

Article

Patterns of Detachment: Spatial Transformations of the Phosphate Industry in el-Quseir, Egypt

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Abstract

The establishment of phosphate mines and processing plants by Italian entrepreneurs in el-Quseir in 1912 revitalized a town that had faced a steady decline after the opening of the Suez Canal and re-linked it to the world economy. To this day, the now defunct industrial site occupies a large section of physical el-Quseir and plays a key role in its identity. In this article, we explore the impact of the company's successive industrialization and deindustrialization based on archival research, interviews, and mapping. By tracing physical changes on-site and in the city of el-Quseir from the founding of its phosphate industry until today, as well as the historical and current interactions of citizens with the industrial facilities, we hope to better understand the "cluster value" of the industrial plant in quotidian life and the effect of the vacuum left behind after the termination of production. As machinery and buildings are slowly eroding in the absence of expressed interest by the former Italian and current Egyptian owners, we aim to discuss the relationship between the citizens and their el-Quseir phosphate plant as a crucial element of its heritage value at the local level.

Keywords

Egypt; industrial heritage; industrialization; Italy; mining; phosphate industry

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1. Introduction

The peripheral industrial history of urban development in Egypt remains largely unwritten. Only recently have industrial sites come into the scope of a mainly expert-led public discourse. Research on industrial heritage in Egypt remains primarily focused on architectural features and industrial history (Alsadaty, 2020; Bodenstein, 2010; Damir, 2022; Nassar & Sharaf Eldin, 2013). The research largely omits the urban scale and the physical and intangible transformations evident in the transboundary spatial-temporal dynamics, i.e., linkages and dependencies that go beyond the site perimeter (Damir, 2022; Leung & Soye, 2009). Transcending

the acknowledgment of individual industrial facilities, their spatial interlinkages contribute to what Lu (2015, p.71) refers to as "cluster value," i.e., the agglomerative effects of industrial development on fostering urbanization and urban life. Therefore, our perspective on industrial heritage is not limited to conservation concerns but is integral to cities and their transformations (Oevermann, 2015, p. 1).

In this article, we aim to explore the patterns and spatial linkages produced by the successive industrialization and de-industrialization of the former Italian phosphate processing plant in el-Quseir during the 20th century. The revitalization and expansion of the almost derelict historical city on the coast of the Red Sea

as an industrial colony and its impact on the geographically isolated region—which at its peak included seven phosphate mines spread out over almost 400 km²—unfortunately has received little scientific attention and remains poorly documented (Pellegrini, 2011). Cabassi’s (2012) “Kosseir, a phosphate-shipping town—La cité des mines de phosphates à Kosseir” on the development of the Società Egiziana per l’Estrazione e il Commercio dei Fosfati (Egyptian Phosphate Mining and Trading Company) remains the only authoritative academic source on the company during the Italian reign but is brief on its impact on el-Quseir. The company’s activities after its nationalization, regional implications, and the socio-cultural transformation following the plant’s closure in 1998 have not been previously studied.

2. Research Methodology

Our research aims to document the key physical transformations in el-Quseir before and after the nationalization of the phosphate company and explore their impact on socio-cultural patterns. One challenge in this regard is the predominance of an “Italian” narrative in available publications such as Cabassi (2012) and Pellegrini (2011). This narrative has affected both documented sites and recorded memories, leaving less room for an Egyptian recounting of the industrial site. At this stage of research, it is too early to diagnose a potential “dissonant” heritage representing conflicting or inconsolable memories as defined by Soyez (2009). Nevertheless, we agree with his call to “re-adjust” traditional perspectives by including “pluralized, fragmented or contested realities and ways of remembering” (Soyez, 2009, p. 44) and to challenge seemingly objective or universal narratives (Bhambra, 2014; Lähdesmäki et al., 2019).

We applied a mixed-methods approach to identify development patterns that include a local socio-cultural perspective on the regional industrialization around el-Quseir. Data collected from fieldwork and archives, reviews of secondary literature, publicly available satellite imagery, historical maps, and photography were used to map the industrial complex in QGIS. Given the lack of publications, especially in the post-nationalization phase, archival work and field visits were utilized as the primary source of data collection. Information in national Egyptian archives was mostly inaccessible due to unauthorized security permits. Between March and June 2022 archival materials were nevertheless explored with the help of private collections and the Gamal Abdel-Nasser Foundation. These materials included several magazines published in the 1950s and 1960s, such as *Al-Musawwar* and *Rosalyoucif*, as well as a few books documenting the economic and socio-economic status of the industrial sector during the administration of the former president Gamal Abdel-Nasser.

Fieldwork included a four-day visit to el-Quseir in 2021 as part of the Modern Heritage to Future Legacy project. Site visits and photographs of the city and the

phosphate company were completed between July 15 and July 18. Additionally, 15 semi-structured interviews were conducted with members of the local community who contributed to uncovering the linkages and detachments between the phosphate company and the city of el-Quseir. The interviewees included current employees at the phosphate company, NGOs in the city, and residents whose fathers worked in the company and retired early after it was nationalized. The interviews were focused on their memories and associations with buildings, functions, routines, and activities as well as accessibility for Quseirians over time. Open-ended questions resulted in interview durations of 30 to 90 minutes. Furthermore, data from the “City, Community, and Heritage” workshop held in el-Quseir in 2018 was re-evaluated. Due to corona-induced travel restrictions during the project’s duration, the fieldwork remained exploratory and is still in need of more structured follow-up. Even with those limitations, the modified project framework produced relevant findings that are presented below.

3. El-Quseir: Historical Overview

3.1. Location and Formation of the Town

El-Quseir is a small port town of 50,000 citizens located on the Red Sea approximately 600 km from Cairo and around 200 km from the Nile Valley (Central Agency for Public Mobilization and Statistics, 2022; Sachdev, 2017). It was founded during the Ottoman period, around 8 km south of the city el-Quseir el-Qadim, which dates to the ancient Egyptian era (Le Quesne, 2004). Over the centuries, el-Quseir el-Qadim connected Egypt to the international trade routes through the Arabian Peninsula and the Indian Ocean (Sachdev, 2017). From the Fatimid era onward, it was a departure point for Upper Egyptians towards Mekka for pilgrimage (Rashed & El Attar, 1999). After the destruction of el-Quseir el-Qadim by a Portuguese fleet in 1541, el-Quseir was established (Le Quesne, 2010). During Mohamed Ali’s rule (1805 to 1845), the city flourished again due to trade and pilgrims. The city’s population increased to 8,000 people during the beginning of the 19th century, and the pilgrims who passed through el-Quseir numbered around 30,000 annually (Klunzinger, 1878). After the construction of the Cairo–Suez railways and later the Suez Canal with its direct connection to the Mediterranean Sea, el-Quseir’s importance rapidly diminished, and the population decreased to 1,500 people (Klunzinger, 1878). The city lay dormant until the establishment of the phosphate company.

