted throughout the 1980s and 1990s. In these 20 years, a large part of the heavy industry (steel and naval) of this country was dismantled, located in Asturias (Hunosa and Ensidesa), the estuary of Bilbao (Altos Hornos de Vizcaya), Sagunto (Altos Hornos del Mediterráneo), El Ferrol (shipyards), Cartagena (shipyards) or Cadiz (shipyard), was dismantled. This situation was completed with the need to restructure other sectors such as the primary sector (dairy, vine, and olive trees) as a consequence of Spain's entry into the European Economic Community (1986) and the textile sector located in Catalonia and affected by the competition of Asian producers. Others, such as the mining sector, managed to delay this process thanks to the strong workers' mobilization. It is, undoubtedly, an industrial transformation that is mainly concentrated on the Cantabrian coast, the workers' belt of Madrid, metropolitan Barcelona and the Basque Country, although other enclaves located in the south and center of Spain were also affected. This deindustrialization resulted in the weight loss of the sectors that played a leading role in the industrial deployment of the 19th century and Franco's Spain and their replacement by a new model based, among other things, on specialization in the tertiary sector. This process had already begun earlier but was strengthened after these years (Fernández García, 1988; Velasco and Plaza, 2003; Marín Arce, 2007).

The most visible consequence of these changes in the economic model of Spanish cities is the appearance of large industrial vacuums which, in a significant number of cases, involves the indiscriminate demolition of the industrial landscape and its replacement by urban development actions combining cultural facilities, shopping centers and the creation of new neighborhoods (for example the Bilbao Ría2000 project, the Niemeyer Center in the Avilés estuary or the various projects in Barcelona such as the Forum of Cultures).

Simultaneously, the discipline in charge of the study of the remains of early industrialization arrived in the academic field: industrial archaeology. A process of institutionalization of these assets began with the convening of congresses and the publication of books on their object of study. The first declarations of protection were published under the Spanish Cultural Heritage Law (1985) and the successive laws passed by the autonomous communities. Finally, the first museums dedicated to industry were opened (Museum of Science and Technology of Catalonia, 1984) and the first interventions for the conservation of industrial architecture were undertaken (for example, the rehabilitation for a cultural center and Hydraulic Museum of the Mills of the Segura River, in Murcia, 1984-1988; or the Cátex factory (Can Felipa) for leisure activities, in Barcelona, 1984-1989).

From industrial archaeology to industrial heritage

The reception of international currents through congresses and journals

In 1982, the interest in industrial assets began to take off. In that year the I Jornadas sobre la protección y revalorización del patrimonio industrial was convened under the auspices of the Basque Government and the Generalitat de Catalunya, two of the communities most deeply involved in this process of transformation. It was the first gathering of all those interested in the research on this legacy, a field of study that hardly boasted of any publications. Its organization involved people of great relevance to the development of the discipline such as Eusebi Casanelles, Rafael Aracil or Manuel González Portilla, among others. The meeting was divided into five major sections covering research, intervention on industrial buildings, the relationship of industrial heritage with the environment, scientific and technical museology and the teaching of technology and history. It was therefore a holistic approach that addressed the main debates surrounding industrial archaeology at that time.



FIGURE 1. MUSEU DE LA CIÈNCIA I DE LA TÈCNICA DE CATALUNYA. TERRASA (BARCELONA). BEFORE: VAPOR AYMERICH, AMAT I JOVER. LLUÍS MUNCUNIL I PARELLADA, 1907-1908. Intervention by Joan Margarit and Carles Buixadé, 1984. *Image: Carlos Colás.*



FIGURE 2. CENTRE CIVIC CAN FELIPA. BARCELONA. BEFORE: FÀBRICA TEXTIL CATEX, BENET PUIG I ROSSINYOL, 1856. Intervention by Josep Lluís Mateo i Martínez, 1984-1991. *Image: Carlos Colás.*

Of all of them, we are particularly interested in collecting those discussions linked to the theoretical issues presented in Rafael Aracil's paper. In it, Aracil, in addition to making a brief review of the development of the discipline in Europe, tackled the problem of its limits and contents starting from the studies of Kenneth Hudson and Angus Buchanan (later called the British current). From the chronological point of view, he proposed the need to establish different time limits to those of the British, in order to adapt them to the differences of the Spanish industrialization process, specifically those of Catalonia and the Basque Country. Thus, he pointed out as a starting point the passage from hydraulic energy to steam and extended his interest to nuclear energy indicating that his starting point were the three classic sectors of industrialization: textile, mining and metallurgy, besides contemplating the agrarian context and the transformations that the new sources of energy implanted in it. He addressed the issue of the sources of information with which the discipline must work. He affirmed that industrial archaeology can "liberate history from the slavery of written sources"³ (Aracil, 1984: 21) by using the physical remains as a basis, although he later recognized the need to combine documents and the physical remains. And he concluded by indicating that the factory must be understood as a work center with a high immaterial content, so a multidisciplinary approach is necessary for its understanding. For this reason, he believed that it was better to speak of labor history rather than industrial archeology. So that, in addition to investigating the material remains, cultural history or/and the history of mentalities should be approached: "The monument or the museum (in a more general way) should become, of course, a reminder of the past, but also a research laboratory and, above all, a training center"⁴ (Aracil, 1984: 23).

A few years later, in 1985, the journal *Debats*, published by the Institució Alfons El Magnànim, published a monograph on industrial archaeology. Its articles were signed by international researchers such as: D. Newell (industrial archaeology and human sciences), A. Negri (History of art and culture of industry), C. Bertelli (Production of the image and technical modes), O. Selvafolta (the architectural space of work), L. Bisi (the new currents of industrial museography); and D. Cannadine (a historical review of the British industrial revolution). For the first time, reflections were published in Spanish on the need to enrich the discipline of industrial archaeology with the contribution of other disciplines such as human sciences or art history; at the same time, the need to approach the culture of industry and its musealization through new museum models was raised. D. Newell in his text denounced that:

industrial archaeologists tend to focus their attention on the single case, on the most successful example or the one with the most obvious aesthetic and structural attributes [...]. Consequently, research on activities or industrial sites that represent an intermediate stage of technical development or that refer to unsuccessful and unsuccessful attempts without continuation is scarce [...] (Newell, 1985: 41).

He concluded his reflection by pointing out the need to combine historical-scientific and anthropological research "in other words, factories and mines should be considered as workplaces and not only as architectural objects or technical equipment"⁶ (Newell, 1985: 47).

³ Original quotation: "liberar a la historia de la esclavitud de las fuentes escritas."

⁴ Original quotation: "El monumento o el museo (de forma más general) debe convertirse en, por supuesto, un recuerdo del pasado, pero también en un laboratorio de investigación y, sobre todo, en un centro de formación."

⁵ Original quotation: "los arqueólogos industriales tienden a focalizar la atención sobre el caso único, sobre el ejemplo de mayor éxito o con atribuciones estéticas y estructurales más evidentes [...]. En consecuencia, escasean las investigaciones sobre las actividades o sobre los lugares industriales que representan un estado intermedio del desarrollo técnico o que se refieren a intentos no logrados y sin continuación."

⁶ Original quotation: "es decir las fábricas y las minas deben ser consideradas como lugares de trabajo y no sólo como objetos arquitectónicos o equipos técnicos."

In short, this monograph proposed to leave the prominent role of the industrial monument in the background (according to the British tradition: singular, with historical and aesthetic values) in favor of the culture of work approached from all its complexity and with an interdisciplinary character. In this way, the consideration of these material remains as part of the cultural heritage and, therefore, the need for their protection and conservation was outlined.

