Oil industry in Chile: construction and projection of a national industrial heritage system\textsuperscript{a}

Boris Cvitanic Díaz & Daniel Matus Carrasco \textsuperscript{b}

INTRODUCTION
The discovery of oil, in 1945 in the main island of Tierra del Fuego (Chile), started a process of unsuspected urban and territorial consequences in the country that was fundamental to its industrialization. Since the unearthing of hydrocarbons, the State planned and executed a development plan for the oil industry, which involved practically the whole nationwide territory, and would permit energetic self-sufficiency, as well as industrialization processes. This implied the formation of a specific institutional framework and legislation but also the construction of infrastructure (for productivity and connectivity), permanent and transitory settlements, and architectural works (housing and services), which became maritime and land terminals, production plants, workshops, residential complexes in several regions of the country, and campsites in the region of Magallanes, which favoured articulation of extraction, production and consumption centers for practically the whole domestic territory.

Between 1945 and 1981 the State, through Development Corporation (CORFO) and National Petroleum Company (ENAP), planned and executed such interventions along seven regions (regions of Antofagasta, Valparaiso, Metropolitana, O’Higgins, Maule, Biobio and Magallanes) (figure 01), to allow extraction, refining, processing and distribution of products for industrial and residential use throughout the country. Therefore, all parts of the productive system were inscribed in spatial and economical planning of the different territories, which facilitated the industrialization and modernization of the country in the second half of the XX\textsuperscript{th} century\textsuperscript{1} and, to this day, represent an evidence of a process of industrialization as well as de-industrialization developed in that period in Chile.

\textsuperscript{a} This paper is part of the Fondecyt 1200469 Project, “The oil industry in Chile: territory, city and architecture. Construction of an industrial heritage of national dimension”, of which the authors are responsible researchers.

\textsuperscript{1} PhD. Architect & PhD. Urbanist. Associate Professors, Department of Architecture, Universidad de Magallanes (Chile).
In such sense, the action of the State around the oil industry and its materializations have settled a basis to consider some elements of this activity as objects of patrimonial value, specially those implanted within productive zones in the region of Magallanes, specifically in the main island of Tierra del Fuego and the eastern entrance of the Strait of Magellan\(^2\), defining the declarations as National Monuments of the first productive oil well, and part of the settlement of Cerro Sombrero in Tierra del Fuego\(^3\).

In Chile, there is no research regarding the material dimensions of the industrial heritage from a perspective that interprets the remaining of the industrial processes as a nationwide system, neither as an integrated network, accounting for the relevance in the spatial dimension of its productive process. Approximations towards what has been understood as material expressions of patrimonial interest, specifically in the oil industry, have been characterized by the absence of structured interpretations that account for the complexity of this industrial activity. Moreover, it lacks an explanation about the impact of these activities on several territories, the transcendence, and material characteristics of the process as an integrated system in which its parts are dependent and complementary.
The vast amount and dispersion of the oil industry’s infrastructure within the country, built over four decades, has hindered comprehension and interpretations in an articulated manner, prioritizing heritage readings as isolated facts and objects, in which the region of Magallanes as a productive area has concentrated all value\textsuperscript{4} (figure 02).

**FIGURE 02 - Oil industry facilities in the region of Magallanes (Source: MEMORIA ENAP 1976, p.13).**

In this essay, we have started from the basis that planning and strategies that defined the productive process of the oil industry gave way in Chile to a system with structure and hierarchy, composed of infrastructure networks, which transcended the areas of exploitation and production. In this context, also aligned with thoughts that associate heritage to a territorial resource\textsuperscript{5}, we started from the assumption that this works potentially conform a system of industrial patrimony in a nationwide scale, qualified to integrate cultural landscapes, complexes, and patrimonial elements, inscribing them as useful sustainable resources within the different regions they spread across.

We intend to identify and correlate parts of the spatial system defined by the oil industry from the north of the country to the southern extreme of the American continent, attesting the territorial, urban and architectural scales of its constitution, that allow in its dimension of industrial heritage to authenticate an articulated management from the State. The object of study manifests its relevance in the fact of relating and involving not only industrial elements (processing plants, maritime terminals, land terminals, productive clusters, platforms, ports, workshops, ducts), but also a collective habitat in the same productive areas (such as the settlements of Manantiales, Percy, Clarencia, Cerro Sombrero, Cullen, Posesión and Gregorio) and in the main cities involved (fourteen urban developments, mostly in the cities of Punta Arenas, Concón and Concepción), establishing relationships between objects and subjects that form a base for its patrimonial consideration.
THE INTERPRETATION

In the comprehension of industrial heritage readings as isolated facts and objects have prevailed, interpretations that have conformed towards the general notion of heritage which lately have a tendency to become more wide and complex. In such sense, according to Pardo, in general terms the industrial goods can be currently approached, in its patrimonial dimension, in function of four categories: the *industrial elements*, understood as punctual or partial testimonies of industrial activity; the *industrial complexes*, as “coherent and complete samples” of productive activities; the *industrial landscape*, as “territories or wider complexes where fundamental elements of production processes are conserved”; and *industrial systems and networks*, which determine a “material testimony of territorial distribution”, of relations between subjects, resources and products.

In a tendency aimed towards the recognition of “integral heritage”, as key approximation of an interpretation that, through an “updated, integral and scientific” reading, allows for a later definition of public policies and enabling ways for an integrated management and mediation of the industrial heritage legacy in a nationwide scale.

On the other hand, readings of evidence from the activity would allow construction of patrimonial interpretation set on the foundations of tasks occurring along the productive chain, which carry over the transformation of oil as a resource. A process conformed by the phases of exploration, exploitation, distribution and productive transformation.