3.2. El-Quseir and Phosphate Mining in the Red Sea Region

The first phosphate mining explorations in Egypt were conducted by British geologist Hugh John Llewellyn

Beadnell in the Western Desert at the end of the 19th century (Al-Alfy, 1946, p. 153). Scottish geologist Andrew Crookston was soon invited and granted the concession to expand the exploration area to the Red Sea region and the Sinai Peninsula since these are the three regions containing Egypt's phosphate deposits. Italian companies and investors had been active in Egypt since the 19th century in various industries including housing, transportation, and even maritime construction (Giacomelli, 2012). By the end of the 19th century, Italian investment in Egypt had expanded its territorial scope to the Red Sea region. The phosphate exploration concessions, granted to Crookston in the Quseir-Qena region, were transferred to Banco di Roma. In 1910, the bank invested in new geological expeditions in Wadi Hamadat (Cabassi, 2012). In 1912, four years after the first actual exploitation of phosphate beds in Egypt (presumably in Safaga), Banco di Roma founded the Società Egiziana per l'Estrazione e il Commercio dei Fosfati (Egyptian Society for the Extraction and Trade of Phosphate; Cabassi, 2012; Fitzau, 1914, p. 703; Phosphate production in Egypt, 1922, p. 547). In the same year, the total output of Egyptian phosphate mines reached 70,000 tons. The phosphate industry was monopolized by the British in Safaga and the Italians in el-Quseir. Owing to newly established rail connections, Egyptian phosphate quickly became an important factor in world supply (Phosphate production in Egypt, 1922, p. 547). In the year 1914, a second phosphate mine was opened by the Italians in Gebel Nakheil; factory equipment and infrastructures of various kinds were then gradually implemented.

World War I brought major interruptions but with fresh capital and a partial change of ownership, mining and production in el-Quseir continued. In 1927, all company shares were transferred to the Italian State Treasury, effectively resulting in the first (Italian) nationalization of the company. The Egyptian government cooperated with the company to construct a railway linkage to Qena on the Nile. A branch office of the Italian Fascist Party and several recreational facilities were installed as well (Cabassi, 2012, p. 109). Phosphate was principally exported to Italy, Japan, and Australia (Pellegrini, 2011, pp. 42, 235). After initial unsuccessful attempts by the Japanese to set quotas in December 1933 and August 1936, the el-Quseir Agreement of June 17, 1936, fixed quotas for export to Japan and Europe and granted a quasi-monopoly for export to Italy (United States Federal Trade Commission, 1946, p. 43). During World War II, the Italians in el-Quseir were briefly interned by the British but later allowed to continue production in the plant and seven mines in Gebel Duwy, Hamadat, Atshan, Nakheil, Abu-Tundub (North and South), Faraa, and Hamarawein (Pellegrini, 2011, pp. 22–23). By 1946, Egypt (together with Algeria, Tunisia, and Morocco) ranked second in terms of phosphate extraction and export after the USA, and phosphate was considered one of its three major export products (Al-Alfy, 1946, p. 153; El-Egeamey, interview, July 17, 2021; United Nations, 1953, p. 124).

3.3. *El-Quseir and the Nationalization*

After the Free Officers Movement in 1952, the ousting of the British, and the founding of the Egyptian Republic led by Gamal Abdel Nasser, industrial policy shifted towards increased state involvement (Karakoç et al., 2017, p. 14). The nationalization of the Suez Canal and the ensuing Suez Crisis led to the confiscation of British and French assets and companies after 1956 (Ikram, 2006, p. 3). In 1957, comprehensive economic planning was introduced, including a five-year plan for industrial development (Ikram, 2006, p. 5). The Egyptian government focused predominantly on constructing new industries and industrial towns country-wide, with less interest in the continuities of sectors from the former regime, especially in the agro-industrial sector (Roussillon, 1998, p. 336). As part of Nasser's propaganda regarding Egypt's reindustrialization, the government aimed at investing in large-scale industries that suited the political paradigm of selectively opening up to the global mercantile economy. Foreign companies operating in Egypt were successively nationalized after the Laws of Nationalization of July 1961. Industrialization of other industries, transportation, and mines continued at least until 1964 (Abdel-Malek, 1964, p. 42; Ikram, 2006, p. 6). In December 1961, all mining companies were incorporated under the Egyptian General Mining Corporation (EGMC; Bahaa al-Din, 1965).

In the case of the Red Sea region, the regional focus turned to promoting oil investments (Melcangi, 2013, p. 60). Still, the phosphate industry was not wholly omitted from the government's industrial scope. In contrast to the pre-nationalization phase, the phosphate industry was directed predominantly toward local production, and the surplus was exported. By 1965, phosphate fertilizer was rated second in the country's consumption of heavy industrial products in the agricultural sector (Hamrush, 1965, p. 15). During that time, the mines in Hamadat, Nakheil-Atshan, and Gebel Duwy were being exploited, with the latter nearing depletion (Service & Petersen, 1966, p. 22). The company continued to export phosphate eastwards to avoid Suez Canal tolls; key destinations were Japan, Sri Lanka (British Ceylon), and India (Service & Petersen, 1966, p. 22; United Nations, 1953, p. 124).

During the period of nationalization, the Italian Industrial Reconstruction Institute, which had run the phosphate mines since 1933, started negotiations with the Egyptian government to retain at least a 50 percent share in the company. An agreement on the company's valuation, however, was never reached (Melcangi, 2013, p. 61). There is conflicting information on the exact year of the nationalization of the phosphate company. Service and Petersen (1966) report that partial nationalization occurred in 1961. Dario Triches and Giancarlo Chissalè, who lived in el-Quseir until 1958, state that the last year of operations of the phosphate company in el-Quseir was 1963, after the shutdown of all company

mines (see Pellegrini, 2011, pp. 229, 240); the same year is confirmed by Paliotti (2014). Cabassi (2012) reports that the el-Quseir factory was nationalized in 1958 and decommissioned in 1964. The decommission was temporary as the company was integrated into EGMC with the Republican Decree No. 2726 of 1964 (Sachdev, 2017, p. 23). As part of Nasser's five-year plan for industrial development, the complex in el-Quseir was to undergo administrative and economic restructuring (Konuz ardina, 1965).