Subsequently, in 1989, the journal *Canelobre*, published by the Juan Gil-Albert Institute of Culture under the Provincial Council of Alicante, returned to the subject with a more territorial vision. This publication came to light in 1984 with the vocation of being a space for reflection on the culture of Alicante and in its 16th issue dedicated its dossier to issues related to the industrial heritage of the province. However, the monograph started with a first article by Salvador Forner dedicated to archeology and industrial heritage. In this text, Forner introduced two novelties: defending industrial heritage as part of urban heritage and the need to awaken social interest in these assets in the management processes. He analyzed the proposals of delimitation and definition of industrial archaeology of the various schools such as the British, Italian or French. He reflected on the diachronic or synchronic character of the term industrial and the relationship established between industrial heritage and industrial archaeology. Finally, he opted for the proposal of A. Carandini and, like him, defended that the field of study of industrial archaeology is the material culture of capitalist societies. In such a way that, in addition to addressing the study of the processes of production, distribution and consumption, it must delve into the social and historical conditions in which they develop. He advocated breaking with its origins linked to the history of science and technology and concluded:

But the study of material remains in themselves, without giving them an anthropological dimension, would be a sterile intellectual exercise. It is only through the significant relationships between different phenomena that industrial archaeology, with its great potential for interdisciplinary knowledge, can contribute to an analysis of the facts and an explanation of them which, because of the characteristics of its informative material –stripped of the symbolic elements of written sources – will serve to reveal to us in a more objective way the conditions of work and existence in industrial societies⁷ (Forner, 1985: 24).

All these reflections were completed with those contained in the *Enciclopedia Valenciana de arqueología industrial* (1995) directed by Manuel Cerdá and Mario García Bonafé and coordinated by Paloma Berrocal. It is a magnum opus consisting of around 5000 entries written by a team of 76 specialists from different fields of knowledge. It is, therefore, an encyclopedic dictionary ordered alphabetically following the model of the British *Blackwell Encyclopedia of industrial archaeology* (1993). Its entries span from the 18th century to 1970 and deal with a wide variety of topics. There are those linked to the various industrial sectors, energy sources, industrial architecture, public works or the different branches of engineering as well as the methodology of industrial archaeology and the chronicle of the most important Valencian localities in the process of industrialization of the community.

⁷ Original quotation: "Pero el estudio de los restos materiales en sí mismos, sin dar a éstos una dimensión antropológica, sería un ejercicio intelectual estéril. Solamente a través de las relaciones significativas entre distintos fenómenos es como podrá la arqueología industrial, con su gran potencial de conocimiento interdisciplinar, contribuir a un análisis de los hechos y a una explicación de los mismos que, por las características de su material informativo –despojada de los elementos simbólicos de las fuentes escritas–, servirá para revelarnos de manera más objetiva las condiciones de trabajo y de existencia en las sociedades industriales."

The one dedicated to industrial archaeology, signed by the coordinators of the work, gathered the positions of the British literature and insisted on the convenience of combining the study of the rest of the material with the documentary, pointing out that “documentary evidence [...] is seen as complementary to the physical evidence, never as a substitute”⁸ (Cerdá y García, 1995: 94). In addition, they entered fully into the relationship established between archaeology and history, stressing the situation in which industrial archaeology appears: not from within the discipline itself, to expand its chronological limits; but as a consequence of the defense of the remains of industry produced from other fields of knowledge and especially from society. Therefore, they insisted on the confusion between Industrial Heritage and Industrial Archaeology. They also denounced its absence in the academy and, therefore, the lack of a method of its own that singled it out. They defended the chronological limits imposed by the period of capitalist industry and pointed out that their object of study is the industrial monument but also “all the material vestiges [...] not by themselves, but as manifestations of a specific society born with industrialization and determined by new and different social relations”⁹ (Cerdá and García, 1995: 95). They also introduced the need to study the industrial landscape, although they recognized that more attention was still paid to the artifact than to the context. And they denounced: “much of the industrial archaeology that has been practiced has had more to do with the history of architecture, technology or even economic history than with a true archaeology of the industrial-capitalist period”¹⁰ (Cerdá and García, 1995: 96).



FIGURE 3. ECOMUSEUM OF THE VALLEY OF SAMUÑO. POZO DE SAN LUIS, CIAÑO (LANGREO, ASTURIAS). BEFORE: IT WAS ACTIVE FROM 1928-1969. Definitive closure in 2002. Listed as a site of Cultural interest in 2013. *Image: Carlos Colás.*

⁸ Original quotation: “las evidencias documentales [...] las contempla como complementarias de las evidencias físicas, nunca como sustitutivas.”

⁹ Original quotation: “todos los vestigios materiales [...] no por ellos mismos, sino en tanto que manifestaciones de una sociedad concreta nacida con la industrialización y determinada por unas nuevas y diferentes relaciones sociales.”

¹⁰ Original quotation: “mucho de la arqueología industrial que se ha practicado ha tenido más que ver con la historia de la arquitectura, de la técnica o incluso de la historia económica que no con una verdadera arqueología del periodo industrial-capitalista.”

The same authors, Manuel Cerdá and Mario García Bonafé, wrote the term industrial heritage. They began by indicating that there was no accepted definition and denounced that “there is a tendency to reduce it almost exclusively to the most relevant constructions that are more visible, because of their age or their architectural and even aesthetic characteristics”¹¹ (Cerdá y García, 1995: 485). Thus, they considered that “a monumentalist vision of industrial heritage in which reality is replaced by an image of the past, fragmentary and diced”¹² (Cerdá y García, 1995: 485) continued to predominate. The reasons they argued in favor of this monumentalist vision are varied. On the one hand, the ambiguity of the legislation, the lack of social consideration and the confusion generated by the origin of the discipline more focused on safeguarding the remains of industry than on building a disciplinary corpus; to this they added the legacy of the 19th century where the supremacy of the monument prevailed over other manifestations more linked to the popular and thus highlighting the values linked to beauty, uniqueness and antiquity. “Getting rid of the monumentalist character ascribed to industrial heritage is, therefore, a difficult but necessary and urgent task, given the speed with which in our society the vestiges of the most recent past disappear”¹³ (Cerdá y García, 1995: 486).

In short, this theoretical corpus is led by names such as Salvador Forner, Rafael Aracil, Manuel Cerdá, Mario García Bonafé, José Miguel Santacreu to which we should add others such as Eusebi Casanelles or Miguel Ángel Álvarez Areces (Vergara, 2009-2010; Cano, 2007). This set of studies is based mainly on the works of leading British and Italian scholars such as R.A. Buchanan, K. Hudson, M.M. Rix, F. Borsi, or A. Carandini, among others. In this sense, the *Enciclopedia valenciana* is the one that provided the most extensive international bibliography where, in addition to those mentioned above, there was room for scholars of this discipline from France (such as M. Daumas). Nevertheless, the influence of British thought is evident both in the search for a definition and in the attempt to establish chronological limits and sources of information. Thus, in view of these texts, it can be concluded that these researchers started from the consideration of the industrial monument understood as the factory. And this was valued as an architectural and technical object with a singular character. However, they tried to expand this object of study to the non-relevant remains in order to move towards a history of the culture of work (following the Italian influence) where, based on these elements, their anthropological values are deepened. To this end, they were committed to a diversification of the sources and, without renouncing the prominence of the physical remains above the others, they recognized the value of documentary sources for the understanding of the industrial heritage. Finally, they defended the independence of industrial archaeology from other disciplines such as the history of science and technology, from where the studies of the former took off. They believed that this was the only way to move toward interdisciplinary studies where each of them analyzed a profile of the same phenomenon. On the other hand, the chronological limits were not resolved. For, although there seemed to be a consensus on the prominence of the remains of capitalist societies, they did not adequately define this issue. In the same way that they did not address the definition and limits of industrial heritage.

Monographs on the three Basque provinces: an initial overview

A pioneer group of publications dedicated to bringing together this influence was the one composed by the three monographs focused on each of the provinces of the Basque Country.

¹¹ Original quotation: “se tiende a reducirlo casi exclusivamente a las construcciones más relevantes que por su antigüedad o por sus características arquitectónicas e incluso estéticas, resultan más visibles.”

¹² Original quotation: “una visión monumentalista del patrimonio industrial en la que la realidad es sustituida por una imagen del pasado, fragmentaria y troceada.”

