





Article

Analysis for the Heritage Consideration of Historic Spanish Railway Stations (1848–1929)

Aurora Martínez-Corral ^{1,*}, Javier Cárcel-Carrasco ¹, María Carmen Carnero ² and Carolina Aparicio-Fernández ¹

¹ Architectural Constructions Department, Universitat Politècnica de València, 46022 Valencia, Spain; fracarc1@csa.upv.es (J.C.-C.); caap@csa.upv.es (C.A.-F.)

² Business Management Department, Universidad de Castilla La Mancha, 13001 Ciudad Real, Spain; carmen.carnero@uclm.es

* Correspondence: aumarcor@csa.upv.es

Abstract: This article presents the study carried out on the main Spanish historic railway stations to obtain a joint and comparative view of the current state of its heritage conservation. The temporal scope is limited to the construction period of the Spanish historic stations. A motivated selection of a series of extrinsic and intrinsic variables is proposed, checking heritage variables to evaluate the degree of adequate heritage protection. The conclusions of the study show the antithesis between what is to be protected (the railway station) and what is really saved (the passenger building), making it necessary to change the legal protection status from monuments to landscapes. Thus, various interventions can be observed on the disaffected land with no heritage connection. The material and technological valorisation of unique components such as the large platform and track roofs is ignored. It is also observed that the maintenance of railway use is essential and that global interventions lead to a more significant loss of significance than those carried out for maintenance purposes. This leads to the conclusion that preventive conservation is more effective in protecting this heritage than global interventions.

Keywords: railway station; industrial heritage; methodology; inventories



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1. Introduction

Regarding the concept of heritage, the turning point established by the Hague Charter (1954) (by introducing the concept of cultural asset instead of the historical-artistic monument established by the Athens Charter (1931)) is essential. From that moment on, the concept of heritage has only been expanded in successive international documents and, in the case of industrial heritage, the definition included in the Nizhny Tagil Charter (2003) [1] based on the TICCIH definition, as those remains of industrial culture, that is, with historical, technological, functional, or social values, without eliminating the architectural ones, and where railway stations are explicitly included, is considered appropriate as well as the principles included in the Dublin Charter (2011) [2], the concretisation in its study and actions established by the Seville Charter of Industrial Heritage (2018) [3].

The peculiarities of this heritage, with a large occupation of land by a single owner in very attractive positions and the fact that it is a heritage of everyday use, among other factors, are detrimental to its heritage consideration. The lack of a clear definition of the meaning of “railway station” and the application of the traditional criteria of heritage protection result in ineffective action in pursuit of heritage preservation.

As previous related and contextual concepts essential to the study of railway stations, the idea of industrial landscape is linked to that broader current conception of heritage already outlined in the Paris Convention of 1972 [4], increasingly concretised in successive reference documents. Regarding industrial heritage, the European Landscape Convention

formulated in Florence in 2000 [5] by the Council of Europe already establishes a basic action protocol for its treatment.

In a metaphorical sense, in the case of industrial heritage, it also includes places of memory, such as the memory of workers or railway activity. Therefore, integrating the area of the railway station is essential as identity reinforcement [6], helping in its preservation.

In the case of railway stations, it is crucial to understand that both the occupation of space and the distribution of elements respond to strictly productive and economic needs [7]. They are industrial, changing, and complex landscapes [8,9] which are not approached or imagined in their configuration from the point of view of heritage conservation. The railway stations should not be interpreted as “picturesque places” but as “quotidian places” [10]. These are industrial landscapes resulting from activity carried out over time, in such a way that the city and the operation of the station interact indissolubly. That essence is what we must concretise and preserve [11].

The actions carried out in Asturias to identify industrial heritage with the revaluation of the territory where they are implanted (mining parks, thermal power plants, heritage itineraries) are pioneering, where the work of Asturian Industrial Heritage Association (INCUNA) is essential. In addition, in Andalusia, the actions, in this sense, of understanding and striving to transmit the industrial asset linked to its territory promoted by the Andalusian Institute of Historical Heritage (IAPH) are relevant.

These aspects and the broadening of the concept of heritage are essential in the case of stations to overcome the traditional view of this heritage as a single monumental building (the passenger building) by applying only historical and artistic criteria typical of the early 20th century.

Before tackling the analysis carried out, it is essential to define what a railway station is, given that there is widespread confusion in simplifying it to the passenger building. A station is a set of buildings and facilities of different types and functions (warehouses, workshops, depots, etc.). The passenger building is one of the groups of buildings that stand out for being meant for public use and, therefore, are the best known. It is the part of the station, which is the urban façade, the representative part of the complex and, therefore, where a series of architectural resources are concentrated (composition, material richness and diversity, ornamentation, etc.). All these features do not appear in the rest of the complex conceived as functional buildings and facilities, and whose image is the result of the criteria of functionality and economy [12–14].

Spain’s historic stations were built by the prominent railway companies that established themselves in the country, with the Norte [15] and MZA (railway company from Madrid to Zaragoza and Alicante) [16] companies standing out for the large number of unique stations that they built. However, other smaller companies were also capable of erecting outstanding examples (Almería) [17].

In stations, the duality between the passenger building, linked to civil and public architecture, responsible for the urban image and representativeness of the company, and the rest of the station complex, starting with the platforms and tracks, where questions of functionality and economy take precedence, coexists. The most peculiar feature of the passenger building is that it is the building inside the station where this duality must coexist, and the architecture must be capable of resolving it and integrating it as a heritage value.

The question of representativeness was an essential aspect for the great railway companies of the 19th century since, mainly through the main façade and the vestibule, they sought to symbolise the company’s economic power.