The second phase of the five-year plan for industrial development during the 1960s involved proposals to expand the phosphate exploitation area into the New Valley and Hamrawein (Industrial and Mining Projects Authority, n.d.; Stoica, 1972, p. 355). President Anwar Sadat's economic open-door policy and promotion of private-sector investment impacted the Hamrawein industrial project. No changes in el-Quseir are documented, however. By 1978, the Quseir mines and plant were producing around 90,000 tons of phosphate, and those in Hamrawein around 15,000 tons (Ministry of Housing and Reconstruction, 1978, p. 156). By that time the city of Quseir had 15,000 inhabitants, which is almost tenfold what Klunzinger reported in 1878 before the phosphate boom and about equal to the population of the city of Hurghada at the same time (Ministry of Housing and Reconstruction, 1978, p. 156). Under Mubarak, trade liberalization and WTO-induced structural adjustment affected the industrial sector negatively (Karakoç et al., 2017, p. 20). In 1998, the Quseir plant was closed (Mostafa, interview, July 17, 2021). Al-Sayed, head of Roayah NGO, reports that the shutdown was due to economic and environmental reasons. The decision was supported by the Ministry of Environment and the Movenpick Hotels Group (interview, July 17, 2021). In 2000, the plant was formally integrated into the al-Nasr Mining Company (Sachdev, 2017, p. 25). The New Valley Phosphate Project in the New Valley Governorate started in 1999, and the Hamrawein plant is still operating (Industrial and Mining Projects Authority, n.d.; Mostafa, interview, July 17, 2021).

4. El-Quseir: Patterns of Transformations

4.1. Patterns of Physical Transformations

4.1.1. Pre-Nationalization

Beginning in the early 20th century, the phosphate mining concessions in the Quseir-Qena region and the resulting influx of foreign funds caused an economic and urban revitalization that transcended the old town and introduced spatial linkages with its surrounding terrains. These are interpreted here in three main morphological phases.

The first phase lasted until 1914: Klunzinger's 1878 map of el-Quseir displays a small settlement overlooking the port. The urban pattern remained relatively undis-

turbed during the first years of phosphate mining, which was characterized by scattered construction (Figure 1). At the northern end of the old town, a radio station with a group of houses was constructed (Figure 1, No. 11–13). A water distillation plant stood overlooking the port in the old town (Fig. 1, No. 16). Additional service buildings involved a wind power plant and a hospital (Fig. 1, No. 15). By 1906, six company employee dwellings stood by the waterfront arranged orthogonally in two rows, bordering the old town on the northeast and designed in a westernized architectural style (Fig. 1, No. 14). The company cemetery was located far from the urban fabric (Fig. 1, No. 10; Pellegrini, 2011, p. 29).

The second phase lasted until 1923. Mining was expanded in the mines already under operation, where Italian and Egyptian-Arab workers resided in tents (Pellegrini, 2011, p. 32). The opening of a second mine was followed by rapid upgrading of the infrastructure and production facilities. The coastal industrial plant emerged as a new pattern ("The Oil Industry," 1946, p. 121). The plant's new facilities stood on the periphery of the old town and were detached from the structures mentioned above. A narrow-gauge railway connected the mines with the coastal plant. Railway maintenance was a new function with separate facilities, such as water tanks and railway roundhouse (Fig. 1, No. 7). A new electricity generator building reportedly contributed to generating power for the coastal industrial plant, the old town, and later the mines (Fig. 1, No. 8; Guard of the coastal plant, interview, 2021; Pellegrini, 2011, p. 235). Furthermore, the el-Quseir port was rehabilitated by constructing a loading dock on the southern end of the old town, which was also connected by rail (Fig. 1, No. 17).

The years from 1923 until the 1950s marked the third phase and the heyday of the el-Quseir company. The discovery of rich deposits in Gebel Duwi resonated countrywide and globally (Cabassi, 2012). Accordingly, a royal visit by King Fouad of Egypt to the el-Quseir company was planned, incentivizing extensive physical transformations, predominantly in the mines (Hashem, 2021, p. 873). These developed into desert industrial plants; their urban pattern involved plowed fields and machinery for phosphate processing and narrow-gauge railways for transport (Figures 2 and 3). Each desert plant comprised dwellings for Italian and Egyptian-Arab workers. The Arabs resided in one-story barracks, whereas the Italians lived in bungalow-style houses scattered on the mountain hills within the plant terrain (Pellegrini, 2011, p. 236). The operational growth and increase in company staff required additional services such as a mosque, cafeteria, infirmary, and elementary school (Cabassi, 2012). As depicted by Gebel Duwi, the area of each mine matched or even exceeded that of the coastal plant (Figures 1 and 2).

During the 1930s, the coastal plant was expanded to include new services including operational, administrative, recreational, religious, and educational facilities. A museum with natural artifacts from the region

was also established (Fig. 1, No. 9). *Ex situ*, to the plant's western and northern borders, residential buildings and the church of St. Barbara were constructed (Fig. 1, No. 2 and 3). The residential buildings hosted the Italian employees and were characterized by an Italian fascist tincture. The Egyptian laborers in el-Quseir continued to reside in the old town fabric which saw little expansion even during the third phase (Figure 1).

During World War II, industrial operations stagnated temporarily. Nevertheless, the el-Quseir-Qena railway was completed, connecting the coastal plant to the Nile and unburdening Port Suez (Kupferschmidt, 1943, p. 55). The mines still depended on el-Quseir town for supplies and operational and social facilities within the coastal plant (Cabassi, 2012; Pellegrini, 2011, p. 23). Connected by rail, all extracted and processed phosphate in the desert plants was transported to the coastal plant for storage. The port underwent additional infrastructural overhauls, as evidenced by the new north-south direct road parallel to the waterfront. Additionally, cable car routes were constructed extending from the coastal plant to the port above the seashore, forming a completely new seascape to the eastern side of the old town (Figure 4; Pellegrini, 2011, p. 27). At the northern end of the el-Quseir coastal plant, the company constructed a large phosphate enrichment plant almost doubling the plant's area. The company did not impose any additional physical pattern on the old town fabric but repurposed existing buildings in the old town as part of its managerial facilities. Mapping based on satellite imagery revealed considerable unplanned or informal settlement growth around the desert plant (Figure 2). The buildings were presumably houses of Egyptian mine workers. These built-up areas are undocumented in historical sources, making it impossible to date the time of their first appearance.

