European construction companies in the towns along the Suez Canal

Les entreprises de construction européennes dans les villes du canal de Suez

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The archive collection of the Compagnie Universelle du Canal Maritime de Suez (known in English as the "Suez Canal Company"), the joint-stock company formed in 1858 by Ferdinand de Lesseps to build, maintain and operate a canal connecting the Mediterranean to the Red Sea, is one of the richest corporate groups of archives in France. This private collection, placed on deposit at the Archives Nationales in 1977 by the Association du Souvenir de Ferdinand de Lesseps et du Canal de Suez, has been located since 1995 at the Archives Nationales du Monde du Travail in Roubaix. The main source for primary university research on the history of techniques and economic history, it has yet to be studied extensively by architectural historians, despite the fact that the structures built by the Suez Company during its tenure in Egypt (1859-1956) constitute an exemplary case study of the ways European corporate architecture spread south of the Mediterranean in the 19th and 20th centuries.

The Suez Company, which had not contracted to build anything other than the canal and its ports, was very quickly faced with the issue of accommodation for its employees. The canal’s route crossed desert zones where construction camps had to be created from scratch to house the men and to store and maintain the machines used on the worksite. After the canal began operating in 1869, the company had to undertake further construction projects, building offices for the Company’s administration and, throughout the 20th century, accommodations for its numerous expatriated European employees (accountants, engineers, pilots, skilled workers, etc.). Although the town plans are attributed to Company engineers, construction projects were systematically contracted out to “entrepreneurs”. In the same way, until 1921, the Company lacked an in-house architecture department, and had to call upon independent architects to draft plans, the supervision of which was then entrusted to its engineers. Thus the Company’s archives can inform us about various facets of the entrepreneurial world in Egypt between 1860 and 1950. On the one hand, they shed light on the role of the Company as designer and then administrator of the towns: like other 19th century French company towns, Port Said and Ismailia were created by Suez engineers. It laid them out, defined the zoning, conceded plots, and managed the public areas until 1869, when the Egyptian government integrated them into Egyptian common law. Moreover, the abundant material the archives contain documenting construction (architects’ plans, technical drawings, works contracts, photographs) reveals the swarm of European construction businesses gravitating around the Company: small companies which owned innovative patents, Egyptian branches of major European corporations, small traditional building-trade companies managed by Europeans living in Egypt. Before examining these contractors more closely, we shall briefly review the Company’s role in the creation of town plans.

Company towns

In 1861, a master plan for the first camps, established along the route of the future canal and spaced at regular intervals from north to south, was drawn by the Company engineers, under the supervision of the civil engineer François-Philippe Voisin (known as Voisin Bey), general manager of works and chief agent of the Company between 1861 and 1870. The two main camps, each of which housed a division of the works, spawned two of the three cities of the isthmus: Port Said, located at the mouth of the canal in the Mediterranean, and Ismailia, placed halfway between Port Said and Suez, the small Red Sea port which existed before the canal. The plans adopted grid layout pattern from military engineering, but without walling off the compounds. Like other company towns, however, communities were segregated by “race.” Housing and community services for European managers and workers were separated from the “Arab village” for Egyptian laborers by the garages for heavy machinery. The initial plan for Ismailia – located at the canal’s halfway point to serve as the capital of the isthmus – comprised
a series of repetitive square modules (the Greek square, the European square, the Arab square). Depending on the company’s needs, it could extend unimpeded along the freshwater canal\(^{169}\) and a large port (which would finally be abandoned). According to Nathalie Montel, the plan was “the ultimate manifesto of the reasoning of a Second Empire engineer, applied on a city-wide scale.”\(^{170}\) Less known, because they were not implemented in the field, the initial layout for Port Said represented the same bias: as early as 1859, the engineers projected a town on a grid pattern centered on a harbor basin separating the European neighborhood from the Arab one.\(^{171}\)

**The contractors who built the towns**

Between the beginning of the works and 1956, the profile of the entrepreneurs (nationalities, geographical area of activity, etc.) and their method of selection evolved.
Suez Company European workers' housing, Port Tewfik, Suez (1922), Paul Albert, arch.; Almagià, cont. (photo by A. du Boistesselin)
Suez Company warehouses, Port Tewfik, Suez (1930), Paul Albert, arch.; Baume & Marpent, cont. (photo by A. du Boistesselin)
In addition to supplying the cabins for the camp along Port Said beach and a special cabin for Ferdinand de Lesseps in Ismailia, the company was hired to make and install the imposing Oriental-style veranda on the “headquarters” at Ismailia in 1863. The letters exchanged with the Company’s engineer, James Pouchet, demonstrate how difficult it was, day by day, simply to finalize the technical details. The construction phase was also arduous, because the French company had trouble dispatching workers to assemble the prefabricated elements. This experience perhaps explains why the Company quickly stopped importing prefabricated components from Europe. After the canal was opened, carpenters and masons worked onsite using imported materials, such as Nordic wood, lime from the Teil, and tiles and bricks from Marseille. As time went on, more locally-produced materials were used: Egyptian cement bricks, rubble stone, and “Sornaga” tiles.