The chronological scope of historical stations is restricted to stations built between 1848 and 1929. Without going into the complexity of what historical stations entail because it is far from the objective of the article, we specify that historical Spanish stations are understood to be those built within the period indicated. The selection of this period is based on the three stages in which stations were built in Spain: the first, between 1848 and 1868, when temporary buildings were constructed and of which no example remains [18]; the second, between 1868 and 1901, a period of growth and expansion where

the buildings gradually acquired the status of symbols of the companies, using both classical compositional resources and the new material, steel; and finally, the third, between 1901 and 1929. The date 1929 was chosen because it was when the last large metal roof was built for the platform and track space at the France or Barcelona-central station, putting an end to the so-called “iron architecture” as far as the stations are concerned. The geographical scope is national.

Regarding track gauges, there are currently four types of gauges in Spain: Iberian (11,333 km), standard gauge (2591 km), mixed gauge (190 km), and metric gauge (1207 km). The Iberian corresponds to the denomination used for “wide track” whose measurement is 1668 m. All the historical stations analysed were built for the broad-gauge network.

This article presents the study carried out on the main Spanish historic stations understood as those built in the period analysed, to obtain a joint and comparative view of the current state of heritage conservation of this singular ensemble, representative of an era and made up of unique specimens. Some references to recent analyses of railway stations from this perspective can be found at [19–24].

It is a heritage which receives little legal protection (only 0.0006 of the assets included in the General Register of Assets of Cultural Interest are stations and there is only one station on the UNESCO World Heritage List [25] of the four railway infrastructures (high mountain lines)), and whose interventions indicate low collective valuation, possibly based on the intrinsic peculiarities of this heritage, which are detailed below. Within the types of industrial heritage according to the classification of the National Plan for Industrial Heritage [26] drawn up by the Spanish Cultural Heritage Institute (IPCE), the stations would be included in the type “industrial systems and networks for the transport of passengers, goods, etc. which, due to their complex articulation and their heritage values, constitute a material testimony to territorial planning, the mobility of people, ideas or goods or the art of building public works of the contemporary period”. However, in the few cases where such protection exists and refers exclusively to the passenger building, they are legally protected as monuments, whereas, according to the detailed classification, they should be classified as industrial landscapes [8,27,28].

The protection of industrial landscapes is supported, according to the document mentioned above, by the UNESCO World Heritage Convention (Paris 1972) [4], adopting the precepts of the Council of Europe recommendation R90/20 [29], ratified by Spanish law and by the European Convention on Cultural Landscape of the Council of Europe (Florence, 2000) [5], where landscape is defined as any part of the territory as perceived by the population, the character of which is the result of the action and interaction of natural and/or human factors.

In the case of Spain, only 11 stations are included in the Spanish General Register of Assets of Cultural Interest (RGBIC). Seven of them have only been registered, and only four have been declared, with the Valencia Norte station being the first Spanish station to be declared by Spanish law a site of cultural interest in 1983. It is important to note that in Spanish legislation, registered properties do not have the full legislative protection that declared properties do [30]. However, the fact that they are registered properties prevents demolition, although it does not protect them from small maintenance operations which, without judgement, can be highly destructive.

On the other hand, the catalogue of minimums of the Spanish Cultural Heritage Institute (IPCE) drawn up by the International Committee for the Conservation of the Industrial Heritage (TICCIH Spain) [26] includes another four stations not included in the previous register: E. Norte de Gijón, E. de Valladolid-Campo Grande and railway workshops, Monfrague station, and Bilbao Concordia station [31]. However, it should be noted that this document is not of a regulatory nature and therefore, at the state level with legal protection, only 11 stations are considered.

This article aims to provide an overview of the current state of conservation of the heritage of the complex by analysing a series of variables extrinsic to the station to assess its impact on the urban environment and a series of intrinsic variables to analyse the archi-

tectural aspects from the approach of the Vitruvian triad (*firmitas-utilitas* and *venustas*). It also includes the analysis of variables of heritage consideration so that comparisons and conclusions and prospective studies of the complex can be drawn.

2. Materials and Methods

A methodology of analysis is proposed based on a progressive approach to the object from extrinsic variables, of context, to intrinsic variables, of materiality or use [32–35].

The following figure (Figure 1) shows the methodology and the variables to be analysed for the study to be carried out.

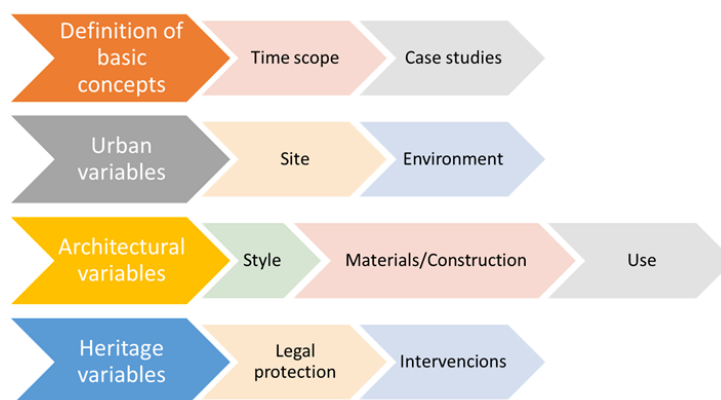


Figure 1. Methodology and variables. Own elaboration.

Beforehand, to limit the number of cases and focus on the object of study, the following premises are proposed:

- Selection of the passenger buildings of the main historic broad gauge railway stations in Spain. The historic stations were built by the former railway companies (Norte, MZA, Andalusian Company, etc.) between 1848 and 1929.
- They must have some degree of state protection or be recognised within the National Plan for Industrial Heritage (minimum catalogue). The protection of regional and local legislation is omitted as there is a large degree of dispersion between them.
- Selection of historical stations located in provincial capitals, main railway hubs, and border stations (search for group homogeneity by limiting to first or special category stations).
- At least all or part of the original passenger building must exist. The greater integrity of the station as a whole (presence of workshops, platforms, installations, etc.) and the maintenance of the original use, even if only partially, are valued.

