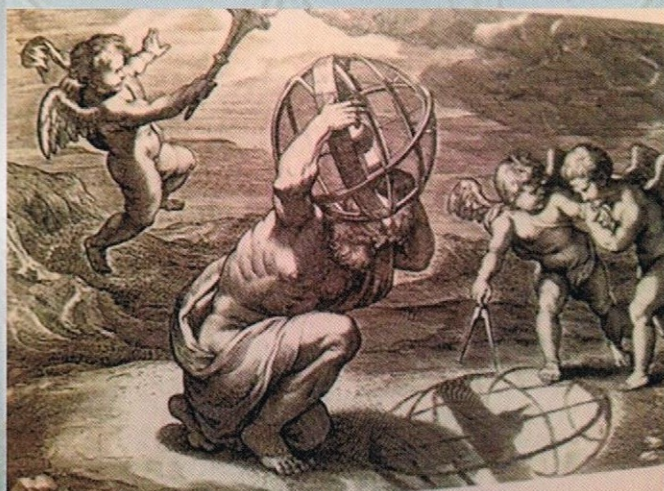


Modernity, Frontiers and Revolutions

ϕ
phi[©]
Proportion Harmony Identities



Chief-Editors:
Maria do Rosário Monteiro
Mário S. Ming Kong

Co-Editor:
Maria João Pereira Neto

PHI (Book Series)

ISSN Print: 2161-3907

ISSN Online: 2639-0205

Series Editors

Mário S. Ming Kong

CIAUD – FAUL, Lisbon School of Architecture, Lisbon University, Lisbon, Portugal

Maria do Rosário Monteiro

Faculdade de Ciências Sociais e Humanas, Universidade NOVA de Lisboa

PROCEEDINGS OF THE 4TH INTERNATIONAL MULTIDISCIPLINARY CONGRESS (PHI 2018),
3-6 OCTOBER 2018, S. MIGUEL, AZORES, PORTUGAL

Modernity, Frontiers and Revolutions

Editors:

Maria do Rosário Monteiro & Mário S. Ming Kong

CHAM, FCSH, Universidade NOVA de Lisboa, Lisbon, Portugal

CIAUD-FA ULisboa, Lisbon, Portugal

Co-editor:

Maria João Pereira Neto

CIAUD-FA ULisboa, Lisbon, Portugal

CHAM, FCSH, Universidade NOVA de Lisboa, Lisbon, Portugal



CRC Press

Taylor & Francis Group

Boca Raton London New York Leiden

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

A BALKEMA BOOK

CRC Press/Balkema is an imprint of the Taylor & Francis Group, an informa business

© 2019 Taylor & Francis Group, London, UK

Typeset by V Publishing Solutions Pvt Ltd., Chennai, India

All rights reserved. No part of this publication or the information contained herein may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, by photocopying, recording or otherwise, without written prior permission from the publisher.

Although all care is taken to ensure integrity and the quality of this publication and the information herein, no responsibility is assumed by the publishers nor the author for any damage to the property or persons as a result of operation or use of this publication and/or the information contained herein.

Published by: CRC Press/Balkema
Schipholweg 107C, 2316 XC Leiden, The Netherlands
e-mail: Pub.NL@taylorandfrancis.com
www.crcpress.com – www.taylorandfrancis.com

ISBN: 978-0-367-02397-3 (Hbk)
ISBN: 978-0-429-39983-1 (eBook)

19th century industrial architecture related to the "olive grove revolution" in the province of Jaén, Spain

Sheila Palomares Alarcón

HERITAS PhD, Heritage Studies, CIDEHUS, University of Évora, Évora, Portugal

ABSTRACT: The image of olive grove monoculture that characterises the province of Jaén, and motivated the proposal to include "The olive grove landscapes of Andalusia"¹ on the UNESCO Tentative Lists, is a landscape forged mostly from the second half of the 19th-century onwards when the change from polyculture to olive grove monoculture began.