4.1.2. Post-Nationalization

After its nationalization, the company was integrated into the Red Sea Phosphate Company. By 1965, besides receiving administrative and economic restructuring, the newly nationalized coastal plant was rebranded by re-painting the formerly white buildings in yellow (Mostafa, interview, July 17, 2021). Yet mining and processing was gradually shifted to Hamrawein. A year before the 1998 shutdown of the el-Quseir company, most metal structures in the coastal and desert plants, including their connecting railways, were dismantled and sold as scrap. Additionally, the whole cable car structure and the port's pier were also disassembled (El Egeamey interview, July 17, 2021; Pellegrini, 2011, p. 225). The railway linkage to Qena was presumably dismantled by 1978 as it was not mentioned in the 1978 report by the Ministry of Housing and Reconstruction. An Italian group visiting el-Quseir in 1997 reported the poor state of the town and its plants with abandoned premises. By that time, the urban growth of el-Quseir had enveloped the

coastal plant and its cemetery into the town's fabric. Pellegrini (2011) mentions an urban planning model of el-Quseir drawn up by the provincial or town council after the nationalization of the company, presumably before 1976. Regarding the coastal plant, Decima describes the state of abandonment and destruction of its premises; this includes the abandoned school (Fig. 1, No. 1) and the destruction of the Franciscan church in order to build a bigger Coptic one (Figure 5; Pellegrini, 2011). In 2020, the company sold the old machines in the workshops, the steel ladder in the tank, and most of the furniture in the King Farouk Rest House as scrap (Fig. 1, No. 4). The company also destroyed most of the old documents that had remained in the buildings, especially the administration buildings, the school, and the nuns' house. The massive phosphate enrichment plant was dismantled entirely, causing a large vacuum in the urban fabric (Mostafa, interview, July 17, 2021).

The demolition and recycling of valuable materials also extended to the desert plants, where buildings were stripped of reusable materials such as metal and wooden roofs. Mapping of the unplanned or informal settlement growth around the desert plants shows them uninhabited and reduced to their boundary walls (Figure 2). While the desert plants are entirely abandoned, three buildings in the coastal plant remain in use: the former school, reused as a police station; the reconstructed church (Figure 5); and the former nun's house, inhabited by former company employees and occasionally hosting visitors. The remaining physical structures *in situ* are neither maintained nor preserved and face gradual decay by incremental dismantling or neglect. *Ex situ* from the coastal plant stands the former hospital and employee houses still in use; the former has been repurposed as a learning development center for the Quseirian children and the latter is still inhabited by former employees. Several reuse projects for the coastal plant were proposed by the city council and heritage advocates. The council's projects involve replacing the coastal plant with touristic hotels and transforming the port into a yacht marina. The holding company, however, still refuses to negotiate the plant's urban transformations (Mostafa, interview, July 17, 2021).

4.2. Patterns of Socio-Cultural Transformations

4.2.1. Pre-Nationalization

By the end of the 19th century, the underpopulated el-Quseir comprised Egyptians and migrants from the Arabian Peninsula. Soon after the first two successful phosphate expeditions, el-Quseir witnessed the first signs of noticeable population increase consisting of Italian employees, migrating mainly from the Agordino area in Veneto and the Canavese area in Piedmont, and migrants from Upper Egypt working in mining and extraction (Mostafa, interview, July 17, 2021; Pellegrini, 2011, pp. 230–35). The 1920s and 1930s witnessed discernible

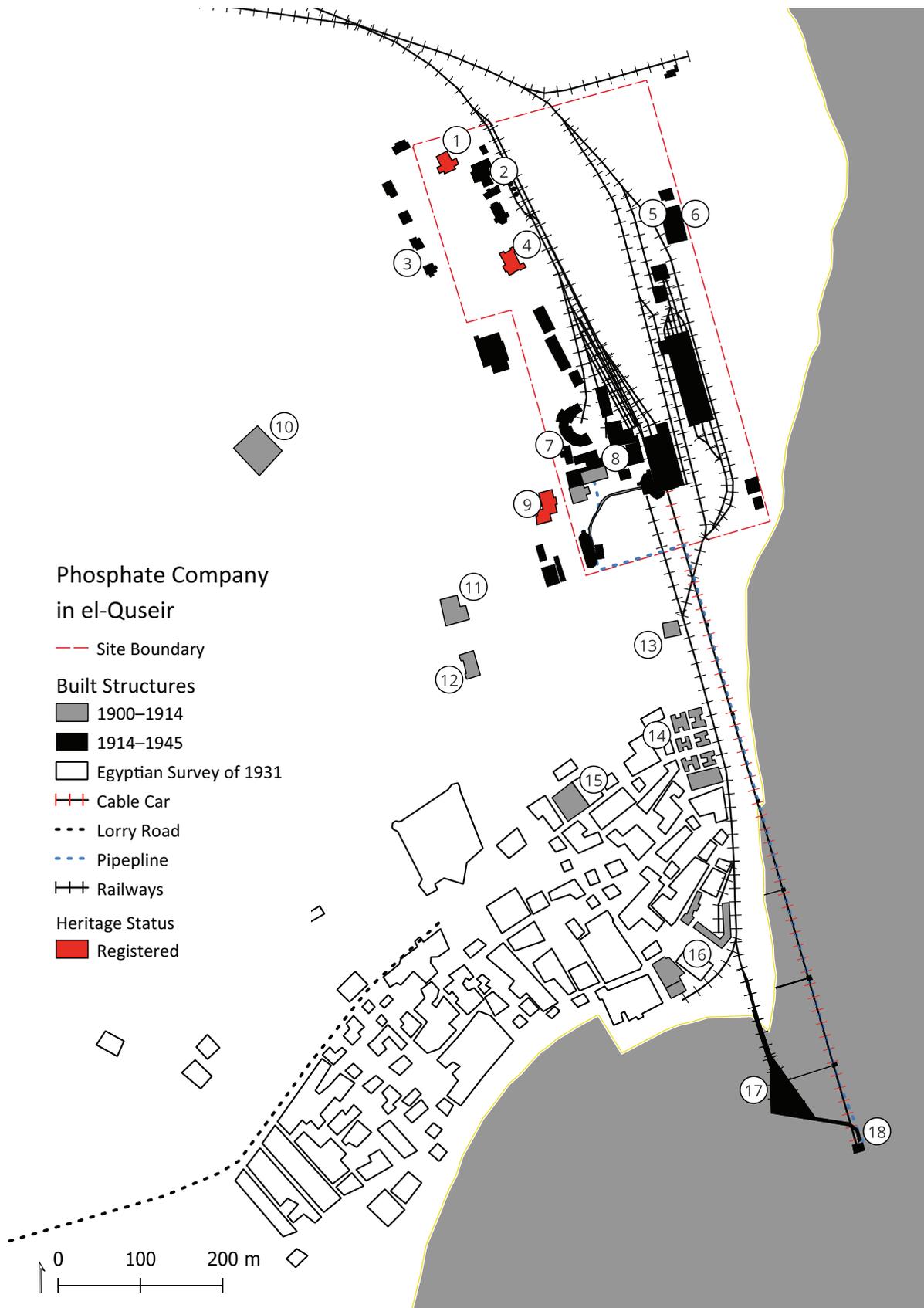


Figure 1. Map of el-Quseir urban fabric and the coastal phosphate plant in 1930–1940 (black outline), highlighting the integrated buildings of Phase 1 (until 1914, grey) and the detached plant (1914 and after, black) and currently registered heritage buildings (red). Source: Created by the authors with the use of base map (Egyptian Survey of 1931), as reproduced in Le Quesne (2010).