The case of Zaragoza [36], a city that housed many stations, is excluded from the selection for the following reasons: the city still has the Norte station (Zaragoza Arrabal), built in 1861 and therefore considered historical, and the old Delicias station, on the Zaragoza-Caminreal-Teruel-Valencia line, built in 1932 and therefore outside the study period. The former has been transformed into a civic centre. It has no heritage protection, while the latter is still used as a railway station (command post for the Madrid-Zaragoza-Barcelona high-speed train line at the new station) and was declared a listed asset in the Aragonese legislation. It is outside the period under study and is excluded from the analysis.

The case of Bilbao-Concordia station is excluded because it is not a broad-gauge railway, and Monfrague station is excluded because it is not a first category station; its heritage interest lies in the fact that it is a railway settlement, the analysis of which is outside the scope of this study.

Thus, a selection of 11 stations remains, the essential characteristics of which are shown in the following table (Table 1).

Table 1. Selected stations. Basic characteristics. Own elaboration.

Railway St.	Province	City	Size of Population (INE 2021)	Date of Construction	Heritage Protection	Current Use Detailed
Gijón	Asturias	Gijón	268,896	1874	Catalogue PGOU	Railway museum
Vigo	Pontevedra	Vigo	293,837	1878	BIC/Catalogue PGOU	Not use (demolished complex)
Madrid Príncipe Pío	Madrid	Madrid	3,305,408	1882	Iniciate BIC	Main hall
Segovia	Segovia	Segovia	51,258	1884	Iniciate BIC	Railway use
Madrid Atocha	Madrid	Madrid	3,305,408	1892	Iniciate BIC	Railway use
Valladolid Campo Grande	Valladolid	Valladolid	297,775	1895	Catalogue PGOU	Railway use
Almería	Almería	Almería	200,753	1895	Iniciate BIC	Not used
Sevilla plaza de Armas	Sevilla	Sevilla	684,234	1901	Declared BIC	Commercial
Valencia Norte	Valencia	Valencia	789,744	1917	Iniciate BIC/Catalogue PGOU	Railway use
Toledo	Toledo	Toledo	85,449	1919	Declared BIC	Railway use
Canfranc	Huesca	Canfranc	599	1925	Declared BIC	Hotel (under construction)

3. Results

The methodology applied from the analysis of the external variables (urban variables), the internal variables (architectural variables), and, finally, the overall variables (heritage variables) allow us to show the results obtained partially for each group of variables. The most relevant results are presented for each of the levels considered.

To illustrate the spatial scope of a railway station, the image of the Seville-Plaza de Armas station before it was dismantled is included (Figure 2).



Figure 2. Seville Plaza de Armas railway station (1973–1986). Aerial view From Digital Phototeca. National Geographic Institute.

3.1. Urban Variables

The importance of implementing a station goes beyond its facilities, as it is an element that affects the urban environment and the city as a whole. The layout of the tracks is a structural element and the station itself, in addition to being essential infrastructure, is an element that acts like a polarising element [37–39].

The urban variables analysed (Figure 3), which are considered essential to be able to influence heritage consideration, are the following:

- Site in the city, concerning the original and current position about the city centre and the analysis of the original and current size of the plot occupied by the station and, if applicable, the destination of the disaffected land.
- Surrounding area, which includes the analysis of public space and/or surrounding facilities; the position concerning the structural network and the existence and survival of roads and their performance with respect to the city [40].

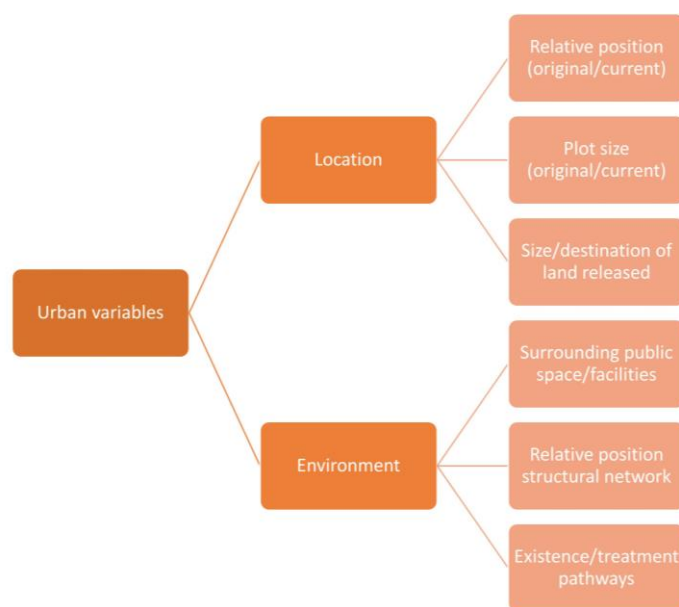


Figure 3. Urban variables analysed. Own elaboration.

About the relative position of the city at the time of its inauguration and at present, it can be seen that in 73% of the cases, sites were originally chosen on the edge or outside the consolidated nuclei of the cities as opposed to a low 9% that were built in a central position, but that, in the present situation, due to, among other things, the growth of the cities and the continued use of the railway, only 27% remain on the edge or 18% in a peripheral position as opposed to 55% that are currently built in a central place (Figure 4). This change of position relative to the size of the city occurs in cities with growth dynamics such as Valencia, Madrid, or Gijón. It is observed in the cases studied that the maintenance of railway activity favours the integrity and, therefore, the heritage conservation of the stations. However, in those stations where the railway use has disappeared, and the new use is not considered a priori, heritage conservation reduced to all, or part of the passenger building produces a loss of integrity and significance [41].