¹³ Original quotation: “Deshacerse del carácter monumentalista que se le adscribe al patrimonio industrial es, pues, una tarea difícil pero necesaria y urgente, dada la rapidez con que en nuestra sociedad desaparecen los vestigios del pasado más reciente.”

The aforementioned process of deindustrialization had a great impact on this autonomous community. Throughout the 1980s, the Basque provinces, but especially the city of Bilbao, witnessed the razing of their main industrial areas. As a result, the conservation of the industrial heritage became a growing concern within various social groups. The result of this concern was, among others, the birth of the *Asociación Vasca de Patrimonio Industrial y de la Obra Pública*¹⁴ in 1989, with the aim of promoting the knowledge, dissemination and safeguarding of the Basque industrial legacy. Around the same time, the Department of Culture of the Basque Government and the Deiker Institute of the University of Deusto initiated an ambitious project of research and dissemination of this heritage in the process of dismantling, whose results were reflected in three monographic publications: *Arqueología industrial en Bizkaia* (1988), *Arqueología industrial en Guipúzcoa* (1990) and *Arqueología industrial en Álava* (1992).

The first of these, dedicated to Bizkaia and signed by Maite Ibáñez, Alberto Santana and Marta Zabala, is divided into seven chapters where, after a historical introduction and the conceptualization of the industrial landscape, architectural types and their conservation are addressed. In an introductory chapter, the authors reflected on the conceptual framework in which the research had moved: industrial archaeology, and they assumed the definitions already discussed and raised in the first studies on this subject in Spain, leaning towards the British vision in which the industrial has a diachronic character. Once again, they emphasized the need to avoid a "collection of antiquarian items"¹⁵ and call for "deepening the knowledge of the historical structures of a territory"¹⁶ (Ibáñez, Santana y Zabala, 1988: 6), pointing out the importance of broadening knowledge towards the artificial landscape, in this particular case the mining landscape. They concluded by indicating that "this approach is particularly well suited to the case of Biscay, where the absence of singular monuments of great relevance is more than made up for by one of the most densely populated industrial sites"¹⁷ (Ibáñez, Santana y Zabala, 1988: 6). Next, they denounced what they called "façadism" as a study criterion for assessing the importance of industrial heritage. That is, the preeminence of architectural and aesthetic values over others such as historical or technological. They insisted that in order to appreciate the importance of an industrial infrastructure its utilitarian and pragmatic character were more important, since this character was part of its idiosyncrasy. And they concluded by indicating that

*This same utilitarian attitude, which only recognizes the use or exchange value of productive instruments, has been the greatest obstacle to their preservation: the factory, reduced to its identity as a machine, is only of interest as long as it yields dividends; when it becomes outdated, the laws of the market demand its technological reconversion or its immediate closure*¹⁸ (Ibáñez, Santana y Zabala, 1988: 8).

There is no doubt that in these sentences, the authors included two of the most used arguments to determine what an industrial monument was or to justify the demolition of the factory: the importance of the architectural values. Without taking into account that precisely, its formal beauty or its constructive originality are not the criteria with which they were erected in their

¹⁴ Basque Association of Industrial Heritage and Public Works.

¹⁵ Original quotation: "colección de piezas de anticuario."

¹⁶ Original quotation: "profundizar en el conocimiento de las estructuras históricas de un territorio."

¹⁷ Original quotation: "este planteamiento se ajusta especialmente bien al caso vizcaíno, en el que la ausencia de monumentos singulares de gran relevancia se suple sobradamente con uno de los cuadros industriales de mayor densidad."

¹⁸ Original quotation: "Esta misma actitud utilitaria, que solo reconoce valor de uso o de intercambio de los instrumentos productivos, ha sido el mayor obstáculo para su conservación: la fábrica, reducida a su identidad de máquina solo tiene interés mientras rinda dividendos; cuando se desfasa, las leyes del mercado exigen su reconversión tecnológica o su cierre inmediato."

historical moment; but those that we apply from a different mentality influenced by the vision imposed both from the aestheticist preeminence in the architecture of 19th-century tradition and from the modern movement where the beauty of the form is prioritized, although this was a consequence of a functional reflection.



FIGURE 4. AZKUNA ZENTROAZ. BILBAO. BEFORE: ALHÓNDIGA, RICARDO BASTIDA, 1905-1909. Intervention by Philippe Starck, 2001-2010. *Image: Carlos Colás.*

The volumes dedicated to Guipúzcoa and Álava are signed by Maite Ibáñez, María José Torrecilla and Marta Zabala. After a chapter on historical context and another focused on industrial architecture, the authors proceeded to a sectoral analysis of the industrial heritage of each province, maintaining the diachronic criterion and their theoretical positioning already explained in the first volume. After the methodological justification, the authors reflected on the industrial heritage understood as the set of material vestiges of the industrial process. They emphasized that its knowledge helped in the understanding of the past and its preservation, insisting on the two dimensions it presents: the cultural and the historical. They concluded their reflections by defending reuse and rehabilitation as strategies for safeguarding these elements, although without going into their definition or the criteria for intervening in these buildings under the umbrella of these concepts.

Thus, in these pioneering volumes, the idea of the industrial monument linked to architecture and focused almost globally on the aesthetic values was once again reflected. In addition to recognizing in industrial archaeology the discipline of study that aims at its analysis and conservation. However, these texts, based on fieldwork and historical and technical analysis, tried to break with this vision, which they considered reductionist, and they incorporated, together with the most architecturally outstanding examples, others of lesser aesthetic relevance but of singular historical importance.

Industrial architecture: the embodiment of the idea of the industrial monument

Parallel to the reflection on industrial archaeology, another collection of studies focused on industrial architecture was published in the same decade. In Catalonia, two appeared in

1984: those of José Ángel Sanz and Josep Ginez and J. Corredor Matheos and Josep María Montaner. In Seville (1986) that of Juan García Gil and Luis Penalver and in the 1990s, Diego Peris (1995) published one on architecture for industry in Castilla-La Mancha. All of them circumscribed their object of study to the architecture that arose as a consequence of the industrial revolution, although all of them lacked a conceptual specification of their object of analysis. This reflection on what is industrial architecture, what are its sources and what is the methodology of study, were analyzed in two publications by Julián Sobrino Simal (1989; 1996) and Inmaculada Aguilar (1998). Sobrino's text was the first attempt to outline a general historical panorama in Spain and the second was the only text to date that dealt with the problems of this architectural typology.

Julián Sobrino published *Arquitectura industrial en España (1830-1990)* in 1989, and later expanded it in a new edition in 1996. Already in the introduction he stated that industrial architecture should be treated as something unique within the industrial heritage; and he recognized its technological, architectural, sociological and landscape values as well as a high symbolic load linked to the idea of progress. For all these reasons, he concluded that it is the best document available to understand the industrial process. In the chapter focused on the methodology for its study, where he included the sources, inventories and catalogs, he reflected on its periodization. He noted that the stylistic division based on aesthetic criteria was not adequate because, "although there is a will for style in it, this does not arise from a direct link with an aesthetic ascription but from the very functionality and adaptation of the building to the productive needs"¹⁹ (Sobrino, 1996: 61). Therefore, the chronological division he proposed arises from the combination of the internal logic of economic development and the classification by productive sectors. In this way, and following this criterion, he divided the historical evolution of this architecture into major historical periods: 1830-1888 (The architecture of the first industrial revolution. The industrial city); 1888-1936 (The architecture of the second industrial revolution. The great industry); and 1939-1994 (The architecture of the third industrial revolution. The future factory). To which he added an initial chapter on pre-industrial architecture and regal manufactures and factories. In short, he opted for an evolutionary-sectorial scheme already used in other works such as that of Corredor Matheos and Montaner or those of Ibañez, Torrecilla and Zabala.