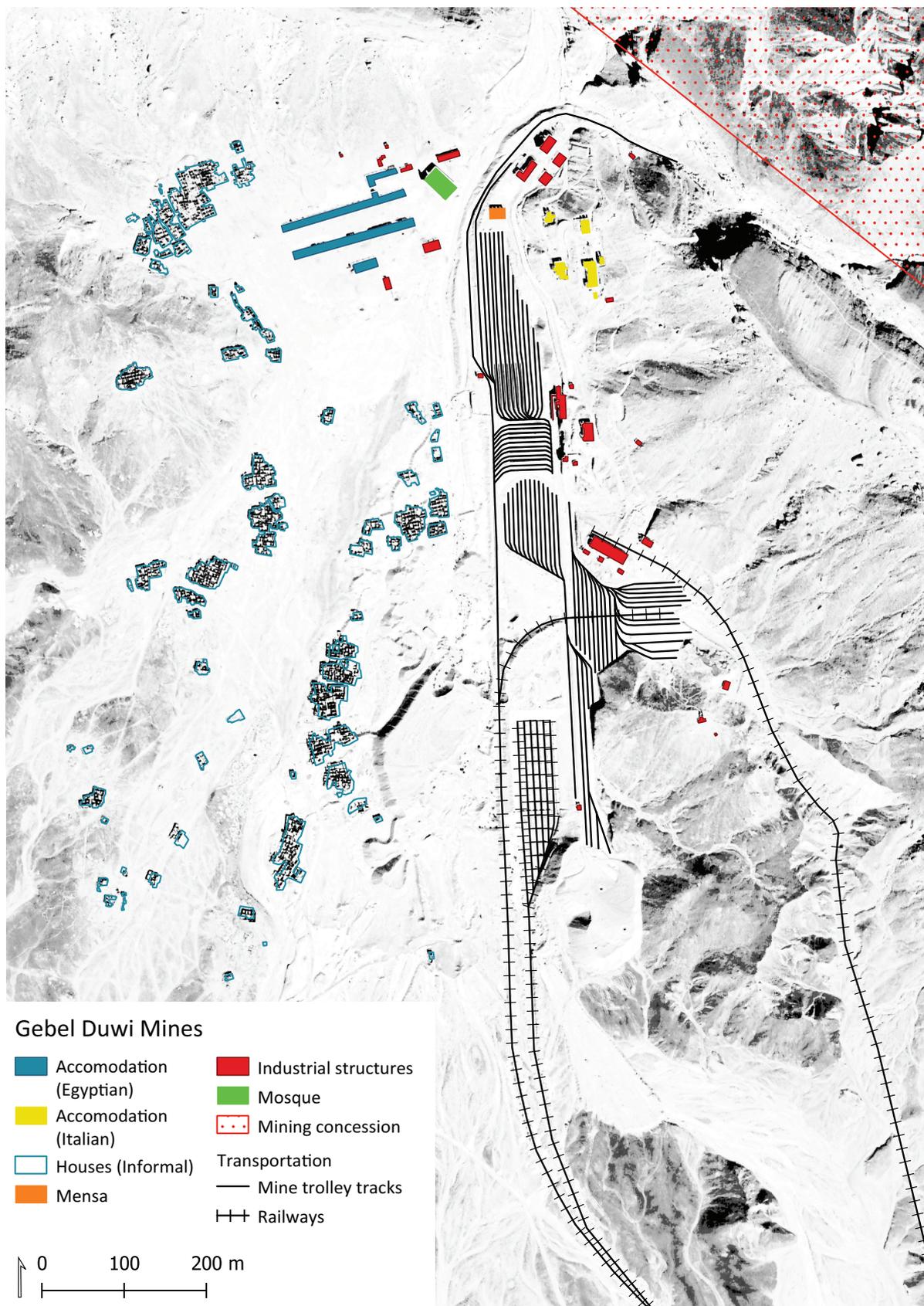


Figure 2. Map of the desert industrial plant in Gebel Duwi. Source: Created by the authors with base map of Google Hybrid, 2022.