This transformation had various consequences for agricultural production, economy, society..., and also for the industrial architecture related to the production of olive oil. On the one hand, there were several "cortijos", "haciendas" or "caserías" that had been mainly focused on the production of grain and started producing olive oil, leading to the reuse of the existing facilities. On the other hand, this "olive grove revolution" (the expression we symbolically chose to refer to this stage of economic change in this paper) contributed to the opening of new olive oil factories that introduced the most significant technological advances of the time from the second half of the 19th-century to the first decades of the 20th-century and that, sometimes, involved stakeholders of different nationalities.

This paper aims to analyse, focusing on case studies, the influence of the "olive grove revolution" on the 19th-century industrial architecture in the province of Jaén (Spain) in a comprehensive way, i.e., considering its historical, economic and technological context.

Keywords: Industrial architecture, 19th-century, olive oil factories, industrial heritage, Jaén (Spain)

1 INTRODUCTION. THE "OLIVE GROVE REVOLUTION"

The image of the olive grove monoculture that characterises the province of Jaén, and motivated the proposal to include "The olive grove landscapes of Andalusia" on the UNESCO Tentative Lists, is a landscape forged mostly from the second half of the 19th-century onwards.

According to the description made by Dean Mazas² in the late 18th-century, the fields of the province of Jaén "overlooked a vast expanse of Countryside, Olive Groves, Vineyards, Vegetable Gardens, and mountains" (Martínez de Mazas, 1794, p. 301) where the cultivation of wheat and barley was predominant. However, after the first Spanish confiscation ("Confiscation of Godoy", in 1798) there was a period, during the first half of the 19th-century (reinforced by the "Confiscations

of Mendizabal", in 1836, and the "Confiscations of de Madoz", in 1855), in which there were significant changes in the agricultural sector in the province of Jaén related to the ownership of the land and the social structure: the number of owners who belonged to the agrarian bourgeoisie increased, as well as the number of owners who were former tenants of lands owned by the nobility or the church, and the number of traders, officials or industrialists who invested their money in confiscated estates.

In this context, and following the fall in the price of grain occurred after 1872 (Bernal, 1979, p. 121), olive grove became the cultivation of choice of the new owners, thanks to the sales opportunities it offered, and olive groves began expanding in the first quarter of the 19th-century. However, the trend towards monoculture only became more evident in the period between 1830 and 1881 (Garrido, 2007).

According to Mariano Serra, in 1875 olive cultivation was rapidly expanding. Despite the crisis that affected the olive-growing sector in the late 19th-century, the agricultural entrepreneurs improved their holdings and the quality of their products to remain competitive in the world market. (Zambrana, 1984) In this period, the mechanization process for the production of olive oil stabilized, the direct

1. Together with other areas of the provinces of Córdoba, Granada, Málaga and Cadiz. UNESCO. Retrieved from <http://whc.unesco.org/en/tentativelists/6169/>.

2. Dean Mazas, according to D. Manuel Muñoz y Garnica was a "creative and reforming genius" who strived to reform and improved traditions in the province of Jaén (Muñoz, 1857, p. 47).

exploitation of lands increased significantly, as did the planting of olive groves, continuing along the path of monoculture that began to consolidate in the 20th-century, with the so-called "golden age of the olive grove" during the first thirty years of the 20th-century (Infante, 2012).

The "olive grove revolution" (the expression we symbolically chose to refer to this stage of economic change in this paper), in addition to triggering a far-reaching change in agricultural production, society or economy, was also a phenomenon that fostered a transformation in the landscape of the province of Jaén and turned it into a unique territory, as we can see today³.

This paper aims to analyse, focusing on case studies, the influence of the "olive grove revolution" on the 19th-century industrial architecture in the province of Jaén (Spain) in a comprehensive way, i.e., considering its historical, economic and technological context.

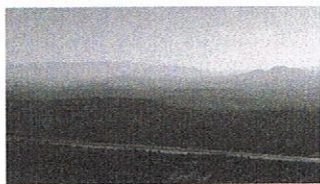


Figure 1. Landscape. Baeza (Spain). Author: Sheila Palomares Alarcón. 2014.

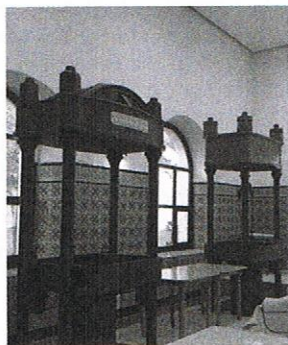


Figure 2. Hydraulic press. Museum of Olive Oil. Hacienda La Laguna in Puente del Obispo, Baeza. (Spain). Author: Sheila Palomares Alarcón, 2014.