On the size of the plot occupied by the station compared to the original and current situation (Figure 5), the stations that occupied the most land correspond to the largest cities such as Madrid or Valencia and also to those relevant railway hubs such as Valladolid or Canfranc. In the cities with the most dynamic changes, such as Madrid, Valencia, or Seville, the greatest amount of railway land has been dismantled, this being particularly significant in the case of Seville Plaza de Armas, dismantled with only the passenger building remaining, reconverted into a shopping and leisure centre [42,43].

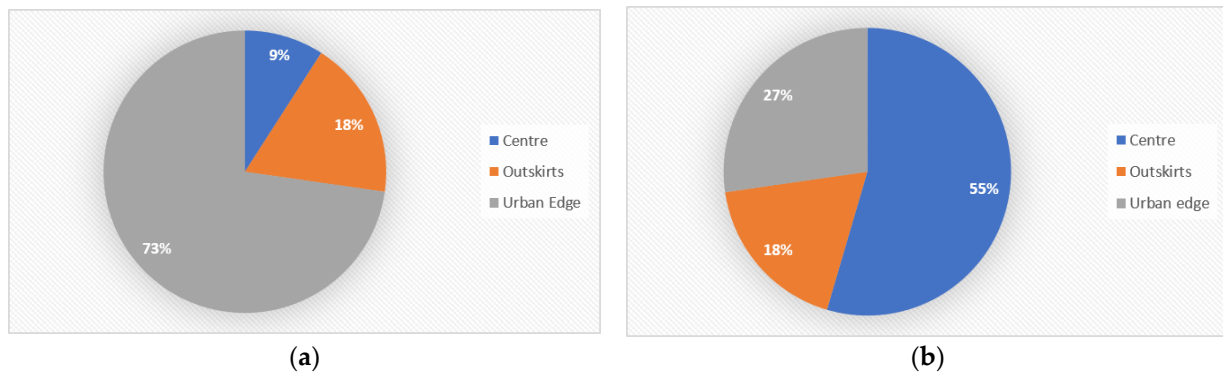


Figure 4. Graphs of the evolution of the relative position station-city: (a) original urban position; (b) current urban position. Own elaboration.

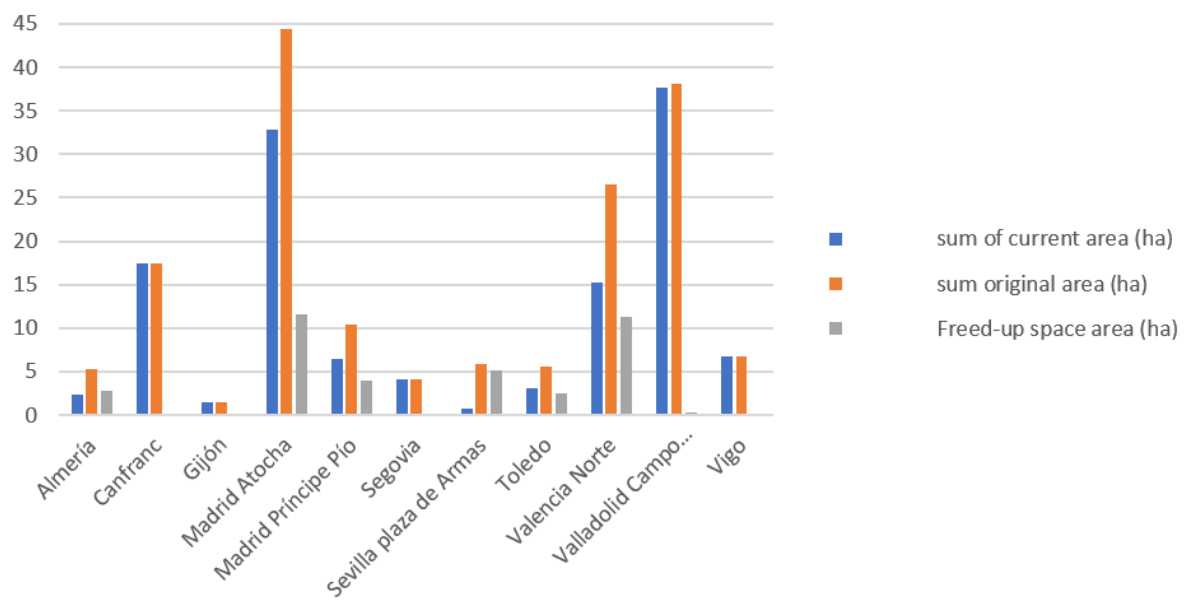


Figure 5. Original-current and released area stations. Own elaboration from National Geographic Institute (IGN) data (Iberpix display).

The use of the released land varies from private use in the central area (Madrid or Toledo) to public facilities or landscaping in the south (Seville or Almería) and in Valencia.

On the other hand, the implementation of the station is a clear urban conditioning factor, as has been extensively studied where, in addition to the large portion of land occupied by an activity considered a nuisance (fumes, noise, etc.), the conditioning of the layout of the structural network, the layout of the tracks, has traditionally been considered a “barrier” to subsequent urban expansion and development. However, track diversion or undergrounding operations are complex operations with a high economic cost, which is why, in 73% of the cases studied, the tracks remain in their original layout and position (Figure 6).

Regarding the structural network, in all cases, a structural axis or a high-density road is provided next to the station. The general case (64%) also involves the creation of pedestrian public space in front of the main façade of the passenger building (Figure 7).