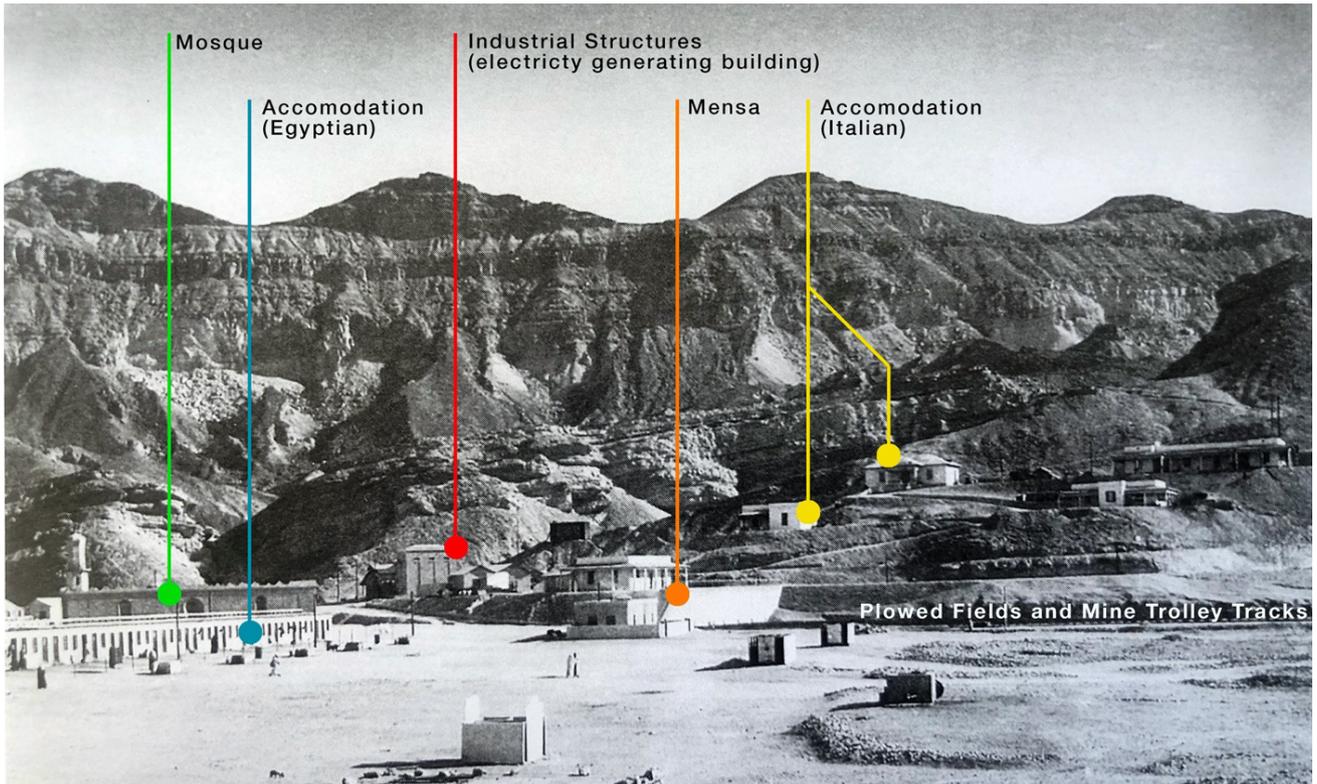


Figure 3. View of Gebel Duwi desert industrial plant. Source: Pellegrini (2011, p. 49).

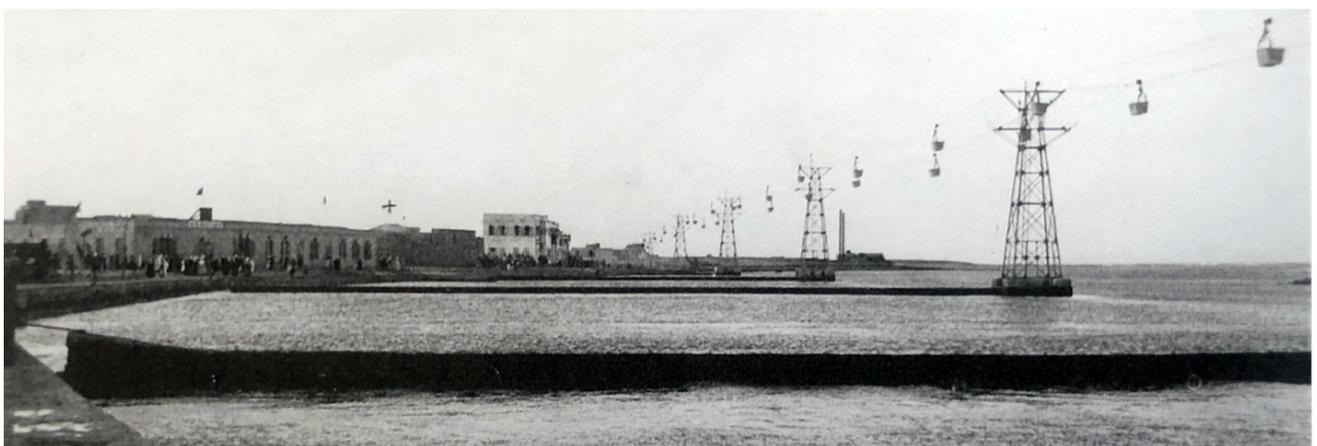
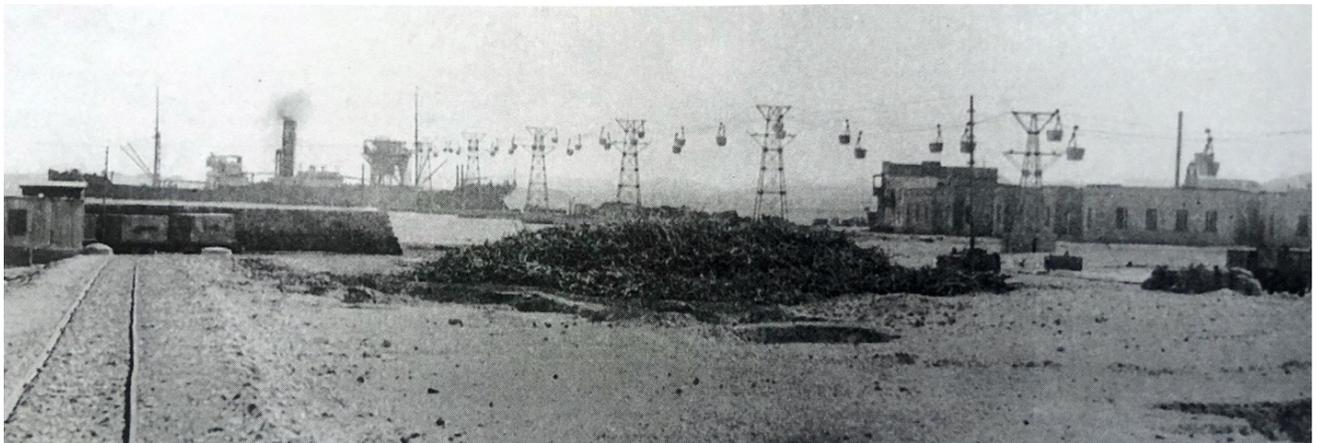


Figure 4. The cable cars penetrating the coastal industrial plant (top) and extending to the port overlooking the old town (bottom). Source: Pellegrini (2011, p. 86).



Figure 5. The Franciscan church in the coastal industrial plant, presumably during the 1930s (left); the reconstructed church, now serving Egyptian Copts (right). Sources: Pellegrini (2011, p. 112; left) and photo by Mirhan Damir (2018; right).

patterns of stratification. The company employed about 2,000 workers, of which only 100 were Italian (Pellegrini, 2011, p. 27). Italians were divided into two social groups according to their positions. Those occupying high-ranking positions lived in the coastal industrial plant, physically and socially separated from the old town and its residents, while those in mid-rank positions resided mostly in the desert industrial plants (Pellegrini, 2011, p. 24).