In the section dedicated to its definition, he describes it as: "they are the spaces of industrial production that serve to house under the same roof the work of men and machines. This work is inspired by two fundamental principles: the discipline of a given production system and the use of efficient technologies"²⁰ (Sobrino, 1996: 68) without analyzing other disciplinary or methodological aspects. He emphasized that this architectural typology does not have an important treatment within the histories of architecture since "with few exceptions, buildings created for industry are considered excluded from what is judged with unique and sublime criteria of beauty"²¹ (Sobrino, 1996: 70) and concluded that "beauty is not its first objective and, if we must be honest, the industries and the industrial landscape of a few years ago are the greatest examples of ugliness created by man"²² (Sobrino, 1996: 71).

¹⁹ Original quotation: "aunque en ella se encuentra una voluntad de estilo, éste no surge de una vinculación directa con una adscripción estética sino a partir de la propia funcionalidad y adaptación del edificio a las necesidades productivas."

²⁰ Original quotation: "son los espacios de la producción industrial que sirven para alojar bajo un mismo techo el trabajo de hombres y máquinas. Este trabajo se inspira en dos principios fundamentales: la disciplina de un sistema dado de producción y el empleo de tecnologías eficaces."

²¹ Original quotation: "salvo excepción los edificios creados para la industria se consideran excluidos de lo que se juzga con criterios únicos y sublimes de lo bello."

²² Original quotation: "la belleza no es su primer objetivo y, si hemos de ser sinceros, las industrias y el paisaje industrial de hace escasos años constituyen los mayores ejemplos de fealdad creados por el hombre."

Another important chapter focused on the relationship between industrial architecture and industrial archeology. Once again, the panorama he outlined of the latter is nourished by the usual international references to which he added the Spanish ones: Forner, Santacreu, Aracil, Izarzugaza, Casanelles, López, Ibáñez and Solías. He defined it by pointing out that "its object of study is the physical remains of the industrial past and it adopts special characteristics according to the moment in which it is acted upon, the place where they are found, the type of testimony collected and the research model applied"²³ (Sobrino, 1996: 93) and, being coherent with the identification he made of the beginning of industrial architecture in the very origin of Architecture, he applied a diachronic chronological framework. In fact, he indicated that establishing chronological limits is a very delicate task since a great number of interests collide. However, although he explained the limits set in other countries, he did not address those that should be imposed for our country. He concluded these reflections on industrial archaeology by calling for institutional action to define the most urgent fields of action and to declare the most outstanding elements of industrialization as cultural assets or historical monuments. In addition to demanding common guidelines for the preparation of inventories and catalogs and the generation of a theoretical corpus adapted to the peculiarities of the industrial revolution in Spain (Sobrino, 1996: 95).

The book that addressed the conceptual and methodological problems of industrial architecture is the one signed by Inmaculada Aguilar and published in 1998. In it, the author carried out a critical investigation on industrial architecture as a subject of study and as a substantial part of the cultural heritage. Her work aimed to specify its definition, delimit it chronologically and thematically "to arrive at a clear concept of the discipline, reflecting its most relevant characteristics"²⁴ (Aguilar, 1998: 32). To this end, she devoted chapters to the discipline of industrial archaeology and to the definition of industrial architecture, its culture and finally its restoration.

In relation to industrial archaeology, he presents the panorama of trends already mentioned: the English (Buchanan, Hudson, Panell); the Italian (Carandini and Negri); the French (Brueau, Balut, Daumas, Bergeron) and includes the Spanish, although focusing only on Aracil's contributions. To conclude, in line with the reflections of Buchanan or Aracil, that:

Industrial archaeology seeks a broad and totalizing vision of the study of the physical remains, so that a factory is not only an architectural construction but a work center where a specific social relationship is manifested, where a certain production process is introduced and where a specific technological system is introduced [...] In this sense, industrial archaeology should not specialize restrictively and should try to achieve totalizing historical objectives through its own argument. Its multidisciplinary character in terms of sources, methods and techniques can contribute to this totalizing objective²⁵ (Aguilar, 1998: 45).

²³ Original quotation: "tiene como objeto de estudio los restos físicos del pasado industrial y adopta características especiales según el momento en el que se actué, el lugar donde se encuentran, el tipo de testimonio recogido y el modelo de investigación que se aplique."

²⁴ Original quotation: "para llegar a un concepto claro de la disciplina, reflejando sus características más relevantes."

²⁵ Original quotation: "La arqueología industrial busca una visión amplia y totalizadora del estudio de los restos físicos, así una fábrica no es solo una construcción arquitectónica sino un centro de trabajo donde se manifiesta una relación social concreta, donde se introduce un determinado proceso de producción y donde se introduce un concreto sistema tecnológico [...] En este sentido, la arqueología industrial no debe especializarse restrictivamente y debe intentar objetivos históricos totalizadores a través de su propio argumento. A este objetivo totalizador puede contribuir, precisamente, su carácter pluridisciplinar en fuentes, métodos y técnicas."

Focusing on the chapters dedicated to industrial architecture, there are several contributions of this text. First of all, it established its definition, which would be repeated in subsequent studies on the subject. In this sense, it provided a broad and inclusive definition. She understood it as the result of the new concepts arising from the machine: interchangeability, series, repetition, standardization, commerce, technique, functionality and rationality. And within its field of action, it situates the building for industrial use (the factory); but also those other buildings that are a specific product of the industrial era and use industrial materials such as cast iron, iron and steel (markets, slaughterhouses, commercial galleries); and, finally, all those constructions that are part of the technical equipment at the service of the community (bridges, subways, water pipes, gas and electricity supplies). An architecture clearly linked to the use of new materials and characterized by a program that responded to the social, productive and economic needs of a historical period shaped by the empire of the machine and based on rational and functional thinking.



FIGURE 5. INTERIOR OF THE TURBINE HALL OF THE TERUEL THERMAL PRODUCTION UNIT (ANDORRA). 1979-2020. Image: Carlos Colás.

In short, Inmaculada Aguilar defined industrial architecture as:

All those buildings were constructed or adapted to industrial production, whatever their branch of production: textile, chemical, mechanical, paper, metallurgical, electrical, agricultural [...], as well as everything that refers to the extraction of raw materials. But industrial architecture is not only the architecture of buildings for industrial use, but also those public, collective or residential buildings that can be defined as specific products of the industrial era and that, to a large extent, are constructions that use materials prepared by the advanced technology of industry, such as, for example, the materials and elements prefabricated in cast iron, iron and steel in the last century²⁶ (Aguilar, 1998: 99)

²⁶ Original quotation: "Todos aquellos edificios construidos o adaptados a la producción industrial cualquiera que sea o fuese su rama de producción: textil, química, mecánica, papelera, metalúrgica, eléctrica, agrícola..., así como todo aquello que se refiera a la extracción de materias primas. Pero la arquitectura industrial no es solamente la arquitectura de los edificios de uso industrial, sino también, aquellos edificios públicos, colectivos o inmuebles de habitación que pueden ser definidos como productos específicos de la era industrial y que, en gran medida, son construcciones que emplean materiales preparados por una tecnología avanzada de la industria, como, por ejemplo, los materiales y elementos prefabricados en fundición, hierro y acero en el siglo pasado."

Restoration theory and industrial heritage

Another outstanding chapter in Aguilar's book is the one dedicated to the restoration of industrial architecture. Both in this and throughout the texts cited and analyzed, there has been a constant call for the conservation of this architecture through its reconversion or reuse, the two most commonly used words in these pioneering years. The founding text, the *I Jornadas sobre la Protección y Revalorización del Patrimonio Industrial*, addressed these problems of the conservation of industrial heritage confined exclusively to architecture. The lecture was given by Javier González de Durana Isusi. For him, the industrial building is the workshop, the factory, the industrial pavilion; in addition to other typologies such as workers' housing, aerial tramways, ore loading bays, railway stations, water pumping stations, power plants, meat processing plants, port warehouses. He pointed out that, being non-protected buildings, "they are not subject to the constraints of identical restoration"²⁷ (González, 1984: 254) and offer great possibilities for interior planning at a lower cost: "While a historic or artistic building requires a respectful and scholarly restoration with strong limitations on the possibilities of new uses, a port warehouse or a furnace shed offers much greater freedom"²⁸ (González, 1984: 254). He recognized the inexistence of common criteria at the time of proposing an intervention, although he considered that each one was different from the other, so that these criteria arose from individual analysis. He granted them the virtue of having large dimensions, which allowed for a wide variety of uses: public and private facilities and popular uses; and he characterized them as buildings of simple construction that have a historical value and collective memory, noting that they even "sometimes" have artistic value (or architectural interest). But, above all, he emphasized their high economic value due to their urban location (it is important to remember that this text was written in the 1980s, a time prior to the real estate boom in Spain and the large urban operations to transform disused industrial spaces into new neighborhoods).