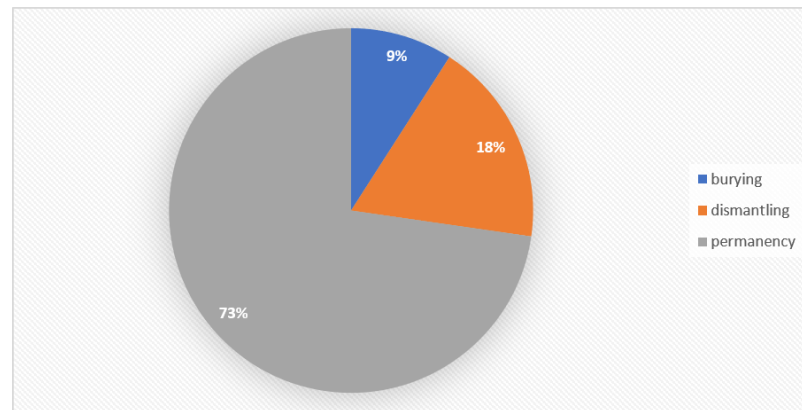


Figure 6. Urban action on railway tracks. Own elaboration.

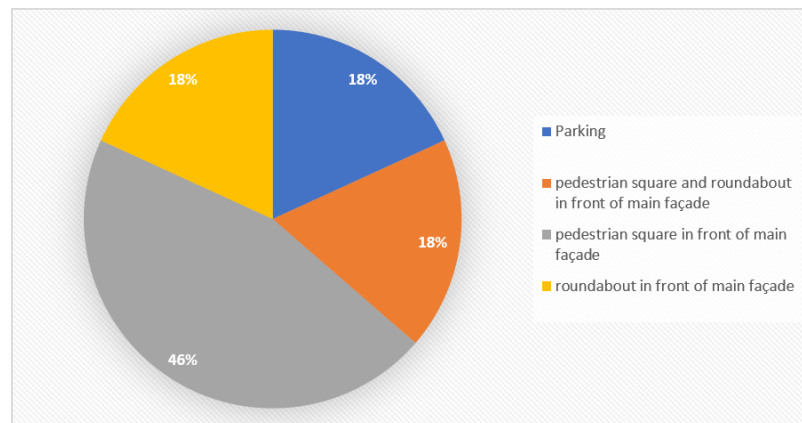


Figure 7. Station public space. Own elaboration.

3.2. Architectural Variables

The following graph (Figure 8) shows the architectural variables analysed, which are considered fundamental for heritage consideration to subsequently assess their degree of permanence and thus their degree of heritage conservation. These refer to the passenger buildings, since questions of style, typology, and composition would not apply to the rest of the facilities comprising the station (workshops, depots, etc.) whose value lies in representing the process of railway activity at a station rather than in the intrinsic value of the construction [44–46].

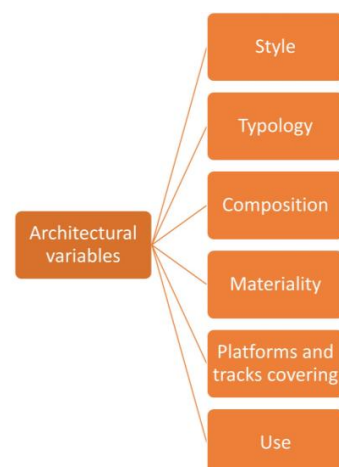


Figure 8. Architectural variables. Own elaboration.

Thus, the group selected represents all the styles existing in the historic Spanish stations, from the recurrent classicism inherited from the first stations to regionalisms such as neo-Mudejar (Toledo and Seville Plaza de Armas) or the secessionist modernism with rationalist overtones of the Valencian station [15,47]. It is possible to detect the stylistic unity of the stations of the Northern company where the corporate style was the Second French Empire (Madrid Príncipe Pío or Valladolid stations) [14]. (Figures 9 and 10).



(a)



(b)

Figure 9. (a) Príncipe-Pío railway station. (b) Canfranc International railway station. Own archive (2020).



(a)



(b)

Figure 10. (a) Toledo railway station. (b) Valencia-Nord railway station. Own archive (2017–2020).

Regarding the typologies, all the classic station typologies are represented, adopting the characteristic “U” of the terminus stations to those with one or two pavilions on one or both sides of the tracks, [13].

The composition is symmetrical in all cases except in the case of Valencia, where the asymmetry is very subtle and is not visible to the naked eye, and Toledo, where the existence of the tower attached to one side is the cause of the asymmetry. On the other hand, the stations in Galicia and Asturias emphasise the central body without side pavilions; the group of four stations in the North repeat the tripartite composition and Madrid Atocha, Seville Plaza de Armas, and Almería opt for side pavilions with the façade showing the steel and glass glazed front that encloses the large platform and track roof. The emphasis on access and the presence of the clock as the central motif of the composition are compositional characteristics repeated in all cases [18].

Regarding the materiality, it refers exclusively to that present in the main façade where the most distinctive and varied materials were used as well as featuring the most outstanding ornamental richness, and the roof of the passenger building as this is the part of the station where traditionally, heritage conservation falls. Thus, the exposed natural stone of the area in ashlar walls is characteristic of the stations of Galicia and Asturias; the

characteristic exposed brick of the North [15,46] with recesses, imposts, reinforcement of corners or plinths based on natural stone, and the slate mansard roofs with metal cresting is the materiality of the stations of Madrid Príncipe Pio, Segovia, and Valladolid Campo Grande; exposed brick with a variety of brickwork and with projections on the façade, typical of the Mudejar style, is present in the stations of Seville and, in eclectic styles such as Atocha or Almería [48], natural stone combined with brick and steel and glass, considered at the time “ignoble” materials for the façades of public buildings, are also used for the roofs of platforms and tracks. Regarding roofs, the most commonly used construction typology is the hipped roof with a tile-based finish, with the exception of the slate mansard roofs of Canfranc [49] or Valladolid [50].