Pellegrini (2011, p. 42) reports on the hard life both Italians and Egyptians experienced after arriving at the mining settlements. As a form of symbolic spatial attachment, mining tunnels and houses built in Gebel Duwi were named after the Italians' native towns and streets. Italian and Egyptian workers shared a daily routine characterized by a bell signifying the start of the working day, lunchtime, and the end of the working day (Mostafa, interview, July 17, 2021). This shared routine created a social attachment with the Egyptian mine workers, ensuring in a new pattern that Pellegrini (2011, p. 25) exaggeratedly recalls as a state of utopia.

In el-Quseir, Egyptians and Italians lived in distinctly segregated quarters. Nevertheless, common patterns evolved around social activities. Religious occasions, such as the feast of St. Barbara—considered the protector of mines—and Christmas encouraged the gathering of Italians from the coastal and desert plants (Malak, interview, July 17, 2021). Education also proved to be an important aspect of social life. Due to the small number of Italian children, the children of the Egyptian workers were allowed to attend the *in-situ* Italian elementary school (Figure 6; Melcangi, 2013, p. 61). To increase communicative integration with the Italians, adult Egyptian company workers learned the Italian language by visiting the school's evening classes (Mostafa, interview, July 17, 2021). Al-Sayed (interview, July 17, 2021) confirmed the

Italian fluency of the town's old residents. The hospital was another service accessible to all employees and their families (Figure 7). Spaces of leisure were provided, including an open-air cinema, tennis courts, and soccer fields. Fishing, music events, and hunting were popular activities (Figure 8; Al-Sayed, interview, July 17, 2021; Paliotti, 2014). The company initially provided its workers' food supply in the food storage canteen near the port, later in canteens in the desert plants, and a cafeteria inside the coastal plant (revise Fig. 1, No. 5). According to interviews, Italians and Egyptians gathered during lunchtime; meals were additionally distributed to the company workers and their families (site security guard, interview, July 16, 2021; Khamis, interview, July 17, 2021; Mostafa, interview, July 17, 2021).

Politically, the effect of the branch office of the Italian Fascist Party on Italian-Egyptian social relations in el-Quseir is unfortunately not documented. During World War II, the company's operations stagnated as a result of the two-year internment of all its Italian men, first in Qena and then in Geneifa near the Suez Canal (Pellegrini, 2011, pp. 181–183). Meanwhile, the Italian women and children were accommodated in the rest house, where they reportedly received medical and moral support from Egyptian employees (Pellegrini, 2011, p. 167).

4.3. Post-Nationalization

In el-Quseir and its mines, the wave of nationalization disrupted established social patterns involving the Italian and Egyptian communities. Italian company employees gradually left Egypt, the last migrating by September 1963. The Egyptian workers—numbering up to 2,000 before nationalization—presumably experienced temporary unemployment until the company's restoration



Figure 6. Egyptian and Italian pupils attending class in the elementary school at the coastal plant. Source: Pellegrini (2011, p. 142).



Figure 7. An Egyptian worker receiving medical treatment from an Italian physician and an Egyptian nurse in the hospital. Source: Pellegrini (2011, p. 134).



Figure 8. Egyptian and Italian company workers enjoying festivities at the desert plant. Source: Pellegrini (2011, p. 51).

into the new nationalized corporate structure by 1965 (Pellegrini, 2011). Following the departure of the Italian community, the Franciscan St. Barbara Church was incorporated into the Egyptian Coptic Orthodox Church in 1964 and renamed “St. Mary the Virgin” (Pellegrini, 2011, pp. 225, 240). According to Melcangi (2013, p. 62), the 1958 Italian-Egyptian cultural agreement saved all Italian schools in Egypt from closure. However, the continuation of the school in el-Quseir could not be confirmed by our sources. The school was used as an *in-situ* police station until recently. The *ex-situ* hospital became a learning development center continuing to serve the community.

Following the closure of the coastal plant in 1998, Egyptian workers were offered early retirement, leading them to search for alternative job opportunities and to leave el-Quseir in large numbers (Mostafa, interview, July 17, 2021). Mostafa (interview, July 17, 2021) reports on several terminated communal manifestations that were formerly part of the company’s daily routine, including the bell and provision of the meal. With the closure of the mines, all economic and social life ceased at the desert plants; they are completely uninhabited today. In the coastal industrial plant in el-Quseir, most buildings became vacant. However, a handful of former Egyptian employees of the phosphate company now occupy the residential houses of the Italian management *in situ* at the coastal plant and *ex situ* in the dwellings from 1906 (Mostafa interview, July 17, 2021). Despite it being

almost 60 years after their departure, descendants of the former Italian community continue visiting the town, the coastal plant, and the company cemetery and meeting former Egyptian colleagues (Malak, interview, July 17, 2021). Kamal El Din Hussein Aly Hammam, a pupil at the Italian school and later the first Egyptian director of the phosphate plant and a member of parliament under Nasser initiated the first attempts to preserve the architectural heritage testifying to the Italian history in el-Quseir, resulting in the preservation of the Italian cemetery (Pellegrini, 2011, pp. 54–56, 128, 148–153).

Debates on the heritage value of the site have become more heated since 2021, when remaining material artifacts vanished and the expedient removal of machines and structures stirred emotional responses among former factory staff (Mostafa, interview, July 17, 2021). Despite the demise of the last generation of laborers in the phosphate mines, young Quseirians still express identification with the industry. They take pride in their fathers’ and grandfathers’ occupations and memories at the company. They also mentioned the toll the removal has had on their parents’ emotional health (Al-Sayed, interview, July 17, 2021; Khamis, interview, July 17, 2021; Mostafa, interview, July 17, 2021; Sebaq, interview, February 25, 2020). Several re-use proposals have since been produced by locals, scholars, and other interest groups. Despite the ownership disputes between the Red Sea Governorate and the el-Nasr

Mining Company, recent investments succeeded in a temporary revival of the site. This is evidenced in the 2022 movie *El-Gareema* (The Crime) which was filmed predominantly in the coastal industrial plant, especially in the cafeteria (Figure 9; Abdel Khaleq & Arafa, 2022). This contributed to the re-establishment of infrastructural supply to the plant during filming, especially electricity and water (Mostafa, interview, July 17, 2021). The 2005 movie *Ahlam Omrena* [Dreams of Our Lives], which was filmed in el-Quseir, featured the cableway before its demolition (El-Zoghby & Abo Labn, 2005). Although these temporary investments succeeded in raising awareness of the richness of Egypt's industrial heritage, the future of the el-Quseir industrial heritage site remains in peril. The ongoing ownership disputes are still deterring potential investors with long-term conservation plans (El-Egeamey, interview, July 17, 2021).

