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## SOWLINY — THE CENTER OF THE PETROLEUM INDUSTRY AT THE VERY WEST END OF THE CARPATHIAN-GALICIAN PETROLEUM ROUTE. CURRENT CONDITION, PROBLEMS WITH REVITALIZATION

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### 1. Introduction

The revitalisation of post-industrial sites is particularly important in small towns. On more than one occasion it was industry that built their present importance, began their development. When industrial production stopped, a series of crises started — the loss of identity, loss of economic potential, depopulation [5]. Former industrial complexes are particularly vulnerable to accidental re-development and devastation, regardless of the historical value and importance to the inhabitants.

Sowliny, a district of Limanowa contains the remains of a large industrial complex, founded in the early twentieth century. The oil refinery stopped its manufacturing operations and what remains is now falling into oblivion. At the time of the growing popularity of the adaptations of post-industrial areas, it is worth analysing the history and the possibility of re-using the publicly owned lands and buildings. The oil refinery complex has been neither researched nor catalogued until now (2012). Due to the attractive location, the large number and variety of objects which have survived — the Refinery, although presently forgotten, is an asset for the town.



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## 2. The history of the complex

The history of the refinery dates back to 1904, when the French company Desmarais Frères, as a result of the tax policy in its home country, began the construction of a processing plant. The plant had to be close to oil sources (the Borysław-Drohobycz basin<sup>1</sup>) to be more cost — effective. Smith just as Desmarais Frères historians wrote that it was “the best equipped refinery in Europe” [16].

45 morgas<sup>2</sup> were purchased from Kazimierz Mars<sup>3</sup>, who was the owner of the property (land and manor house<sup>4</sup>) in Sowliny. In 1905, French entrepreneurs established a joint-stock company in Vienna, Licht und Kraft Gesellschaft, which was to govern the plant [9]. In 1907 the “industrial consensus on the building of oil refinery, equipped in factory method, combined with the refining of gasoline and lubricants in Sowliny” was issued on 16 January and 16 April [8]. In the same year, the construction company, Józef Korn JSC from Bielsko began the construction of buildings, the equipment of which was mounted by Brunn-Königsfekder Maschinenfabrik from Brno<sup>5</sup> [9]. The French invested GBP 500 000<sup>6</sup> in Sowliny creating a refinery with a capacity of 150 000 tonnes [4]. The chief technologist was Józef Florian, Eng.<sup>7</sup>. At the end of 1909 the plant was completed and began, the manufacturing of kerosene, gasoline, lubricants, oils and paraffin candles commenced [9].

Austria-Hungary was the third crude oil producer in the world at that time (after the United States and Russia). It is worth of mentioning that in those days oil resources seemed unlimited, control of the sales markets (lighting kerosene had the widest appeal) was more important than securing the oil fields. Both the United States and Austria-Hungary were producing more oil than was needed. Standard Oil<sup>8</sup> dominated the market and the last stronghold, which was outside its influence, was Galicia until the refinery in Czechowice-Dziedzice<sup>9</sup> was constructed.

In 1910, high rail taxes<sup>10</sup> were imposed on Vacuum Oil to protect Austrian companies. The same discrimination was imposed Limanowa’s refinery, which was suspected of collaborating with the Americans. Striking French businesses resulted in a diplomatic conflict and the refusal of a loan to Hungary. Further potential losses convinced

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1 The company purchased crude oil fields in Borysław, Mrażnica, Strzelbice, Trustanowice, Pasiczna and gasoline factory in Mrażnica (today in Ukraine).

2 Morga – historic unit of land measure — about 0.6 ha.

3 Kazimierz Mars originated from the family of the owners of Limanowa and Stara Wieś. One branch of the Mars family was related to the crude oil industry in the Borysław district.

4 All the buildings were demolished.

5 Presently the Czech Republic (2012).

6 This can be compared with an investment of PLN 800 million today (2012).

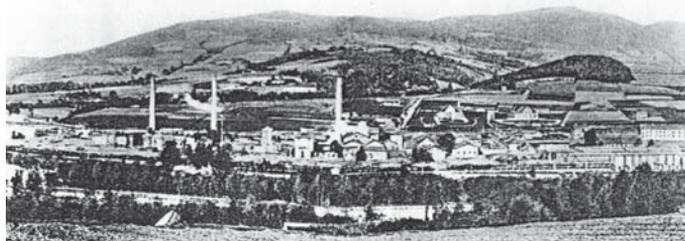
7 Engineer, a major figure in the history of Limanowa was the only Pole in the management of the refinery [17].