FIGURE 6. FUNDACIÓ TAPIES. BARCELONA. BEFORE: MONTANER Y SIMÓN EDITORES, LLUÍS DOMÈNECH I MONTANER, 1881-1885. Intervention by Roser Amdó y Lluís Domènech Girbau, 1986-1990. Image: Carlos Colás.

²⁷ Original quotation: "no están sometidos a los apremios de la restauración idéntica."

²⁸ Original quotation: "Mientras que un edificio histórico o artístico exige una restauración respetuosa y erudita con fuerte limitación en las posibilidades de nuevos usos, un almacén portuario o una nave de hornos ofrece mucha mayor libertad."

For his part, Jesús Muñoz Baroja, head of the historical heritage technical services of the Basque Government, reflected in his paper on what should be the general criteria for intervention in these buildings. His starting point was the impossibility of equating an abandoned industrial pavilion with a church, a cloister or an altarpiece and, therefore, he expressed the need to seek new intervention criteria to replace those accepted for historical-artistic heritage. He posed the dilemma of two absolute positions: intervention in industrial architecture is a question linked to the architectural project outside the limitations of restoration; or the same criteria should be applied to it as to the scientific restoration of historic-artistic monuments. Finally, he opted for an intermediate position. His starting point was whether or not the elements of industrial heritage are works of art. To this end, he analyzed these assets from the perspective of Cesare Brandi's *Theory of restoration*: the double historical and aesthetic cases, the figurative unity of a work of art and the analysis of time in relation to the work of art.

He pointed out that they fulfill the double condition of historical and aesthetic value, but when he analyzed time following Brandi's triple scheme, he came to the conclusion that much of what we call industrial heritage is not susceptible to being understood as a work of art: "In many cases, it has been conceived in an express exclusion of aesthetic approaches and the time elapsed until the moment of receiving our attention has hardly added anything in this sense"²⁹ (Muñoz, 1984: 267). Only in the third moment (the instant in which this work is recreated in the representation of the observer) does our cultural conscience load the work with aesthetic meaning, fulfilling that first creative process that did not exist in the beginning:

*From what has been said so far it is clear that we leave as obvious the cases in which a very relevant historical importance (...) or a great aesthetic value (if we think, for example, of the works of Eiffel), place us squarely in the same theoretical field of the Historic-Artistic Heritage. On the other hand, for the other less classifiable cases, it will be more useful to resort to a concept that could be defined as the revelation of values, rather than the traditional "conservation" or "rehabilitation". It is a matter of proposing interventions that gather all the most specific potentialities of the industrial element and of repropounding a valid and creative figurative image that makes legible in an enriching way all the values that are implicit in any human work, be they historical, cultural, of use or aesthetic*³⁰ (Muñoz, 1984: 268).

The *Enciclopedia valenciana* dedicated four entries to these topics, all of them written by Javier Martí: conservation, rehabilitation, restoration and reuse. In the first of these, he did not enter into the definition of conservation criteria or models, but rather into the need to prolong the useful life of both machines and buildings. In relation to the latter, he concluded by indicating that "the conservation of a building or monument cannot be limited to the building itself, since it is inseparable from the environment that surrounds it, so additions or changes that alter the context should be avoided as much as possible"³¹ (Martí, 1995: 222).

²⁹ Original quotation: "En muchos casos, ha sido concebido en una exclusión expresa de planteamientos estéticos y el tiempo transcurrido hasta el momento de recibir nuestra atención no ha añadido apenas nada en este sentido."

³⁰ Original quotation: "De todo lo dicho hasta ahora se desprende que dejamos por obvios los casos en que una importancia histórica muy relevante [...] o un gran valor estético (si pensamos p.e. en las obras de Eiffel), nos sitúan de lleno en el mismo campo teórico del Patrimonio Histórico Artístico. En cambio, para los otros casos menos clasificables resultará más útil recurrir a un concepto que se podría definir como revelación de los valores, más que al de "conservación" o "rehabilitación" tradicionales. Se trata de plantear intervenciones que recojan todas las potencialidades más específicas del elemento industrial y de repropounding una imagen figurativa válida y creadora que haga legibles de una manera enriquecedora todos los valores que están implícitos en cualquier obra humana, ya sean históricos, culturales, de uso o estéticos."

³¹ Original quotation: "la conservación de un edificio o monumento no puede limitarse al inmueble en sí, ya que éste es inseparable del entorno que le rodea, por lo que debe evitarse en lo posible las adiciones o cambios que alteren el contexto."

After some very general remarks on what is meant by rehabilitation and restoration of historic-artistic heritage without going into specific considerations for industrial heritage, he addressed the issue of reuse. In this entry, he pointed out that it is the most appropriate alternative for obsolete industrial buildings. He stated that the characteristics of these buildings, large dimensions and diaphanous and spacious warehouses, facilitate their reconversion for various uses in the service, entertainment or cultural sectors.

As for the volume focused on the Basque province of Bizkaia, the authors proposed the criteria under which to define what an industrial monument is. They pointed out:

*The identification of a certain factory or productive activity as a basic factor in the configuration of an environmental setting, its specific historical weight within an economic sector, its status as a precursor landmark – typological, technological – or as a surviving landmark of an obsolete productive system, the eloquence of the preserved remains, the evocative power of other objects or establishments that have already disappeared, and the singularity of its symbolic aspects or its formal or decorative components*³² (Ibáñez, Santana y Zabala, 1988: 158).

After which, they noted the difficulty of preserving this type of facilities since “behind its false appearance of omnipotence hides the face of its enormous fragility. Nothing is as ephemeral as the useful, because when its function is extinguished it makes no sense to try to artificially prolong its existence”³³ (Ibáñez, Santana y Zabala, 1988: 158). Therefore, they urged their conservation through reuse processes since, once again, they insist on the capacity of these buildings to be “resistant, versatile and spacious”³⁴ (Ibáñez, Santana y Zabala, 1988: 158). And without going into the most appropriate intervention criteria for these structures, they defended their capacity to be adapted to practically any new use:

*They can house art galleries, concert halls, sports facilities, craft workshops-markets, archives and libraries, spaces for artistic creation, etc. Subsidized privatization that favors the creation of modern housing, commercial galleries or theaters should not be excluded, without excessively taxing the public coffers. Logically, the so-called machine-architectures are not susceptible to reuse, but their presence should be maintained in order to emphasize an urban environment that is often mediocre and bland*³⁵ (Ibáñez, Santana y Zabala, 1988: 161).

For his part, Julián Sobrino, without a previous reflection on intervention criteria and possible uses, denounced that:

³² Original quotation: “La identificación de una determinada fábrica o una actividad productiva como factor básico en la configuración de un entorno ambiental, su importante peso específico histórico dentro de un sector económico, la condición de hito precursor –tipológico, tecnológico– o la de hito superviviente de un sistema productivo, obsoleto, la elocuencia de los restos conservados, el poder de evocación de otros objetos o establecimientos ya desaparecidos, y la singularidad de sus aspectos simbólicos o de sus componentes formales o decorativos.”

³³ Original quotation: “detrás de su falsa apariencia de omnipotencia esconde el rostro de su enorme fragilidad. Nada hay tan efímero como lo útil, porque cuando se extingue su función no tiene sentido intentar prolongar artificialmente su existencia.”

³⁴ Original quotation: “resistentes, versátiles y espaciosos.”