3. Despite the fact that during the first seventy years of the 20th-century grain was still a traditional cultivation, due to the interventionist policy imposed during the period of Franco's regime, the growth of olive grove plantations was promoted via the implementation of irrigation systems, a decision that is still being pursued today and that fostered the consolidation of this monoculture (Palomares, 2016).

To pursue this research work we carried out a thorough bibliographic and archival search, field-work and on-site analysis of the results.

2 ARCHITECTURES RELATED TO THE PRODUCTION OF OLIVE OIL IN THE PROVINCE OF JAÉN: CASE STUDIES

The "olive grove revolution" had various consequences for the industrial architecture associated with the cultivation of olives, as its primary purpose was to meet the formal needs required to develop the production of olive oil.

One of the technological advances brought about by the Industrial Revolution was the invention of the hydraulic press, by Mr. Joseph Bramah, who patented it in 1795. Initially, this machine was used to press paper or fabric and, therefore, reduce its volume. However, in Spain, it was used for the first time to press olives, as it was introduced for this purpose by the entrepreneur D. Alvear y Ward in Montilla (Córdoba), in 1833 (Alvear y Ward, 1834), thus revolutionising pressing in this country.

This new system, which quickly replaced beam presses, tower presses, etc., allowed producing olive oil more rapidly, meaning that the time lapse between picking and processing the olives was shorter and, thus, improving the quality of the olive oil.

Since then, its use was extended to other factories and conditioned their architecture because, despite taking up less space, this new pressing system required an energy source to be activated; initially, energy was generated from steam, so the new olive oil factories started building brick chimneys⁴ to carry off smoke.

In this context, there were different "cortijos"⁵, "haciendas"⁶ and "caserías"⁷ that had been mainly

4. The reason for a brick chimney: The industrial chimney, associated in its inception to a steam engine, built from an easy-to-use and cheap material—bricks—is a hollow tube with a variable section which fulfils two functions; on the one hand, the hygiene-related function of expelling smoke at a sufficient height to avoid harm and, on the other hand, the economic function of increasing air intake to promote combustion, reducing fuel costs (López Patiño, 2013, p. 17).

5. A "cortijo" is "a detached building, in the middle of the countryside, comprising houses for farmers and the facilities required for farming arranged next to them" (Florida, 1996, p. 178 quoting Torres Balbás, 1930).

6. Agro-industrial complex built in latifundia where, in this case, olive tree growing is the primary activity, which produced olive oil and was the second residence of the owners (Florida, 1996, p. 110).

7. Large or small property, with vineyards or olive groves and a house (Berges y López, 1997, p. 16 quoting Madoz, 1847).

focused on the production of grain and started producing olive oil using the new technology, leading to the reuse of the existing facilities. On the other hand, the new economic context that resulted from the plantation of olive groves contributed to the opening of new olive oil factories that, sometimes, involved stakeholders of different nationalities.

As representative examples of these two situations, we chose the "Hacienda La Laguna" olive oil factory and the "La Esperanza Cubana" olive oil factory.

2.1 "Hacienda La Laguna"⁸ olive oil factory in Puente del Obispo, Baeza

In 1641, the Society of Jesus bought the land where we find "La Laguna" and, in 1648, built a "cortijo" – "la cortijada de La Laguna" (Madoz, 1847, p. 204) – and planted the land. The Jesuit order owned this property until 1767 when King Charles III expelled them, and the "Cortijo" was taken over by the House of Alba. Afterwards, following the "Confiscation of Mendizabal (1836–1837)", the property was bought by José Manuel Collado, Marquis of Viana and, later on, Marquis of La Laguna, who asked the Polish engineer Tomasz Franciszek Bartmanski⁹ to modernise the latifundium. That modernisation involved the plantation of 100,000 olive trees and the implementation of a modern irrigation system supplied by Laguna Grande,¹⁰ a network of channels that flowed into an aqueduct,¹¹ as well as three water-powered olive oil mills.