8 Trust headed by J.D. Rockefeller.

9 Refinery in Czechowice-Dziedzice was the Austria-Hungary subsidiary of the Standard Oil-Vacuum Oil Company.

10 Frank writes about the taxes imposed on Czechowice-Dziedzice and Limanowa and the diplomatic consequences [4].

Austro-Hungary to withdraw sanctions placed upon Limanowa<sup>11</sup>. What is important, however, was that they were maintained in Czechowice-Dziedzice<sup>12</sup>. As a result Limanowa, thanks to its privileged position, was dumping prices in Galicia and Hungary. As Frank writes, the Austro-Hungarian government was conscious of this, but did not counteract it [4]. Meanwhile, the refinery in Sowliny (Fig. 1) was raising the entire region out of poverty<sup>13</sup>.



**Fig. 1.** Sowliny, oil refinery. General view from the west. Interwar period state. Archival postcard. Publ. M. Olszewski, 1917

Before the outbreak of World War I, French staff left and the refinery stood idly until 1916. In 1916, the plant was confiscated by the Austrian Ministry of War and production was resumed. The Polish army took command in 1918. The refinery was given back to the former French owner in 1920 [9]. The refinery was collapsing, as a result of aging equipment and strong competition on the market in 1930. It led to its closure from late 1935 to 1936. The factory of barrels and solid lubricants remained in operation. During WWII, production was resumed for a short time. During the evacuation, the Germans dismantled and transported a majority of machines to the Reich [15]. After the war, the refinery could only be used as a fuel base. On 1<sup>st</sup> October 1945, the barrel factory was launched [11]. In 1948, barrel factory was separated from the refinery (connected to United Wood Industry). Other units with residential buildings were provided for the Petroleum Products Headquarters<sup>14</sup> in Warsaw. CPN turned the refinery into the supply base, which was in operation until the 1990s. At the end of the 1940s, two chimneys were demolished. The third, the last one, was demolished in 1997<sup>15</sup>. In 2001, the land belonging to PKN Orlen was taken over by the county government. A programme entitled — “The revitalisation of the former fuels base in Limanowa — Sowliny” was implemented on a part of area and was finalized in 2007.

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11 The oil refinery in Limanowa committed not to help the Vacuum Oil Company [4].

12 Despite the efforts of American diplomats, concessions in Limanowa did not cause concessions in Czechowice-Dziedzice. Due to the prolonged conflict, Vacuum Oil was forced to accept limits of manufacturing and marketing, established by the Austrians [4].

13 Limanowa was full of poverty before the creation of the refinery [2].

14 Polish name: Centrala Produktów Naftowych abbr. CPN.

15 The chimney was about 55 m high with a diameter of 2.7 m in the narrow end [1].

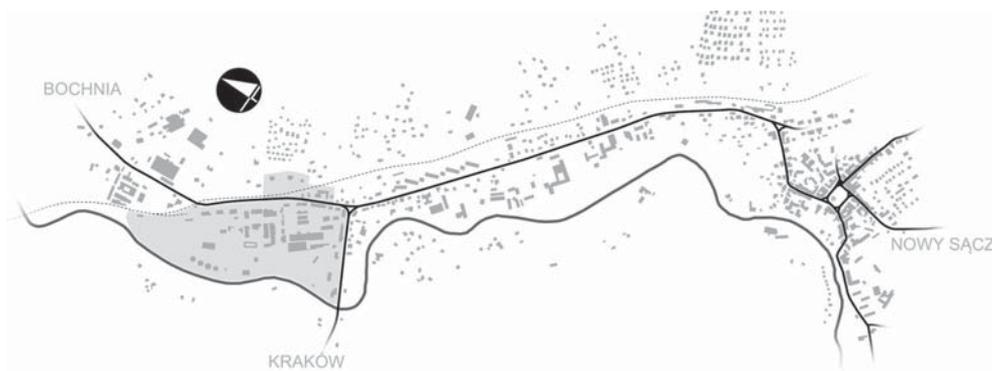
### 3. Area characteristics

#### 3.1. The location on the regional and town scale

The refinery in Sowliny was the centre of the petroleum industry at the very West end of the Carpathian-Galician Petroleum Route. The route connected the Borysław-Drohobycz Oil Basin with Limanowa in the West and with Kosmacz in the East.