³⁵ Original quotation: “En ellos es posible alojar galerías de arte, salas de conciertos, instalaciones deportivas, talleres-mercado de artesanía, archivos y bibliotecas, espacios de creación artística, etc. No debe excluirse la privatización subvencionada que favorezca la creación de viviendas modernas, galerías comerciales o salas de espectáculos, sin gravar excesivamente las arcas públicas. Lógicamente aquellas que denominábamos arquitecturas-máquina no son susceptibles de reutilización, sin embargo, su presencia debe ser mantenida para enfatizar un entorno urbano que a menudo es mediocre y anodino.”

The destruction of these buildings (located in significant urban or natural areas) can be considered a material and cultural waste, their good lighting, and the large diaphanous built surface, which allows them to be rehabilitated and preserved for a variety of purposes, among which we can mention the converted industrial use itself (often the case in industry); the conversion into a technological museum of a company, industrial sector or of a general nature; their use as public equipment, as an industrial archaeological park (ecomuseum) or, ultimately, as representative elements of the landscape: chimneys, bridges, etc.³⁶ (Sobrino, 1996: 337).

While Inmaculada Aguilar argued that we can speak of restoration of industrial architectural heritage since the creation of the German Museum of Bochum (1968), the Ironbridge Gorge Museum Trust (1968) and the Ecomusée de Le Creuset (1973) and in the origin of this type of interventions prioritized the historical value over the aesthetic. She noted that, although industrial architecture has been recognized for its capacity to bear witness to the industrial past and to a historical moment, there is still a lack of criteria for its conservation and rehabilitation, as well as a lack of specialized training for those who are going to intervene in this type of buildings or structures.

Therefore, she addressed a complex issue such as the intrinsic values that these buildings present and whose knowledge is necessary to undertake their proper conservation and restoration. In this sense, she defended the need to highlight the most relevant characteristics of the industrial monument, such as its typology, construction materials, new technologies and the memory of the place. To this she added the need to “emphasize the industrial character of the building”³⁷ (Aguilar, 1998: 243), so it is necessary to highlight concepts such as functionality, standardization, company architecture, rhythm and order, complexity and coherence, atmosphere and texture, monumentality and proportion, confrontation and articulation, spatiality and solidity, structure and roof, shadow and light, silence and sound, routes, to avoid reducing its characteristics to the character of the facades and forgetting other aspects. However, the situation is characterized by the lack of criteria when selecting which industrial buildings are preserved and which criteria should be applied in the interventions:

The difficulties are greater than those that can be found in interventions on a historical monument in the classic sense, firstly because of a lack of sensitivity towards the object, which is why this heritage is in great difficulty to survive and, secondly, the fact that, at most, it is considered as a simple container due to its diaphanous spaces and its possibilities of reconvertibility, forgetting as always its own specific character, its historical condition, and its traces that reflect a past very close to us, an aspect that we should approach with greater seriousness³⁸ (Aguilar, 1998: 245).

³⁶ Original quotation: “Se puede considerar un despilfarro material y cultural la destrucción de estos edificios (situados en espacios urbano o naturales significativos), su buena iluminación, y la gran superficie diáfana edificada, que les permite ser rehabilitados y conservados para muy variados fines, entre los que podemos citar el propio uso industrial reconvertido (caso frecuente en la industria); la conversión en museo tecnológico de empresa, de sector industrial o de carácter general; su utilización como equipamiento público, como parque arqueológico industrial (ecomuseo) o, en última instancia, como elementos representativos del paisaje: chimeneas, puentes, etc.”

³⁷ Original quotation: “remarcar el carácter industrial del edificio.”

³⁸ Original quotation: “Las dificultades son mayores que las que se pueden encontrar en las intervenciones sobre un monumento histórico en el sentido clásico, en primer lugar por una falta de sensibilidad hacia el objeto, razón por la cual este patrimonio se encuentra en gran dificultad de sobrevivir y, por otra, el que, como máximo, se le considera como simple contenedor debido a sus espacios diáfanos y sus posibilidades de reconvertibilidad, olvidando como siempre su propio y específico carácter, su condición histórica, y sus huellas que reflejan un pasado muy próximo a nosotros, aspecto al que deberíamos acercarnos con mayor seriedad.”

This final paragraph by Inmaculada Aguilar made clear the reductionism with which industrial architecture has been valued at the moment of defining what intervention criteria should be applied to it. These authors reduced the conceptual complexity of industrial architecture to its formal characteristics: large spaces, diaphanousness, capacity for adaptation and disregard its aesthetic values. As this same researcher reflected, industrial architecture is valued while eluding the concepts under which it was conceived. This ignorance distorts its appreciation as a work of art by applying to it a template inherited from historical architecture alien to the parameters of its own historical moment. Therefore, its historical value is recognized, but it is stripped of its aesthetic value.



FIGURE 7. CAIXAFORUM MADRID. BEFORE CENTRAL ELÉCTRICA DEL MEDIODÍA, 1900. Intervention by Herzog & Demeuron, 2002. Image: Carlos Colás.

National Plan for Industrial Heritage (2001): a starting point for a new phase?

Throughout the 1990s, but especially with the turn of the century, scientific production on these topics grew exponentially. Regional and local congresses multiplied; social science, geography and art history journals devoted monographic issues to the subject, to which was added research within universities with the reading of doctoral theses in the various branches and the publication of books compiling these studies and their main conclusions (Cano, 2007). It can be affirmed that all of them have the same basis in common: the one provided by these precursors. The British notion of an industrial monument was assumed; industrial archaeology as the discipline in charge of its study; the importance of both the material remains and the documentary sources and the prominence of industrial architecture reduced to a flexible container for all kinds of uses.

In addition, some of these texts detected and denounced the problems that afflicted industrial heritage and prevented its proper conservation: the lack of funding for studies; the lack of training in this discipline, especially on the part of the administration in charge of its protection and conservation; the absence of a relationship between the administrations that had the same object of work and the lack of awareness at both the social and political level to defend preservation policies against indiscriminate demolition.

This set of faults has hardly changed over time despite the creation and development of the Plan Nacional de Patrimonio Industrial³⁹ and the consensus that it generated among the administrations involved. This national plan was conceived as a management tool that was launched in 2001 and revised in 2011, from the Dirección General de Bellas Artes y Bienes Culturales,⁴⁰ through the Instituto de Patrimonio Histórico Español,⁴¹ with the aim of articulating the bases on which to develop conservation actions focused on industrial assets in the face of their rapid disappearance.

After twenty years in effect, its achievements are evident, as are the gaps it presents. Among its most important results is its definition of industrial heritage, which until now had not been addressed by Spanish historiography. Thus, it states that:

Industrial heritage is the set of movable and immovable assets and systems of sociability related to the culture of work that have been generated by the activities of extraction, transformation, transport, distribution and management generated by the economic system that emerged from the "Industrial Revolution". These assets should be understood as an integral whole composed of the landscape in which they are inserted, the industrial relations in which they are structured, the architectures that characterize them, the techniques used in their procedures, the archives generated during their activity and their practices of a symbolic nature⁴² (Doc. Plan Nacional, 2011: 9).

³⁹ National Plan for Industrial Heritage.

⁴⁰ Directorate General of Fine Arts and Cultural Heritage.

⁴¹ Spanish Historical Heritage Institute.

⁴² Original quotation: "El patrimonio industrial es el conjunto de los bienes muebles, inmuebles y sistemas de sociabilidad relacionados con la cultura del trabajo que han sido generados por las actividades de extracción, de transformación, de transporte, de distribución y gestión generadas por el sistema económico surgido de la «Revolución industrial». Estos bienes se deben entender como un todo integral compuesto por el paisaje en el que se insertan, las relaciones industriales en que se estructuran, las arquitecturas que los caracteriza, las técnicas utilizadas en sus procedimientos, los archivos generados durante su actividad y sus prácticas de carácter simbólico."

