

Reuse of vacant agro-industrial buildings. The case of the public slaughterhouses in Spain

José M. Fuentes*, Ana I. García, Carlos González-Montellano, Eutiquio Gallego, Francisco Ayuga

BIPREE Research Group, Universidad Politécnica de Madrid, ETSI Agrónomos, Avda Complutense s/n, 28040 Madrid, Spain

*Corresponding author. E-mail: jm.fuentes@upm.es

Abstract

Nearly 3000 slaughterhouses (74% of them public facilities) were built in Spain during the last decades of the nineteenth century and the first half of the twentieth century. The need to comply with new technical requirements and regulations on the hygiene of the meat passed in the 70s and the gradual replacement of public facilities by larger and more modern private slaughterhouses have subsequently led to the closure and abandonment of many of these buildings. Public slaughterhouses generally consisted of several single-storey and open-plan buildings located around a courtyard. Although originally they were preferably located on the outskirts of the towns, many slaughterhouses are now placed inside the built up areas, due to the urban development.

The present work aims to contribute to a better understanding of these agro-industrial buildings and to provide ideas for their conservation and reuse. A review on the historical evolution and the architectural features of the public slaughterhouses in Spain is presented and different examples of old vacant slaughterhouses reused to accommodate libraries, offices, community centres, exhibition halls or sports centres, among others, are shown in the paper.

Key words: reuse; vacant buildings; agro-industrial heritage; slaughterhouses; Spain.

1. Introduction

In the last decades of the nineteenth century and the first half of the twentieth century nearly 3000 slaughterhouses were built in Spain, most of them publicly-owned, in order to improve the hygienic conditions of the meat and facilitate its marketing (Díez, 1978). Most of them were relatively small buildings, with a production capacity below 100 tons of meat per year.

As a result of technical and health requirements imposed on the meat industry in the 70s, most of the town slaughterhouses in Spain lost their original use and remain vacant (Fig. 1). Some others have been demolished or reused as libraries, community centres, exhibition halls or sports complexes.



FIGURE 1: Two examples of municipal slaughterhouses in Spain. Left: Matadero Público in Orgaz (Toledo). Right: Matadero Municipal in Navalperal de Pinares (Ávila).

This paper aims to contribute to a better understanding of these agro-industrial buildings and to provide ideas for their conservation. A review on the historical evolution and the architectural characteristics of the public slaughterhouses in Spain is presented and different examples of old vacant slaughterhouses reused are shown.

2. Material and methods

This work is mainly based on a document search on the historical evolution of the municipal slaughterhouses in Spain. From the information gathered and the statistical data extracted from different publications, an overview of the number of existing buildings, their geographical location and production capacity of these buildings is provided. An analysis of the architectural characteristics and building techniques has also been tackled by visiting and studying different municipal slaughterhouses. The information presented could serve as a basis for developing further studies on the conservation, rehabilitation and reuse of public slaughterhouses and/or other agro-industrial buildings.

3. Results and discussion

3.1. The development and historical evolution of the public slaughterhouses in Spain

In the second half of the nineteenth century several legislative attempts were carried out in order to regulate the slaughtering of livestock and meat trading in Spain (Sanz, 2006). The pursued objective was to follow the example of France, whose major cities have one or more municipal slaughterhouses where the condition of meat was examined and this product was supplied to the population (Young, 2008).

However, it was in 1918 when the *Reglamento General de Mataderos* (Royal Order of 5 December 1918) established that every Spanish town of over 2000 inhabitants should have a public slaughterhouse in order to prevent illegal slaughtering, to control the quality of the meat and to guarantee the supply of meat to the population. The difficulties for preserving meat and the lack of refrigerated transport systems caused that slaughterhouses were located close to the consumption centres, where livestock were transported (Briz, 1979).

In the following decades, construction of slaughterhouses became widespread in Spain's towns, leading to a census of more than 2900 slaughterhouses in 1974, with an approximate production capacity of 2.5 million tons of meat per year. The vast majority of these buildings (74.1%) were publicly-owned facilities with a meat production capacity of 1.5 million tons per year, some 62% of the country's slaughtering capacity (Díez, 1978). A classification of the Spanish municipal slaughterhouses according to their size in 1974 is shown in Table 1.

TABLE 1: Classification of the municipal slaughterhouses in Spain according to their size in 1974.