The Company finally opted for wooden constructions from Victor Fréret & Cie in Fécamp (Normandy), because “it was the only one to agree to take care of the transport and mounting in situ for a fixed price […], and in addition it was perfectly familiar with Egypt where it supplied provisions to barracks […], and it was a shareholder in the Company.”

Early on, French companies were preferred, irrespective of what was being commissioned, but later decision-makers chose contractors depending on the type of structure to be made. In 1858, in anticipation of the beginning of the works, the Company issued its first invitations to tender for the supply of “workers cabins.” About twenty companies, mostly French, responded. Some were suppliers to the army, such as Godillot which made tents, in addition to the soldiers’ boots to which it gave its name. Unusual designs were suggested, such as the construction of huts in matting (“Guillot system, patented SGDg”) by Frédéric Latour based in Clichy. Likewise, Stierlin & Cie presented constructions in sand roofing felt, entrepreneur Émile Revest suggested using asphalt roofing paper, and the British Caoutchouc Company, Beck and Peupin, recommended its specialty, rubber.

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By the early 1900s, the Company method for awarding contracts for the construction of housing and offices left little room for innovation. Specifications were prepared by the Company (which imposed materials, such as rough stone and marl produced in its own quarries). The contracts were then put to restricted tender or, for smaller contracts, allocated by mutual agreement. It was Company strategy to stagger its operations, to limit the size of the contracts. Most contracts were awarded to small firms, local licensees of maintenance work on the Company’s buildings, which rarely did business beyond the eastern Nile delta. J.-W. Williamson, then Marino & Bevilacqua of Ismailia, won many contracts, as did R. Lomolino, Figlio & Cie in Suez, which was retained without a call for tenders for a job in 1911 because, wrote the Company senior officer, “we consider from several points of view that there is an advantage in giving work to our ordinary entrepreneurs who are familiar with our methods, including the workers, among which we have eliminated the least good, are today the best in the country, and finally because, working constantly for us, they do not try to exploit us, because they know that in this case, the
punishment would be the cancellation of the contract for repair, which we renew at the beginning of each year.”

This distrust of large local entrepreneurs explains no doubt the small number of contracts awarded to the big Port Said construction firms during the inter-war period. The Italians, Archimede Petraia and Spiro Scarpa, missed out, as did Alberti, originally from Switzerland. Like Suez contractor Ugo Roccheggiani, they had all built tenements for private investors as well as large structures for the Egyptian government or foreign communities. Mutually agreed contracts were also used for low cost operations involving a specific construction process. For example, the stone quarrying company in Attaka, near Suez, owned by A. Bos (domiciled in Dordrecht in the Netherlands) was chosen to build tenements for indigenous workers at Port Fuad in 1919 thanks to “its interesting design for 3 blocks of 16 home units. Bos was lauded by Suez managers in 1931 for “again reducing the price of the 24 home units by adopting an economical type of construction in thin and porous concrete, common in the Netherlands and Belgium.”

When there was a restricted call to tender, the Company preferred to invite three or four European companies that were well established in Egypt, considering them capable of meeting very tight deadlines. In 1907, it consulted three companies from Cairo for the construction of villas designed in 1906 “by the staff of the architect Fabricius Pacha”: Garozzo & Son, Guérin, and MM. Padova & Rolin. Garozzo had built the Museum of Egyptian Antiquities of Cairo and, like Padova & Rolin (which would become Léon Rolin & Co), a licensee of the Hennebique reinforced concrete patent in Egypt. Companies based in Alexandria were also involved in major contracts for housing: Fumaroli built 50 homes for European workers in Port Said in 1912 and then won the contract for another 60 homes in 1921. Lanari & Dessberg built 44 homes for indigenous workers in 1919, and responded to the call for tender for the construction of two apartment buildings in Port Said for canal pilots, a job Léon Rolin & Co also submitted a bid.
However, the choice of a major company did not guarantee good workmanship. Thus the Suez waterworks, built in 1930 by Bertagnol & Cie (later Travaux du Midi), based in Cairo since 1927, began to crumble within two years, and had to be consolidated. The Company granted the second contract to the local Greek company managed by Terzis and Stavropoulos, whose bid on the first job had been rejected. The market for industrial structures and infrastructure differed, being more open to international companies and, at times, to innovation.