Additionally, he built an olive oil factory and an olive oil cellar (1846–1848), which reached their maximum splendour in the 19th and early 20th centuries. Unfortunately, we were unable to access the original plans, because the "La Laguna" archive disappeared in the early 21st-century. However, the complex remained virtually unchanged until the architect Luis Berges Roldán designed the "Olive



Figure 3. Museum of Olive Oil. Hacienda La Laguna in Puente del Obispo, Baeza. Author: Sheila Palomares Alarcón. 2014.

Grove Museum Project" for the old olive oil factory¹² (A.H.M.B/RPI/c143), which provides interesting and valuable information on how the olive oil factory used to operate.

It was a rectangular building with two floors (lookout basement and ground floor), a hip roof and a brick chimney. According to A. Carpio, in 1988 two hammer mills had replaced the original ones, built from truncated cone-shaped stones. Also, there were six hydraulic presses with the corresponding pumps, which were not being used at the time because a continuous system for the production of olive oil had already been installed.

The decantation room was quite large, with more than 20 vats, and the olive oil cellar had six deposits for 100,000 kg each. (Carpio, 2007, pp. 291–292) In the olive oil cellar, we can see the groin vaults resting on columns between which the deposits are accommodated. "The style reminds us of certain Central-European buildings due to the use of plain fascia mouldings on the intrados of the vaulting arches" (Sobrino, 2008, p. 62).

Outside, a sequence of semi-circular buttresses counters the forces. Spatially, the building is fascinating due to its large scale and to the contrast with the perimeter corridor where all the olive oil piping, taps and drains that are connected to the ten cylindrical stone masonry deposits are half buried to ensure better thermal conditions.

After the segmentation of the marquisate, following the Civil War, and after falling into the hands of several owners, it underwent a period of decadence and negligence from 1990 onwards. The Hacienda "La Laguna" Consortium (formed by the City Council of Baeza and the Government of Andalusia) (Carpio, 2007, p. 294) was incorporated

8. Decree 1966/2007 of 5 June declared Hacienda La Laguna in Puente del Obispo, Baeza (Jaén), as an Asset of Cultural Interest in the Monument category.

9. Polish civil engineer (1797–1880) who arrived in Spain in 1844 to work in the construction of several railway lines. In addition to participating in the design of projects such as those for the Madrid-Aranjuez or Valencia-Cartagena lines, he supervised the construction of the Barcelona and Madrid gasometers. He wrote the book: "Manual de economía doméstica", in 1848. He left Spain in 1850 (Orlowski, 1987, p. 128).

10. Laguna Grande is a reservoir supplied with water from the river Torres that is used to irrigate the olive grove. It has an area of 23 ha.

11. The aqueduct is part of the hydraulic network of channels that irrigates the farm and connects the reservoir, the olive groves and the vegetable gardens. It was built using bricks and round arches.

12. A.H.M.B/RPI/c143. My sincere thanks to M^a José Calvo Rentero, responsible for the Municipal Historical Archive of Baeza and Library.

in 1992 and bought most of the main buildings planning to create a Rural Hotel, the Museum of Olive Oil and accommodate the Regional School of Hospitality, all of which are currently operating there.

2.2 "La Esperanza Cubana" olive oil factory in Bailén

The agro-industrial complex "La Esperanza Cubana" was founded in 1870 by Antonio Vicent de Cola¹³ (1819–1872), 5th Marquis of Palomares de Duero, resident in Santiago de Cuba, of Spanish descent, specialised in the banking sector and very dynamic when it came to commercial and industrial investments. Antonio Vicent turned this company into one of the best examples of his great entrepreneurial spirit. As far as we know, after the death of the Marquis of Palomares de Duero his son José took over the business and gave each of his brothers their corresponding shares. (Álvarez, 1986, pp. 365–366) The factory operated until the 1960's.

He bought a property with an old ruined inn, close to the river Rumblar, where he built this whole complex with an area of 4,428 m² in 1870.