Production capacity (tons per year)	Number of municipal slaughterhouses	Percentage
Until 100	1132	52,3
101 – 500	598	27,6
501 – 1000	230	10,7
1001 – 5000	115	5,3
5001 – 10000	78	3,6
10001 – 20000	7	0,3
20001 - 40000	5	0,2

Private slaughterhouses with cold-storage rooms and some other advanced technologies and a meat production capacity far superior to public slaughterhouses began to gain importance in Spain in the 60s. In the period between 1963 and 1974, the number of private slaughterhouses grew by 274% and their production capacity increased by 131%. Simultaneously, meat-cutting plants also began to be installed as intermediary establishments between the slaughterhouses and the butchers (García, 1981).

New technical and sanitary requirements imposed on Spanish slaughterhouses in the decade of the 70s (i.e. need for a perimeter fence, wastewater treatment facilities, facilities for washing and disinfection of vehicles, covered areas for the animals, lazaretto, cold-storage rooms or a crematory, among others), following the advice provided by international organizations such as the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and the World Organization for Animal Health (OIE), led to obsolescence and subsequent closure of many small-sized municipal slaughterhouses (Segrelles, 1990).

After a series of royal decrees extending the period to adapt the existing slaughterhouses to the new demands, in 1984, the Ministry of Agriculture of Spain passed a General Slaughterhouses Plan (Royal Decree 800/1984), designed to reduce the number of municipal slaughterhouses and to promote the adaptation of those ones in a best condition to be used as regional slaughterhouses (Guitian, 1984). So, in 1986, only 873 public slaughterhouses were still operating in Spain, meaning a reduction of some 59.7% in comparison with the 2,165 buildings existing in 1974.

The problems of Spanish municipal slaughterhouses were still further complicated after the accession of Spain to the EEC and the subsequent adaptation of national laws with Community regulations (Directive 64/433/EEC). In January 1995, only 154 Spanish slaughterhouses complied with the EEC regulations, 508 were being adapted and more than 1100 small rural abattoirs were doomed to an imminent closure (Pascual, 1995). Consequently, many public slaughterhouses have been forced to close for the last 15 years. At present only 703 cattle-sheep-pigs slaughterhouses and approximately 200 poultry & rabbits slaughterhouses operate in Spain, much of which have been built in recent years or profoundly remodelled (AICE, 2009).

3.2. Plan design and construction features of Spanish slaughterhouses

Most of the municipal slaughterhouses built in Spain in the first half of the twentieth century consisted of a series of buildings or industrial pavilions located around a courtyard, where the different activities (slaughtering, bleeding, skinning, evisceration, cleaning and shredding of the carcasses) were carried out. A quite common design consisted of two lateral pavilions, one of them devoted to the slaughtering and processing of the carcasses of cattle and sheep and the other one devoted to pigs (García and Ayuga, 1993). Reception facilities and stables for livestock were usually located at both sides of the industrial pavilions with direct accesses from the road.

In those slaughterhouses built after 1950, it is common to find one or more cold-storage rooms used to preserve the carcasses. The slaughterhouses built prior to that year often lacked these facilities, replacing them by specific pavilions where the carcasses were hung while drying and cooling down. In the early 80s some other constructions were occasionally incorporated to comply with new health and hygienic requirements, such as an under-covered slaughtering area, rooms for offal, guts and waste, crematory, changing rooms and toilets, among others. Fig. 2 shows the typical plan design of a Spanish municipal slaughterhouse of the early twentieth century.