In 1869, the Company built a new lighthouse at Port-Said, to replace a wooden one dating from 1857. The contract was granted to François Coignet, who was experimenting with a new pre-cast concrete construction process that had been perfected in Saint-Denis in the Parisian suburbs. The Company had established ties to Coignet in 1860, attracted by his patents for pre-cast concrete blocks. Moreover, Coignet’s father owned the Lyon chemical company that supplied the Company’s matches! The first precast block construction was commissioned in 1864 by Lavelley, one of the subcontractors on the canal, for his own home in Port Said. The novelty of the technique did not inspire new architectural forms. The lighthouse erected by Coignet was a copy of one designed twenty years earlier by Léonce Reynaud when the Phare des Baleines at the tip of the Ile de Ré (off La Rochelle) was renovated: “We felt obliged to adopt the Phare des Baleines as a model which combines elegance with solidity, we only made minor changes: reduction in the thickness of the interior masonry by 0,20m and removal of the consoles supporting the cornices. The reduction in thickness was justified by the nature of the masonry which, comprised of seamless superimposed monolithic rings, creates a uniformity in the mass never equaled by ordinary masonry, even of cut stone.”

Between 1891 and 1894, the company, at the time managed by Edmond Coignet and with a new patent (masonry and iron combined), completed the harbormaster’s compound at Port Said (Charles Marette arch.). Next, Coignet was hired to build the administrative residence in Port Tewfik (Suez), as well as the employee housing on the waterfront there. But by then, pre-cast concrete already seemed old-fashioned, compared with the new patents for reinforced concrete being developed in Europe.

In 1876, the Company commissioned its first steel constructions from European mills, such as the Bazin company’s footbridge, shipped from the Gustave Eiffel company in Levallois-Perret, outside Paris. The lock gates of the fresh-water canal at Ismailia were supplied in 1877 by Ernest Gouin & Cie (parent of the Société de construction des Batignolles). In 1893, the Company contacted the Belgian company Baume & Marpent, which had just created a base in Egypt, to supply the steel structures for its large constructions. It commissioned reservoirs for the Port Said waterworks between 1905 and 1909, buoys for the canal entrance, and steel frames for the Sherif Basin dock hangars in Port Said. From 1913 until 1930, Baume & Marpent’s Cairo workshops forged all the steel frames for Company hangars, workshops, garages, and warehouses at Port Fuad and Port Tewfik. In 1934, Company architect Paul Albert, drawing inspiration from the Port Fuad and Port Tewfik schemes, designed the workshops at Ismailia. The company Fils, Barthe-Dejean was granted the contract as the local representative of the French company Fives-Lille, which supplied the steel parts. The Company’s chief engineer, Paul Solente, justified the refusal of the more advantageous offer of the Ateliers
Atmeda in Cairo because “the difference (in price) was insignificant, I considered that it was preferable not to try out local steel construction on a building this important.”

Similarly, for the construction of its waterworks for Suez in 1910, the Company teamed the Cairo reinforced concrete builder Léon Rolin & Cie with Henri Chabal, a Parisian entrepreneur specializing in water treatment, because the chief engineer Perrier considered that they were “the only entrepreneurs capable of carrying out the works quickly while offering the best prices.”

Suez Company constructions:
Technical innovation meets architectural conformity

For the digging of the canal (1859-1869), the Company engaged firms that pioneered outstanding technical innovations. But relative conformity characterizes nearly a century of its urban and architectural constructions. Traditional stone housing built for European workers in the 1920s was generally inspired by pre-World War I French industrial models. Towns built for the indigenous population copied
Projet de Phare
au Hôtel d'Aglosnière
Sydney Coignet
1820
Port Said lighthouse (1869-1870),
François Coignet, cont.: Plan, section,
elevation and calculation notebook
Suez Company workshops, Port Fuad, Port Said (1919), Paul Albert, arch.; Baume & Marpent, cont.: Interior metal framework and machines.
the community organization model tried out by the Empain company at Heliopolis, in the suburbs of Cairo.\textsuperscript{194} Large structures, like the churches erected between the two wars (Louis-Jean Hulot, arch.) adopted a highly conventional Neo-Romanesque style, far from the modernist experiments being carried out in Europe.\textsuperscript{195} Coignet’s 1869 Port Said lighthouse was thus the sole construction that showed true technical progress, experimenting with a new concrete technique on a large scale. However, as noted above, its shape was inherited from older models. The audacious architectural scheme for a surgery pavilion at Ismailia Hospital, designed by the American architect Paul Nelson in association with Vladimir Bodiansky in 1934, was not built, due to cost considerations.\textsuperscript{196} By relying on local companies whose capabilities and limits it knew, the Company sought, above all, to master the profitability of its construction projects. It may have failed to support avant-garde architectural schemes, but it satisfied its shareholders. Its choices in the field of town planning were guided by the same pragmatic approach.
Overall plan, Kosseir Mines (c. 1939)
Prospectors’ refuge in the Wadi Semiuki valley (1930)
Gebel Duwy mine: section on the concession 52