The complex comprises three buildings. The first one, with an area of 1088 m², included the courtyard that accommodated the olive barns; a trough; the olive oil lees deposits; a drinking water well; the pump room with the tank; the kitchen; the foreman's house; the stable; the owner's house and bedrooms; two warehouses with built-in clay vessels with a capacity of 9 to 10 "arrobas" – one with 34 and the other with 22 –; the area where the olive oil was prepared using a 6-horsepower steam boiler that powered three roller mills; two hydraulic presses; a hot water tank; an olive pomace deposit¹⁴, and the operator's quarters.

The second building had an area of 309 m² and was connected to the first one by a courtyard. Also, it had a stable; the straw loft; the workers' quarters; the kitchen and other rooms. Finally, the third building, which had an area of 120 m², was used for pig farming.

It was an agro-industrial complex that combined the production of olive oil with livestock

13. He settled in Seville but, from among his various investments, we highlight the ones he made in the province of Jaén in 1870: 4 houses, "La Hacienda Los Juncas" and an olive grove in Villanueva de la Reina; an olive grove in Cazadilla and another one in Rumblar (Álvarez, 1986, p. 362).

14. It was common for olive mills to have an area dedicated to the extraction of olive pomace oil, obtained from the olive pomace resulting from the olive oil production process. It was used mainly as fuel.

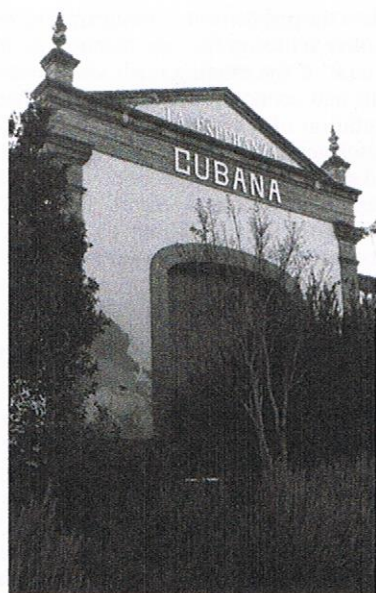


Figure 4. Façade of the "La Esperanza Cubana" olive oil factory in Bailén. Author: Sheila Palomares Alarcón. 2015.

farming and the residence of both workers and owners, who lived there during the olive picking season. (Álvarez, 1986, p. 365).

Currently, and following the refurbishment of the complex carried out between 1989 and 1992, based on a project by the architect Manuel Rubio Malpesa¹⁵, it accommodates the central offices of the company Cerámica Malpesa, S.A. (Rubio, 2007).

3 CONCLUSIONS

Both the "La Esperanza Cubana" olive oil factory (1870) and the "La Hacienda La Laguna" olive oil factory (1846–48) are considered pioneering undertakings in the province of Jaén for incorporating the latest technology associated with the "olive oil revolution".

Built in the same period of expansion of the olive growing industry in the 19th-century in the province of Jaén (although, in the case of Hacienda La Laguna, the new factory was built in an existing agricultural holding), they have several aspects in common: they combine a residential use with an industrial use; they are organised around a courtyard; the factory is a one-floor building, because it

15. My sincere thanks to Manuel Rubio Malpesa for his availability.

accommodates functional areas designed to meet the formal needs of the machinery; the activity is carried out horizontally (La Laguna has a lookout basement that seems to have been built to bridge an unevenness); they have little or no openings to allow producing olive oil in optimal conditions; they have a brick chimney and, most importantly, they are a symbol of progress and of the leading-edge technology that gave rise to the "olive grove revolution" in the 19th-century.

They were a model, a typological reference that was replicated in other industrial buildings related to the production of olive oil in the province of Jaén during the 20th-century. So, they are buildings with an extraordinary heritage value that, in addition to an architectural value, have historical, technological or ethnological values that turn these factories into an extraordinarily valuable industrial heritage.

ACKNOWLEDGMENT

National funds financed this study through the Foundation for Science and Technology, and European Regional Development Fund (ERDF) through the COMPETE 2020 Competitiveness and Internationalisation Operational Programme (CIOP) and PT2020, within the scope of the project CIDEHUS-UID/HIS/00057 – POCI-01-0145-FEDER-007702 and HERITAS [PhD] – Heritage Studies [Ref. PD/00297/2013]. Sheila Palomares Alarcón. Ref. PD/BD/135142/2017. CIDEHUS – Centro Interdisciplinar de História, Cultura e Sociedades. University of Évora/CIEBA – Centro de Investigação e Estudos em Belas-Artes. University of Lisbon (Portugal).