THE SYSTEM

The appearance of productive deposits in the region of Magallanes in 1945 originated the need for access and connectivity to the centers of operations and supply. Therefore, a road network was gradually created throughout the whole northern area of Tierra del Fuego, which was supplemented with exchange nodes, initially as landing beaches (Punta Espora) (figure 03) and, later, through ports.

![FIGURE 03 – Landing beach at Punta Espora. Ca. 1945 (Source: ENAP archives).](image-url)
Construction of networks for transportation of crude to refineries, and from these to storage, distribution and consumption areas, determined the initial construction of Clarencia (1949) and Percy ports (1960), both on Tierra del Fuego. Besides the construction of Gregorio port on the continental coast of the Straits of Magellan (1959), and also the terminal Quinteros, in the province of Valparaíso (1952). Later ports were added at La Chimba (Antofagasta, 1967), Vinapu (Isla de Pascua, 1976), San Vicente (Biobío, 1965), Cabo Negro (Magallanes, 1969); which conformed seaways along the transportation network of oil production. Additionally, in the central part of the country, land connections of oil ducts were articulated by storage terminals in Maipú (1958), San Fernando (1966), and Linares (1966), covering residential and industrial consume, of the central and most populated regions of the country.

For the transformation of the product, the State planned and executed the construction of refineries nearby ports within the nation’s territory, where the installation of petrochemical and other related industries were established. Consequently, in the region of Valparaíso the Concón refinery (figure 04) was built (1955) next to river Aconcagua and close to the Quintero port, and in the region of Biobío, a refinery in Concepción (1966). To these facilities productive plants in the region of Magallanes were added, with the Manantiales refinery (1952) (figure 05), the Cullen plant (1959), Cabo Negro fractionation plant (1969), Posesión plant (1971) and Gregorio refinery (1980). Finally, what initially was a production of land oil wells, was completed with the installation of off-shore oil platforms along the eastern exit of the Strait of Magellan (1977).

FIGURE 04 – Concón refinery, región of Valparaíso. 1970 (Source: MEMORIA ENAP 1971, p.8).
On the other hand, the start up of hydrocarbon industry in the country required an availability of materials and equipment in the territory, as well as mobilized skilled workforce which wasn’t readily available in the work areas, or where the petrochemical industry was established. Therefore turned up exclusively in Magallanes, the settlements of Clarencia (1951), Manantiales (1953), Percy (1957), Cerro Sombrero (1958) (figure 06), Cullen (1960), Gregorio (1962) and Posesión (1962), as populated centers completely urbanized, formed by collective equipment, and a diversity of housing designs for employees and workers, singles or with families. Besides, nearby Punta Arenas, workshops were enabled at Tres Puentes (1952), and at Laredo (1977) as manufacturing centers for exploration, drilling and exploitation parts and equipment.

While in the urban centers, directly through ENAP, or indirectly through its workers, the industry built residential complexes for employees and labour: at Quintero (Valparaíso, 1954), Concó (Valparaíso, 1958), San Fernando (O’Higgins, 1974), Springhill village (Biobío, 1970), ENAP Chiguayante village (Biobío, 1969), San Pedro village (Biobío, 1976); in Magallanes an Employee’s building (1951), and the neighborhoods of Los Pinos (1965),

FIGURE 07 - Residential complexes in Punta Arenas (Source: prepared by authors)

Production decline towards the 1990’s determined the loss of industrial activity logic, with a consequent destructuring of the network, and abandonment, disappearance or reconversion of facilities in a constant and apparently irreversible process.

CONCLUSIONS

Between the discovery of oil in 1945, and the breakup of ENAP into a group of subsidiaries in 1981, the State became involved in the development of oil related activities as a mechanism for industrialization of the country. Since then, the activity associated to oil production determined a configuration of specialized industrial landscapes: as production, industrialization and processing territories. Besides works, infrastructure and communications systems which articulated the network, allowing traffic and availability of production, in a dual relation over the territories, both deployment and requirement.

The oil industry in Chile allows the development of an approximation to industrial heritage which not only considers some isolated industrial elements, certain industrial complexes, and determined industrial landscapes; but instead enables interpretation of a material expression of oil activities as a case that articulates different scales of industrial heritage, in which isolated elements interact (administrative, productive and support facilities), with

---

In this situation is Percy's settlement (2011), and the ports of Percy and Clarencia.

The Clarencia settlement and partially Cullen are in this situation, as well as Manantiales settlement and plant (closed in 1978).
varied industrial complexes (seven settlements, seven plants, fourteen residential complexes), and industrial landscapes (Tierra del Fuego, in the region of Magallanes; Concón and Quinteros in the region of Valparaíso; and Hualpén in the region of Biobío), comprising a more complex system of industrial heritage of nationwide reach.

While territorial, urban and architectural scale of its construction would allow an articulated management of industry’s materializations, the lack of sense of productive links or industrial logic, has drifted into abandonment, closure, disassembly and demolition of part of the work and infrastructure of national oil activity. However, most are still active and many of those still associated to other productive activities or appropriation processes by their users, greatly impacting their physical and human contexts. In this sense, it is considered necessary to reflect on the systemic dimension of industrial heritage that allows to broaden the conception and possibilities around it, and propose an interpretation that enables the establishment of criteria for sustainable planning and management of the involved territories.

---

8 Pardo, Carlos, 2016, El patrimonio industrial en España. Paisajes, lugares y elementos singulares, Madrid, Editorial Akal. p. 16
9 Ibíd., p. 17
10 Ibíd., p. 18
12 Ibíd., p. 12