An official heritage assessment of el-Quseir industry was completed in January 2022. The Egyptian National Organization of Urban Harmony (NOUH) only included three buildings in the coastal plant on the National Register: the locally known King Farouk Rest House (originally a building hosting the company's offices and director's house: Casa-amministrazione; Figure 10), the school, and the old administrative building (originally hosting the school's nature museum – *museo naturalistico*).

5. Discussion

The previous sections detailed patterns of the industrialization-induced transformations in el-Quseir

pre-and post-nationalization, uncovering intrinsic spatial linkages that were previously omitted. During the phase of phosphate exploration, the "Società Egiziana" adopted a mostly integrated pattern: Housing, social, and infrastructural facilities—like the food storage facilities, and the first desalination plant—were located adjacent to the old town and were often utilized by both Italians and Egyptians. After implementing heavy industrial structures for processing and shipping from 1914 onward, the company detached itself spatially from the urban core. Nevertheless, it continued to provide essential services such as fresh water and electricity. Only in the third phase, when Italian housing and social functions were transferred from the old town to the industrial perimeter, did a physical pattern of autonomy develop approximating the concept of a dual settlement. The new detached villas for management, the cafeteria, and the *in-situ* school and church exemplify this. Nevertheless, our research indicates a level of social attachment maintained between Italians and Egyptians outside of work-related activities both through shared routines and emotional identification with the plant. Owing to the limited duration of the research and scarcity of sources, it remains unknown whether the degree of social separation between Egyptian laborers and Italian employees was engineered to some extent by the phosphate company and if the proportional increase in segregation during the extension of the plant was intentional. Further research is needed to consolidate the findings, especially during the fascist period of operation and post-nationalization.



Figure 9. The cafeteria inside the coastal plant, where most scenes of the 2022 movie *El-Gareema* were filmed (left); the building was originally built as a restaurant, where Italians and Egyptians used to gather during lunchtime (right). Sources: Project fieldwork (2022; left) and Pellegrini (2011, p. 187; right).



Figure 10. The Casa amministrazione, probably during the 1930s (right), now locally known as the King Farouk Rest House (left). Sources: Project fieldwork (2022; left) and Pellegrini (2011, p. 77; right).

The boom of the phosphate company during the 1920s also introduced the first permanent physical traces of the desert plants. Even though the desert plants were spatially and operationally detached from each other, they shared the same functional layout, building typologies, and by all accounts, the same socio-cultural patterns and can be considered examples of extractive colonies par excellence. For the rapidly growing detached mining towns, the coastal processing and shipping plant served as the spatial linkage to the global economic circuit of the phosphate industry. It was also the locus of attachment to the Italian community, where the workers from the “utopian” mines were (re-)adjusted to the Egypto-Italian collective values by means of religion, education, and shared leisure activities. This pattern of intermittent remote socialization could only be maintained via a newly industrialized desert landscape intersected by roads, railways, telegraph lines, and radio signals. The history of the desert plants’ planning and construction remains a sketch at this point and deserves further study.

The nationalization of the Italian phosphate company and later the shutdown of el-Nasr for mining severely impacted the physical and socio-cultural patterns, causing the complete detachment of the mines which have consequently also ceased to be part of the collective memory. The mines were rarely mentioned in the interviews. The redirection of the phosphate supply chain towards Hamrawein port, a remote location without a previously existing settlement, finalized the physical and

social detachment of the phosphate industry from existing urban structures in the Red Sea Governorate. It also undermined the pivotal economic position of the coastal plant, which quickly became obsolete. Successively, the detachment was physically enacted through the dismantling of the railway, the desertion of the desert plants, and finally dismantling and neglect of the coastal industrial plant. Quseirians now commute to other cities in the governorate for work, including the main tourist centers Hurgada, and Marsa Alam or Safaga with its industrial port (Sebaq, personal communication, November 8, 2018). Today, the coastal plant stands apart from the town, mostly detached functionally except for the Coptic church, a key socio-cultural node for Copts in el-Quseir and the surrounding region. We argue that this selective heritage listing by the NOUH only consolidates this process of detachment and ignores the relevance of the industrial processes and routines and their linkage with the revitalization of the city. It also fails to consider the intrinsic cluster value of the spatial interlinkage between the coastal plant, the desert plants, and the town of el-Quseir.

6. Conclusion

El-Quseir is a key witness to Egypt’s peripheral history of industrialization that caused discernible morphological and socio-cultural transformations still traceable today. Our research documents the massive interference of phosphate production with the el-Quseir environment.

On the regional scale, an entire desert landscape has become mechanized, electrified, interconnected, and partly urbanized. On the city scale, industrial imposition and revitalization have changed the urban fabric of el-Quseir permanently. Neglecting this irrevocable structural and socio-economic imprint, the heritage listing fails to protect any artifacts testifying to the extraction, processing, or exporting of phosphate. With no major conservation or conversion project underway, the question remains: How to preserve the tangible structures as well as the intangible patterns of this important industrial heritage? Owing to the large extent of the mining operation, listing all physical structures is unlikely, and given the lack of dedicated funds to the NOUH, there is no guarantee for preservation either.

Recognizing the lack of a socio-cultural approach in the current architecture-focused debate on industrial heritage in Egypt, we have initiated the uncovering of local, current-day attachment to the phosphate plant. To this day, the academic discourse on el-Quseir is dominated by an Italian-centric narrative and hence cannot—and does not claim to—represent an Egyptian perspective. We identified the memory of the Egyptian workers as a major research gap in the academic discourse, which is repeated in a similar fashion in other studies of Egyptian industrial heritage as well. Our local interviews revealed that the phosphate era still looms large in debates, memories, and attachments of Quseirians and showed the state of obscurity the mines and their surrounding settlement have already fallen into. While at this point the findings remain exploratory and a comprehensive study will be necessary for conclusive findings, it became apparent that—in the case of el-Quseir—memories of industrial heritage are attached to activities and interactions rather than being reified and reduced to symbolic veneration of built structures. A tangible and intangible program of “re-attachment” should recognize the importance of these physical and sociocultural traces of phosphate processing while also utilizing the enormous re-development potential of the company site for filling the vacuum that the shutdown of production has created, both economically and socially.

Consequently, we argue that the cluster value—representing the agglomerated physical and socio-cultural patterns induced by industrialization—is the key heritage value of the site(s). Their preservation requires an impartial assessment of the intrinsic role of all seven desert plants as the “main growth engine” of the phosphate company plant, just as much as understanding urbanization processes around the phosphate industry is dependent on continuously centering the currently marginalized experiences of the Egyptian workers and employees in the phosphate plant and mines.

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Conflict of Interests

The authors declare no conflict of interests.

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