It also specified the industrial assets that comprise it and classified them into immovable assets (industrial elements, industrial complexes, industrial landscapes and industrial systems and networks), movable assets (artifacts, tools, furniture, accessories of the social environment of work and archives) and intangible assets (the memory entities of industry related to the culture of work). It also delimited its time frame and circumscribed it to an economic model typical of the Industrial Revolution, placing it between the second half of the 18th century, with the beginnings of mechanization, and the moment when this was starting to be totally or partially replaced by other systems in which automation intervened.

While in the section related to protection and conservation, it reflected on the criteria of valuation and tried to establish common criteria for all. In this way it differentiated between the intrinsic values that are specific to it (testimonial, singularity and/or typological representativeness, authenticity and integrity) and heritage values (historical, social, artistic, technological, architectural, territorial and anthropological). However, the plan did reflect on what are the specific intervention criteria for this heritage, assuming the guidelines provided in the *Nizhny Tagil Charter* as its own. In this sense it indicated that:

Interventions in industrial elements or complexes should follow the general conservation standards for any cultural heritage. As specific guidelines for maintenance and conservation, the criteria approved at the TICCIH National Assembly held in Moscow on July 17, 2003 are adopted as the NIZHNY TAGIL CHARTER ON INDUSTRIAL HERITAGE⁴³ (Doc. Plan Nacional, 2011: 13).

In conclusion, this plan, understood fundamentally as an instrument for the management of interventions, has had more influence at the theoretical level than in the field of conservation. It proposed an integrating vision of the industrial phenomenon, emphasizing its territorial and anthropological character, addressing the industrial property as a monument while linking it to the urban space and the territory. It set the definition of industrial heritage assumed in most of the studies carried out after its approval date, established the intrinsic and extrinsic values of this heritage and classified the assets that comprise it. Likewise, it allocated funding for a set of interventions that are proposed as models for future actions, but it was not capable of establishing a common doctrine.

Protection and conservation as the basis for valorization

Lights and shadows reflected in two fields: protection and conservation. Among the lights, the most outstanding advance is the evolution detected in the cultural heritage laws of the various autonomous communities. The *Ley de Patrimonio Histórico Español* dates from June 25, 1985, four years after the I Jornadas sobre la protección y revalorización del patrimonio industrial. It was drawn up, therefore, at an incipient moment of reflection and specification of what was industrial archaeology in Spain. This climate of speculation included in the legislation, since among the types of heritage it explicitly names “the immovable and movable objects of scientific or technical value”⁴⁴, introducing industrial assets as part of cultural heritage; and assuming the dependence of this discipline on the History of Science and Technology, as has already been pointed out. From this first norm, and with the development of the autonomous state, the different pieces of legislation that were approved have given an

⁴³ Original quotation: “Las intervenciones en elementos o conjuntos industriales deben seguir las normas de conservación generales para cualquier patrimonio cultural. Como directrices específicas de mantenimiento y conservación se adoptan los criterios aprobados en la Asamblea Nacional del TICCIH que tuvo lugar en Moscú el 17 de julio de 2003 y que se conformó como CARTA DE NIZHNY TAGIL SOBRE EL PATRIMONIO INDUSTRIAL.”

⁴⁴ Original quotation: “los inmuebles y objetos muebles de valor científico o técnico.”

unequal treatment to the industrial assets. On the one hand, those that maintain the criterion of national and assimilate it to the scientific or technical (such as those of the Basque Country, Catalonia or Andalusia) or those that affect its anthropological component and assimilate it to ethnography (Cantabria, Valencia, Aragon, Canary Islands, Extremadura, Castile and Leon and Madrid) (Alonso, 1996; Pérez, 2014). However, with the turn of the century, the consolidation of studies and the imprint of the national plan, a series of regulations are approved where this heritage is explicitly recognized (Asturias, Navarra, Andalusia and the Canary Islands, Castilla-La Mancha and Galicia). In them, it has its own section with articles defining it, categorizing it and implementing a particular protection regime. In this group, those enacted in Asturias and Andalusia stand out, since both emphasize its territorial nature and the need to establish communication links with urban planning, adopting the necessary measures for its protection and enhancement.

However, this evolution detected in historical heritage legislation, from the protection of the monument (reduced to architectural values) to that of the whole or landscape, does not yet have a wide repercussion. For in the declarations, the monument still prevails over the territorial or anthropological perspectives. This overvaluation of the architectural over other values such as historical, territorial or anthropological is evident in several resolutions denying protection where the poor architectural quality is argued as irrefutable evidence to oppose conservation. This argument is read for example in one of the reports issued by experts in the case of the Fundición Averly (2016) or in the resolution denying the figure of listed property for the Andorra thermal power plant (2021). Both also coincided in pointing out that the anthropological values were collected through photographs and other types of documentary material so it was valid to eliminate the physical remains. In this sense, both documents go against the importance of the material asset as the basis of industrial archaeology and replace it with documentary sources.

Within the shadows, the most important shortcoming is the lack of development of a general inventory of Spanish industrial assets beyond the proposals of the autonomous communities with a lack of common data collection instruments. And the paralysis of the impulse of the drafting of master plans and intervention projects started in the first period of the national plan. In those initial years, some interesting actions were undertaken, but later on the action in this field ceased (VV.AA., 2007). This lack of a clear doctrine, focused mainly on the musealization of the properties on which it acts, expels from the reflection the problem of how to intervene in cases linked to new uses and connected to the needs of the post-industrial city (cultural, leisure, housing, among others). In a significant number of buildings, intervention is based on a new vocabulary: transformation, recycling, reuse, requalification, appropriation or mutation. The term "preservation" is preferred and the term "restoration" is disregarded. This situation is not detected exclusively in industrial heritage, but it is a current also denounced for historical architecture (Hernández Martínez, 2016) that extends throughout the first decade of the 21st century.

As Andrés Cánovas recognized, industrial architecture is the best testing ground:

Buildings that are encapsulated and, because of their age and regardless of their qualities, are protected to the point of paroxysm with the varnish of 'what is ours', are the industrial buildings that can be the object of a good number of reflections and also of some intervention far from the foreseeable. The terms 'rehabilitation' and 'conservation' are presented as staples that fix the actions to a reality on the existing: to return the construction to its original state –as if that were desirable and possible– or, if necessary, to apply the chloroform of stabilization. [...]



FIGURE 8. CULTURAL SPACE "MATADERO MADRID", MADRID. BEFORE: SLAUGHTERHOUSE AND MUNICIPAL LIVESTOCK MARKET, LUIS BELLIDO, 1911-1925. Intervention by Intermediae y vestíbulo, Arturo Franco and Fabrice van Teslaar, 2006. Image: Carlos Colás.

This form of action (intervention) on industrial buildings is developed with the obvious advantage of the disappearance of the original use under whose strict rule they were built. A treacherous advantage since some architects tend to forget the rough beauty of what has grown only with the seed of utility. Even so, the buildings in this context welcome the right cultivation for purposeful intervention, for their transformation. And it is, to say the least, curious that, in most cases, these places end up being repositories of a culture that does not seem to give so much.

The modification of the built material is established as one of the most frequent systematics in the reconstruction of the facilities that were containers of industrial work. Places where the intensity of memory is present, these buildings are sometimes patched, sometimes they benefit from painting, sometimes they

*tattoo their skins with more or less recognizable geometries, sometimes they are made with objects within the object, and sometimes they build themselves with the materials of their own destruction, resorting to the collective drunkenness of zero waste. I incline my sympathy for this last ethylic option of recycling, of enormous poetic intensity. The material is moved, new uses are assigned to it, and the building becomes different again*⁴⁵ (Cánovas, 2013: 21).