The plastic aspect of the masonry, playing with the recessing or highlighting of pieces, or the type of joints, is rarely worked on, leaving these issues to the mouldings and window surrounds made of natural stone, generally superimposed on the walls, but not to a singular brick masonry craft. The same is true of the colour scheme, and in the case of the northern stations, the brickwork is a single colour. This way of working the brickwork is the antipode of stations of other companies such as Almería (of Southern Spain) or Toledo (of MZA), where decorations and chromatisms are carried out with the ceramic pieces themselves and the factory itself assumes part of the decoration. In the stations in the North, however, in no case did the brick take on the decoration, the structural function prevailing to the detriment of the ornamental part, a clear tendency at the beginning of the 20th century in buildings with exposed brickwork [46].

There were also differences derived from the station’s region, and these basic construction characteristics were adapted to the local way of doing things. The presence of different trades and the combination of materials stood out. The constructive-material innovation was in the large metal roofs, many of which were imported from French or Belgian workshops where, in many cases, a pattern of design and construction was repeated. The group analysed covers all the types of metal roofs used in stations (Dion, Polonceau, elliptical or articulated arches), although 6 of the 11 cases opted for platform roof canopies as the most economical solution. These are unique constructions, technologies, and construction typologies that are no longer in use, designed specifically to bridge the large spans and height required by the space of platforms and tracks of a first-class railway station. As a result, their loss is considerable in terms of the significance and heritage value of the stations.

Functional considerations (the functional distribution of historic stations with design premises such as separating arrivals from departures, establishing station services to provide a better service to passengers, locating the passenger service as close to the centre as possible, establishing different track levels, etc.) and use are also fundamental architectural variables for heritage consideration [7,51]. The following graph (Figure 11) shows that in 55% of the cases, the railway use prevails and therefore, all or part of the original functional distribution is maintained; in 18%, there has been a change of use, with the two cases included in the sample analysed being representative: on the one hand, the Gijón station, transformed into a railway museum of Asturias, which is a use linked to the railway and this contributes to maintaining the functionality and significance of the original station, and the Seville-Plaza de Armas station transformed into a leisure and commercial centre without any reference to the railway and with the total dismantling of the station except for the passenger building which acts as a container, as the original distribution has also been profoundly transformed. The selected sample also includes the most unfavourable case for heritage conservation, which is disuse, where the Vigo station reduced to its main façade is a paradigmatic case.

3.3. Heritage Variables

Before analysing the selected variables, it is necessary to determine that this heritage has certain peculiarities [52] that must be considered both to understand the general lack of collective heritage awareness, understood as elements of use, and for the interventions that are to be undertaken in this sense (Table 3).

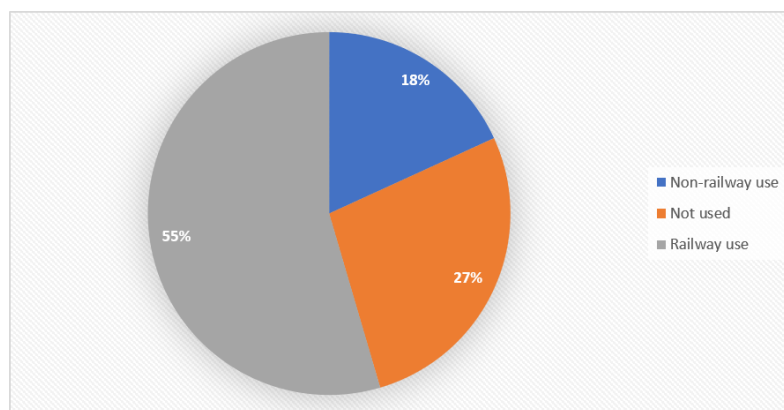


Figure 11. Current use stations. Own elaboration.

The following table (Table 2) contains the details of the architectural variables analysed.

Table 2. Architectural variables. Own elaboration.

Railway St.	Current Use	Style	Typology	Composition	Materiality	Tracks Roof
Gijón	Non-railway use	Classical	I	Central body symmetrical	Natural stone	Canopies
Vigo	Not used	Classical	I	Central body symmetrical	Natural stone	Canopies
Madrid Príncipe Pío	Railway use	North C. Style	I	Tripartite symmetrical	Faced brick-N. stone	Polonceau
Segovia	Railway use	North C. Style	I	Central body symmetrical	Faced brick-N. stone	Canopies
Madrid Atocha	Railway use	Eclectic	U	Lateral body symmetrical	Faced brick	Dion
Valladolid Campo Grande	Railway use	North C. Style	U	Tripartite symmetrical	Faced brick-N. stone	Polonceau
Almería	Not used	Eclectic	I	Tripartite symmetrical	Faced brick	Canopies
Sevilla plaza de Armas	Non-railway use	Neomudejar	U	Lateral body symmetrical	Faced brick	Tri-articulated arches
Valencia Norte	Railway use	Modernist	U	Tripartite no symmetrical	Rendering	Elliptical arches
Toledo	Railway use	Neomudejar	I	Tripartite no symmetrical	Faced brick	Canopies
Canfranc	Not used	North C. Style	II	Tripartite symmetrical	Rendering	Canopies

Table 3. Peculiarities/consequences of railway heritage. Own elaboration.