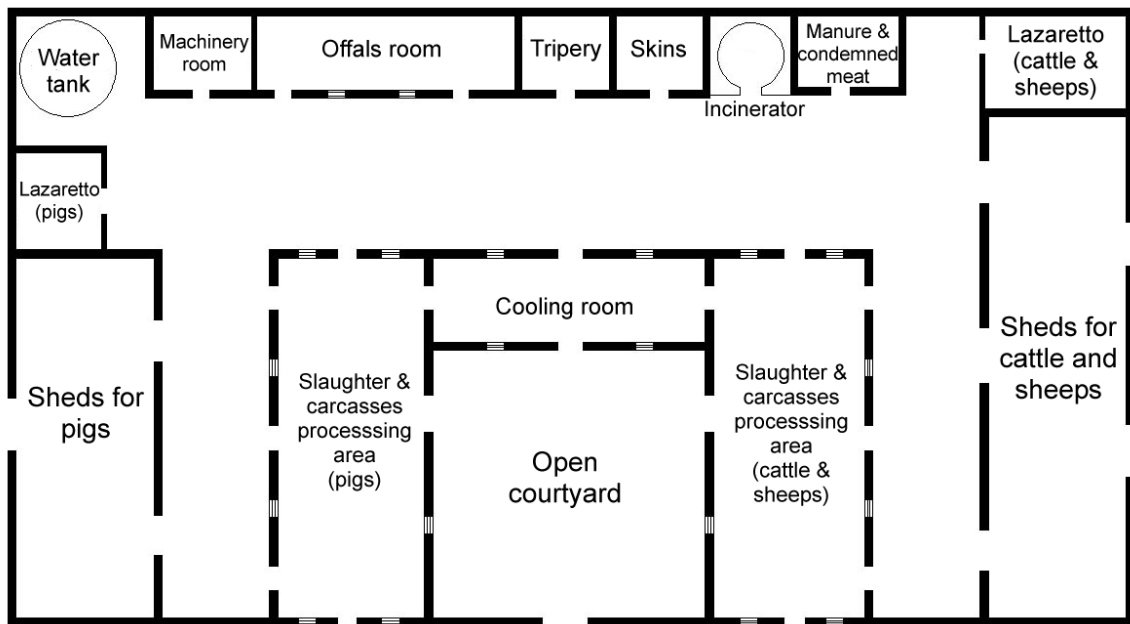


FIGURE 2: Typical plan design of a municipal slaughterhouse.

The structural system was commonly based on load-bearing walls made of stone masonry and/or brick and pillars made of cast iron. As well as being used in walls, bricks were also used in other traditional ways such as the making of floors or to reinforce rammed earth or rubble walls (either in horizontal lines or vertical pillars). Roofs were usually built with trusses of wood or steel. The covering material most commonly used was the ceramic tile supported on wooden or ceramic boards. Flat ceramic tiles supported by small wooden sleepers were widely adopted, although Arabic tiles were also occasionally used. In the industrial areas where carcasses were processed terrazzo floors were habitually used, as this material is easier to be cleaned. For the same reason, the walls in these areas were covered with white glazed ceramic tiles up to 2.5 or 3 meters height. Doors and windows were usually built with steel.

Municipal slaughterhouses are essentially medium-sized and open-plan buildings with good prospects for being reused. Although sometimes the urban development has absorbed these buildings within the town centres, originally they used to be located on the outskirts of towns, to prevent bad odours and to facilitate the access. Non-built areas in the plots where the slaughterhouses are located can be used at present to accommodate gardens or parks.

3.3. Examples of reuse initiatives for public slaughterhouses in Spain

Making of the industrial heritage a profitable product, not only from the cultural standpoint, but also economically, must be a priority in order to guarantee its conservation (Cano 2007). Reusing old vacant slaughterhouses may offer viable and promising opportunities to save construction materials, to minimize the economic and energy costs of demolition and waste management and to retain traditional elements in the appearance of villages. For the last years some of the abandoned municipal slaughterhouses in Spain have been remodelled by municipalities or private promoters for different purposes (Fig. 3).

Several old slaughterhouses all across the country have been reused to accommodate cultural and arts centres. Paradigmatic examples are the *Matadero of Madrid*, a set of 48 buildings built between 1908 and 1928, the former municipal slaughterhouse in Lerida, renovated in 1998 to house the *Municipal Theatre El'Escorxador*, the former municipal slaughterhouse of Huesca, founded in 1905 and recently restored to accommodate a cultural centre, an exhibition hall, a theatre and a concert hall or the old slaughterhouse of Logroño,

which now house 'La Casa de la Ciencia', a didactic area and museum for the dissemination of science and technology. In *Seville, Teruel, Castro Urdiales (Cantabria), Alagón (Zaragoza)* or *Felanitx (Balearic Islands)* old municipal slaughterhouses have been reused as music conservatories or dance centres.

In some other cases, municipalities are now using old slaughterhouses as swimming pools or sports centres (*Antiguos Mataderos Municipales of Valencia and Alcoy (Alicante)*), restaurants (*Antiguo Matadero of Muskitz in Navarra*), classrooms and training centres (*Mataderos Municipales de Ecija (Sevilla) and Medina Sidonia (Cádiz)*), wild animals recovery and/or Nature education centres (*Mataderos de Mengibar (Jaén) and Lorenzana (Lugo)*) or different municipal services such as public libraries, archives, municipal offices and/or warehouses (*Onda (Castellón), Mora (Toledo), Concentaina (Alicante) or Villa del Prado (Madrid)*, among some others).