BIBLIOGRAPHICAL REFERENCES

Alba Mendoza, J. (1997). El orujo de aceituna. Un reto para la investigación y la tecnología. In: *Actas del Simposio Científico de Expoliva 1997*. Jaén: Fundación del olivar.

Álvarez Pantoja, M.J. (1986). Capitales americanos en la Sevilla del S. XIX: el Marqués de Palomares de Duero. In: *Actas de las V Jornadas de Andalucía y América. Escuela de Estudios Hispano Americanos de Sevilla*, pp. 349–368.

Alvear Y Ward, D. (1834). Descripción, uso y ventajas de la prensa hidráulica establecida en Montilla, provincia de Córdoba, para la elaboración del aceite de olivas. Madrid: Por D.E. Aguado, Impresor de Cámara de S.M.

Berges Roldán, L.; López Pérez, M. (1997). *Caserías de Jaén. Arquitecturas del olivar*. Jaén: Estudio Tría.

Bernal Rodríguez, A.M. (1979). Cambios, modernización y problemas en la agricultura andaluza (s.XIX-XX). *Revista de Estudios Regionales*, extra 4, 113–131.

Carpio Dueñas, A. (2007). Recuperación del patrimonio cultural oleícola. Proceso de gestación del Museo del Aceite de la Hacienda la Laguna. In: *Actas I Congreso de la Cultura del Olivo*, pp. 279–298.

Florido Trujillo, G. (1996). *Hábitat rural y gran explotación en la depresión del Guadalquivir*. Sevilla: Junta de Andalucía. Consejería de obras públicas y transportes.

Garrido González, L. (2007). *El olivar de Jaén en los siglos XIX y XX: una trayectoria de éxito*. Jaén: Universidad de Jaén, Servicio de Publicaciones.

Infante Amate, J. (2012). "Cuántos siglos de aceituna". El carácter de la expansión olivarera en el sur de España (1750–1900). *Historia Agraria*, 58, Diciembre 2012, 39–72.

López Patiño, G. (2014). Chimeneas industriales de fábrica de ladrillo en el Levante y Sureste español. Influencia sobre otros territorios. Estudio y análisis de las tipologías constructivas. Valencia: Colección tesis doctorales. Editorial Universitat Politècnica de Valencia.

Madoz, P. (1847). *Diccionario geográfico-estadístico-histórico de España y sus posesiones de ultramar*. Madrid: Est. Literario-tipográfico de P. Madoz y L. Sagasti.

Martínez de Mazas, J. (1794). Retrato al natural de la ciudad y término de Jaén; su estado antiguo y moderno, con demostración de cuanto necesita mejorarse su población, agricultura y comercio. Jaén: En la Imprenta de D. Pedro de Doblas.

Muñoz y Garnica, M. (1857). *Vida y escritos de D. José Martínez de Mazas*. Jaén: Imprenta de López y compañía.

Orlowski, B. (1987). Ingenieros polacos en España durante el siglo XIX. *LLULL*, vol. 10, 125–137.

Rubio Malpesa, M. (2007). Rehabilitación de la Hacienda "La Esperanza Cubana". *Conarquitectura ediciones*, ca24, 44–48.

Palomares Alarcón, Sheila. (2016). Pan y aceite: Arquitectura industrial en la provincia de Jaén. Un patrimonio a conservar [Tesis doctoral inédita]. Universidad de Jaén.

Serra Y Navarro, M. (1878). *Elementos de agricultura*. Jaén: Estab. tip. de los Hijos de José Francés.

Sobrino Simal, J. (1998). *Arquitectura de la industria en Andalucía*. Sevilla: I.F.A./Universidad de Jaén. Sevilla.

Torres Balbás, L. (1919). Las nuevas formas de la Arquitectura. *Arquitectura*, 14, 145–148.

Zambrana Pineda, J.F. (1984). El aceite de oliva y su dependencia del mercado internacional de las grasas vegetales. Un análisis histórico 1861–1935. *Agricultura y sociedad*, 33, 159–196.