These are actions that preserve the original structure of the building and transform the spatial configuration as a result of the new uses. The option is often to maintain the image of the complex, but by emptying it, the historical, architectural and technological values are disregarded. In short, the industrial building is reduced to its façade (the Alhóndiga in Bilbao) and sometimes not even that, since the composition of the elevations is transformed at the whim of the new uses (CaixaForum in Madrid) (Biel, 2016). Although, as Ascensión Hernández Martínez has analyzed, perhaps the interventions in Matadero Madrid are the ones that best represent this situation, especially the one carried out in building 17. In 2005, work began in this industrial complex with a common program: to preserve the envelopes of the buildings, reinforce them structurally and refurbish the interior. The principles on which the projects were based included reversibility and the express maintenance of all traces of the past; seeking a balance between the historic space and the new facilities and making limited use of industrial materials (PECAM, 2012). Of all of them, the *Intermediae* space, located in building 17, represents this situation of renouncing restoration and opting for a “premeditatedly poor aesthetic”⁴⁶ (Hernández Martínez, 2013: 282). The intervention was the work of architects Arturo Franco and Fabrice van Teeslar, who decidedly opted for “maintaining all the traces of the passage of time: the cuts in the walls, the PVC downspouts, the marks of the backhoe, the cork, the tile of the levels, the repair and consolidation of the pillars [...]”⁴⁷ (Franco, 2011: 1).

The result is an intervention that:

has been consciously reduced to the minimum, which responds to the taste for the formless, for the crude, for a certain premeditatedly poor aesthetics, perhaps unpleasant depending on the canons, as opposed to the cult of the new that for years has been imposed on social taste [...]. It has even gone beyond what would be minimal conservation, since in a provocative contemporary gesture, the appearance of artificial ruin has been emphasized by chipping the plaster

⁴⁵ Original quotation: “Encapsuladas las edificaciones que, por edad e independientemente de sus cualidades, están protegidas hasta el paroxismo con la vaselina de ‘lo nuestro’, son los edificios industriales los que pueden ser objeto de un buen número de reflexiones y también de alguna que otra intervención alejada de lo previsible. Los términos ‘rehabilitación’ y ‘conservación’ se presentan como grapas que fijan las actuaciones a una realidad sobre lo existente: devolver la construcción a su estado original –como si eso fuese deseable y posible– o, en su caso, aplicarle el cloroformo de la estabilización. [...]”

Esa forma de actuación (la intervención) sobre los edificios industriales se desarrolla con la ventaja evidente de la desaparición del uso original bajo cuya estricta regla se edificaron. Una ventaja traicionera puesto que algunos arquitectos suelen olvidar la belleza áspera de lo que ha crecido sólo con la semilla de la utilidad. Aún así, las edificaciones en este contexto acogen el cultivo propicio para la intervención propositiva, para su transformación. Y es, cuando menos, curioso que, en la mayoría de los casos, esos lugares acaban siendo depósitos de una cultura que no parece dar para tanto.

La modificación de la materia construida se establece como una de las sistemáticas más frecuentes en la reconstrucción de las instalaciones que fueron contenedoras del trabajo industrial. Lugares en los que la intensidad de la memoria está presente, esos edificios unas veces se parchean, otras se benefician de la pintura, en ocasiones tatúan sus pieles con geometrías más o menos reconocibles, a veces se fabrican con objetos dentro del objeto, y otras veces se construyen a sí mismos con los materiales de su propia destrucción, acudiendo a la borrhachera colectiva del residuo cero. Yo inclino mi simpatía por esta última opción ética de reciclado, de enorme intensidad poética. Se cambia la materia de lugar, se le asignan nuevos usos y el edificio vuelve a ser distinto.”

⁴⁶ Original quotation: “estética premeditadamente pobre.”

⁴⁷ Original quotation: “mantener todas las huellas del paso del tiempo: los cortes en los muros, las bajantes de PVC, las marcas de la retroexcavadora, el corcho, el azulete de los niveles, la reparación y consolidación de los pilares [...]”

*of the walls and supports up to half height and opening irregular openings in the wall to create access passages between the naves, in which iron boxes are inserted as doors, but resembling sculptures*⁴⁸ (Hernández Martínez, 2016: 42).

With the arrival of the crisis (back in 2008), the situation stagnated, but it is maintained and deepened in an architecture of recycling and economy of means. And although industrial heritage is still in fashion, it seems to have entered a period of tense calm.

Conclusions

Industrial archaeology in Spain began its trajectory strongly influenced by the British current. The concept of the industrial monument, understood as a factory of singular value with a predominance of architectural and technical aspects, was adopted. However, Spanish researchers soon considered the need to introduce anthropological aspects into their studies, following the trends imported from Italy. The result is a certain dispersion of opinions that is resolved with the adhesion reached with the publication of the Plan Nacional de Patrimonio Industrial. This document reaches an agreement on a holistic definition of industrial heritage where industrial archaeology is understood as the study methodology that approaches its knowledge from an interdisciplinary position. Although it is unable to generate a critical reflection on the restoration criteria to be applied to this heritage in its entirety (not only architectural).

Simultaneously, industrial assets are undergoing a process of valuation both from the legislative standard and from the conservation of its most outstanding examples. In both fields, advances are observed that gather the reflections of the theoretical framework; although without being able to break a series of stereotypes that from the beginning are installed in the administrations and in certain groups of professionals. Thus, a situation of advances at the theoretical level and contradictions at the practical level is maintained.

From the legislative point of view, there is an evolution in the heritage pieces of legislation that are being approved in the various autonomous communities. Thus, in the so-called second-generation legislation, industrial heritage is singled out for its territorial dimension, and this is included in the new means for its protection, as in the case of the Asturian and Andalusian pieces of legislation. However, there is a dysfunction between the norm and its practical application. In spite of this normative recognition, in a significant number of cases the administration continues to resort to clichés, such as the low architectural value of these assets, to deny their protection.

From the point of view of the practice of monumental restoration, there is a certain disdain for applying to industrial architecture the parameters set by the theory of restoration. Already in the first few texts that reflect on these issues, the industrial building is considered useful for almost any new use, making a mantra of its characteristics of spatiality and diaphanousness. In support of this idea, the importance of historical values over aesthetic values is emphasized, since the latter are identified with utility and functionality. These ideas are the substratum of a good number of interventions of the late 20th century and

⁴⁸ Original quotation: "se ha reducido de manera consciente al mínimo, que responde al gusto por lo informe, por lo crudo, por una cierta estética premeditadamente pobre, quizás desagradable para según qué cánones, frente al culto a lo nuevo que durante años se ha impuesto en el gusto social [...]. Incluso se ha ido más allá de lo que sería la conservación mínima, ya que en un provocador gesto contemporáneo, se ha subrayado el aspecto de ruina artificial picando los revocos de los muros y soportes hasta media altura y abriendo irregulares aberturas en el muro para crear pasos de acceso entre las naves, en las que se insertan unas cajas de hierro a modo de puertas, pero que semejan esculturas".

the first decades of the 21st century. Thus, in these cases, the lack of “architectural value” is one of the reasons that drives “beautification” projects. At the same time, another trend is developing that appreciates the aesthetic values of these buildings. The useful and functional is underestimated as lacking in style and is identified as genuinely industrial within the trend of minimal intervention. Moreover, we can see that different criteria are used if the new destination is a museum or a new use is proposed. In the first case, the projects are usually adjusted to the criteria that emanate from the restoration charter; while in the second case, the actions become a field of research for these new trends within the discipline of restoration. This difficulty in applying the assumed criteria of modern restoration means that industrial architecture, like contemporary architecture, is detached from the accepted corpus and requires specific standards. However, the analyses of Simona Salvo (2016) or Ascensión Hernández Martínez (2015) on contemporary architecture, propose that the same criteria can be applied without the need to seek specific ones for these architectures. There is no doubt that this debate is related to the crisis and dilemmas in which the discipline of monumental restoration finds itself.

In short, this complex panorama, where the architecture and its problems are given priority over other assets, leads to a situation in which industrial heritage is identified with architectural materiality. Thus, the importance of movable assets, archives and oral memory is ignored. In this sense, there is still much to be done in the field of theory and in the rescue, such as the restoration of machinery and equipment. To which must be added the need to recover industrial archives and work with the memory of the workers. There is still a long way to go to achieve a global vision of industrial heritage based on the culture of work and not only on the materiality of its architecture and structures.

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