FIGURE 3: Different examples of old slaughterhouses reused to accommodate new activities. a) Matadero municipal of Madrid, b) Matadero Municipal of Lérida, c) Matadero municipal of Valencia, d) Madero of Ciempozuelos (Madrid), that is going to be reused as a museum, e) Matadero of Castro Urdiales (Cantabria) f) Matadero municipal of Muskitz (Navarra), reused as a restaurant.

Although reuse is, in general, the best option to preserve this agro-industrial heritage, particular attention should be paid in order to safeguard the particular character of these buildings and their most valuable architectural features. The urban spaces occupied by the old municipal slaughterhouses are certainly of interest to real estate speculators, who often tend towards building new constructions rather than adapting to the restrictions imposed by an existing building. The protection of the most significant specimens as 'Listed buildings' or 'Places of Cultural Interest', the starting of public campaigns to raise public awareness of the cultural value of the old industrial buildings, the preparation of restoration guides and the implementation of public subsidies provide some other means for guaranteeing the successful reuse of this agro-industrial heritage.

4. Conclusions

The work presented here aims to contribute to a better understanding of Spanish municipal slaughterhouses and to provide ideas for their conservation. The main conclusions are summarized below:

1) In the last decades of the nineteenth century and first half of the twentieth century over 2100 municipal slaughterhouses were built in Spain to improve the hygienic and sanitary conditions of meat.

2) Although there could be some differences in the plan form and/or construction techniques, most of the municipal slaughterhouses built in Spain in the first half of the twentieth century consisted of several open and single-storey pavilions located around a central courtyard. The structural system was commonly based on load-bearing walls made of stone masonry and/or brick and pillars made of cast iron. Roofs were usually built with trusses of wood or steel. The covering material most commonly used was the ceramic tile supported on wooden boards or ceramic.

3) The increasing technical and sanitary requirements for meat industries in Spain in the 70s and 80s led to the closure and subsequent replacement of a vast majority of the old municipal slaughterhouses by larger and more modern private facilities.

4) The preservation of the built heritage is expensive and requires sustainable solutions. The paper presents different examples of municipal slaughterhouses reused all over Spain for different purposes. Nevertheless, although reuse is generally a good option for the long term preservation of this agro-industrial heritage, particular attention should be paid in order to safeguard the particular character of the buildings and their most valuable architectural features.

References

AICE (2009). El sector cárnico en España. Madrid: Asociación de Industrias de la Carne de España. Available on-line at: http://www.anice.es/v_portal/apartados/apartado.asp?te=7 (Last accessed: 25-04-2012)

Briz, J. (1979). Anotaciones a los mercados y flujos ganaderos en el vacuno para carne, *Revista de Estudios Agrosociales*, 106, 71-99.

Cano, J.M. (2007). La Fábrica de la memoria. La reutilización del Patrimonio Arqueológico Industrial como medida de conservación. *Antiquitas*, 18-19, 265-272.

Díez, E. (1978). Número, localizaciones y tamaños óptimos de mataderos en Galicia, Madrid: Instituto Nacional de Investigaciones Agrarias.

García A.J. (1981). Mataderos públicos versus mataderos privados. Un intento de aproximación. *Revista Agricultura*, 592, 881-887.

García E. & Ayuga, F. (1993). *Diseño y construcción de industrias agroalimentarias*. Madrid: Mundiprensa.

Guitian J.J. (1984). El Plan General Indicativo de Mataderos: su génesis y desarrollo, *Revista de Estudios Agrosociales*, 128, 127-134.

Pascual F. (1995). Tiempo de cambios, *Distribución y Consumo*, 5 (21), 118-121.

Sanz, G. (2006). Perspectivas de historia de la seguridad alimentaria. Entre la ley y la práctica social de la inspección 1855-1923. *Revista Española de Estudios Agrosociales y Pesqueros*, 212, 81-118.

Segrelles J.A. (1990). *La ganadería industrial en España: cabaña porcina y avicultura de carne*, PhD. Thesis, Universidad de Alicante.

Young P. [Ed.] (2008). *Meat, modernity, and the rise of the slaughterhouse*. Lebanon (USA): University Press of New England.