Peculiarities	Consequences
Large single-ownership land spaces in centrally located areas	Very attractive for speculation
Heritage composed of numerous elements and installations as part of the industrial process to be protected (railway activity)	Requires the establishment of clear prior criteria to allow for selection without diminishing meaning
Impossibility of comprehensive protection	Inventory required
Conservation of original use	Functional obsolescence and lack of economic profitability
Recent and industrial heritage	Low collective appreciation. No added “tradition” value
Heritage used on a daily basis	Low collective appreciation. Understanding that is far removed from heritage
Little legal protection	Gradual and silent losses
Ineffective legal protection	These are ensembles/itineraries/landscapes rather than monuments

The following figure (Figure 12) represents the heritage variables analysed, where legal protection (state, regional, and local) is essential as a starting point but is not in itself sufficient to guarantee interventions in line with heritage preservation or to guarantee the maintenance of significance. Nor does the protection of the element at various levels, as occurs in Valencia North (state and local), guarantee better protection or a greater number

of interventions. This aspect is particularly delicate concerning railway stations, since the protection, as shown below, ends up being of an isolated element, not of the station, with the consequent loss of meaning and, therefore, of the sense of preservation [53].

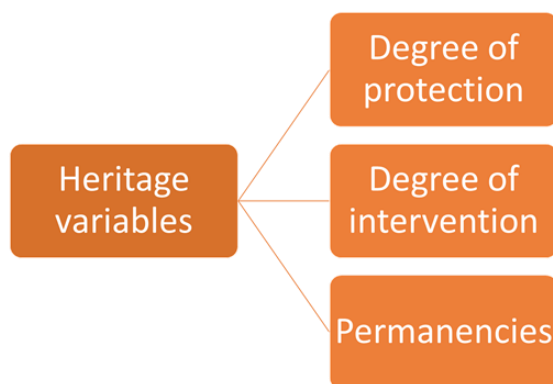


Figure 12. Heritage variables. Own elaboration.

About interventions, practically half of the stations analysed have partial interventions (Figure 13), which, in terms of heritage conservation, focus mainly on the maintenance of the passenger building, which remains in all the cases analysed except in Vigo (Figure 14) (4).

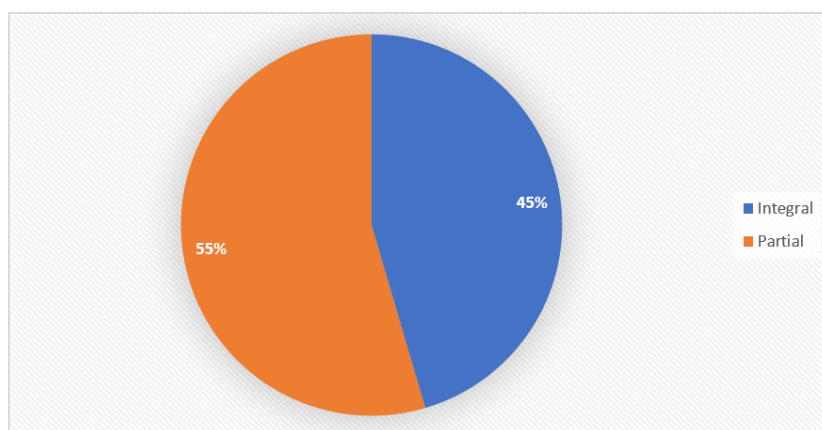


Figure 13. Degree of intervention. Own elaboration.

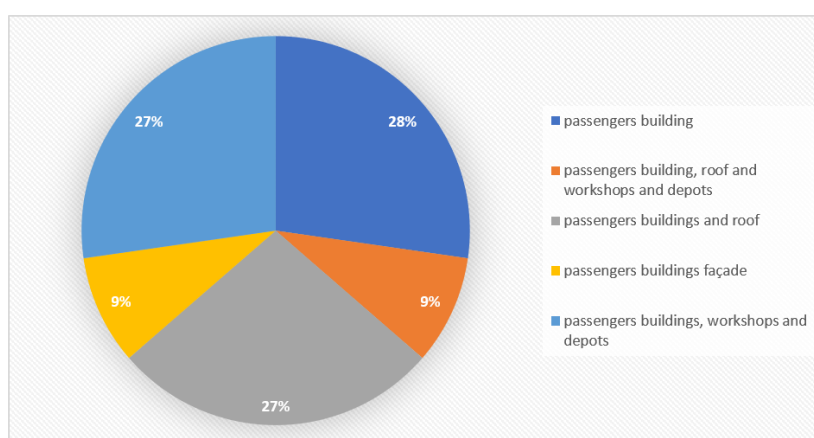


Figure 14. Permanencies. Own elaboration.

The case of Vigo, where only the main façade is preserved as a tapestry, is a clear example of the lack of correlation between what a railway station means and what is finally protected.

The following table (Table 4) shows the heritage variables analysed, where it can be seen that the degrees of integral intervention correspond to the stations where there has been a change of use and, in the rest, the partial protection actions carried out always reach the passenger building and, in particular, its façade.

Table 4. Heritage variables. Own elaboration.

Station	Composition	Materiality	Tracks Roof	Urban Site (Origin)	Urban Site (Current)	Source	Degree of Intervention	Permanencies
Gijón	Central Body symmetrical	Natural stone	Canopies	Peripheral	Central	PNPI Catalogue	Complete	Traveller Building
Vigo	Central Body symmetrical	Natural stone	Canopies	Urban edge	Peripheral	RGBIC	Complete	Facade
Madrid-P. Pío	Tripartite symmetrical	Faced brick Natural stone	Polonceau	Urban edge	Urban edge	RGBIC	Complete	Traveller building and tracks roof
Segovia	Central Body symmetrical	Faced brick Natural stone	Canopies	Urban edge	Urban edge	RGBIC	Partial	Traveller b. and workshops
Madrid Atocha	Lateral Bodies symmetrical	Faced brick	Dion	Peripheral	Central	RGBIC	Partial	Traveller building and tracks roof
Valladolid Campo Grande	Tripartite symmetrical	Faced brick Natural stone	Polonceau	Urban edge	Central	Catalogue	Partial	Traveller b. and workshops
Almería	Tripartite symmetrical	Faced brick	Canopies	Urban edge	Peripheral	RGBIC	Partial	Traveller Building
Sevilla plaza de armas	Lateral Bodies symmetrical	Faced brick	Tri-articulated arches	Urban edge	Central	RGBIC	Complete	Traveller building and tracks roof
Valencia Norte	Tripartite No symmetrical	Rendering	Elliptical arches	Urban edge	Central	RGBIC	Partial	Traveller building, tracks roof and workshops
Toledo	Tripartite No symmetrical	Faced brick	Canopies	Urban edge	Urban edge	RGBIC	Partial	Traveller B.
Canfranc	Tripartite symmetrical	Rendering	Canopies	Central	Central	RGBIC	Complete	Traveller b. and workshops

4. Discussion

The historic stations were landmarks that shaped the structure of the cities, and both the large surface area occupied, and the layout of the tracks represent dynamic industrial landscapes as the cities evolved and grew, the integration of which is essential for the conservation of meaning. The complete dismantling operations of the stations except for the passenger building, as shown in some of the cases studied, means a significant loss of meaning and, therefore, a sense of preservation. However, the new central locations and the land value show a consolidated tendency to keep the minimum for less land occupation. The most extreme case is the exclusive conservation of the main façade of the historic Vigo station.

Concerning the architectural variables, the study carried out shows that the elemental composition, style, and materiality are maintained, especially on the main façades of the passenger buildings. However, as can be seen in the interventions carried out at Valencia station, small changes are introduced in the materiality (replacement of skirting boards or glass), which are not in keeping with the original materiality and which subtly lead to the loss of heritage conservation. The following figure shows the cycle of heritage conservation where these apparently insignificant interventions, unrelated to the original, produce a gradual degradation and loss of heritage value (Figure 15).

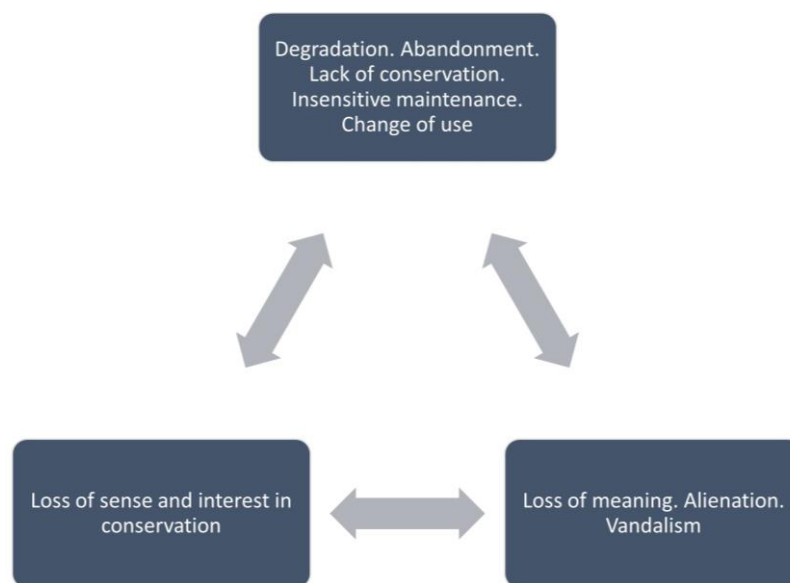


Figure 15. Heritage conservation cycle. Own elaboration.

Regarding the heritage issue, 100% of the cases analysed fall into the category of monument without any consideration or relationship with the industrial landscape that the stations represent, and they must be reconsidered. Nor, in the few cases where the stations have been declared an asset of cultural interest, is there any action taken in its protected environment.

A preliminary analysis of the different existing legislation (Historical Heritage Act and its regional counterparts) shows a lack of consensus both in basic definitions and in the naming of protection figures and the relevance given to railway stations and to industrial heritage in general.

5. Conclusions

The lack of protection of railway stations is significant. The number of stations analysed represents a representative sample of railway stations with some degree of legal protection (state, regional, local). However, the analysis carried out shows that the legal protection that the registration and even the declaration of an Asset of Cultural Interest (BIC) provides for railway stations is not sufficient due to their intrinsic complexity as a heritage object detailed in the article. Nor does the complex legislation on the matter, with the three levels (state, regional, and local) help preservation, being necessarily a consensus and a simplification of regulations.

In addition, the lack of prior selection criteria and the lack of inventories that provide an overall view and allow for the comparison of cases means that unique stations such as Huelva or Cadiz are not included, to the detriment of their heritage consideration. However, we should also warn of the danger of static registers/inventories. Revision and updating of the periodic inclusion criteria are considered essential.

As this is a heritage site with its peculiarities, including the large occupation of land by a single owner in positions that are generally very attractive for speculation (city centres), the maintenance of its use is essential for the preservation of the heritage of the railway station as such, as a conglomerate of buildings and facilities, with different degrees of representativeness and functionality, generating a characteristic urban landscape.

Likewise, more than the preservation of the façades, where the case of Vigo is a very significant example of the lack of relationship between the concept of heritage conservation as conservation of the façade or historical monuments as isolated entities and what it means to conserve a railway station, the conservation of the large roofs, the construction technologies and materials used in them, the landscape and the route between facilities

that would allow the meaning of the railway activity to be transmitted and, therefore, to understand the meaning of what a railway station is, should be considered.

In none of the cases studied are there any “building books” or manuals to guide any of the actions, from maintenance to those of greater importance, which are nevertheless essential for maintaining the heritage values of the building over time.

Finally, inventories with regular reviews and updates as well as maintenance and the application of preventive conservation criteria are essential for the meaningful conservation of railway stations.

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