The industrial plant was located in a valley between the Sowlina stream, the road to Cracow, the road to Bochnia and the Galician Transversal Railway line. The proximity of the railway was crucial factor in the localization, as oil from Borysław region and coal were being delivered by rail<sup>16</sup>. The area of the plant was away from existing buildings (about 3 km from the market square of Limanowa). After the site was selected, the plans were developed by French engineers (this might have been done in collaboration with Czechs and Polish specialists).

Presently (2012) Sowliny are in the north-western district of Limanowa (Fig. 2). Roads running by the refinery complex have grown in importance due to the increase of traffic, contrary to the railway on which the passenger traffic has stopped. The facility was once surrounded by undeveloped lands, it is now encircled by an urban landscape. The road from the refinery to the market square has become the axis of urbanisation, connecting the two poles of development (nodes). The location by the Sowlina stream, along which boulevards run, offers a chance to integrate a part of the post-industrial site with the town's public spaces system. The well-preserved historic architectural complex (due to the individual character of the space and style) has a growth potential not only for this part of Limanowa, but for the entire town.



**Fig. 2.** Limanowa, contemporary map, oil refinery complex marked in grey.  
Drawn by A. Szewczyk 2012

<sup>16</sup> When the refinery was being built, the siding was built as well. The refinery was equipped with its own fleet.

### 3.2. The spatial arrangement of the complex

The historic urban layout of the complex remains distinguishable. The north-east area was allocated for industrial buildings (refinery buildings, tanks, railway siding), the south-east side for auxiliary buildings (barrel factory, tanks, residential and community buildings). The production area was located as far as possible from the town, residential areas — closer to Limanowa, on the existing routes. The entire complex historically consisted of three functional parts (Fig. 3)<sup>17</sup>: the industrial (plant), residential and communal & “recreational”<sup>18</sup> (a buffer zone between the first two).



**Fig. 3.** Sowliny, historical division of the refinery complex into functional zones: hatched — industrial area, dotted — living areas, filled — part of the communal — „recreational” area. Drawn by A. Szewczyk 2012

The refinery’s administrative buildings connected by a decorative gate are a continuation of the plant fence. It should be emphasized that, apart from the buildings strictly associated with the industrial and residential functions, social buildings and public places were also planned.

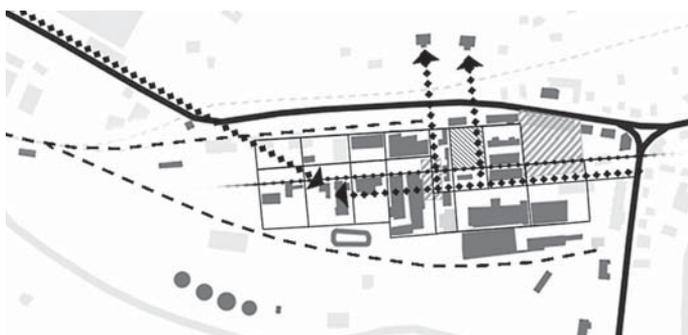
The composition of the industrial part is based on the road to the former manor house [12]. This axis intersects the management building and has its extension outside the plant (Fig. 4). The communal areas, recreational areas (garden with chestnut tree in the middle) and sport facilities were situated along this route. The second longitudinal axis of composition is the main road to the plant (running through the gate). The entire system is based on the scheme of the orthogonal grid. The internal roads are designed to minimize collision with the railroad tracks.

Attention to the harmonious composition of the spatial plan can be seen (Fig. 4). The tallest building in the complex — the fire brigade tower was planned as the scenic closure of

<sup>17</sup> Area of the industrial part — about 35 ha.

<sup>18</sup> Common buildings for the entire community were located in this zone (i.e. the “casino”, shop, canteen, orchestra building, coach house, stables).

the main road to the plant (north) and the road from Bochnia (south). Residential buildings (the director's and the chief technologist of production's villas) are also compositionally combined with the development system. It is worth noting that the director's villa closes the transverse axis constituted by south-eastern border of the garden, and the technologist's villa is visible from the refinery's entrance square. Both are situated higher than the main complex (Fig. 5), which was inscribed into the existing topography. The production process and storage system was also adapted into the topography. Representational objects, rich in architectural forms were located along the roads, in visible places.



**Fig. 4.** Sowliny, the refinery's former compositional plan: rhomboid line — scenic axis, black, dotted line — the main axis of composition, dotted — squares, hatched — garden. Drawn by A. Szewczyk 2012



**Fig. 5.** Sowliny, W-E section. Scheme of the oil refinery complex fitted into the topography. Drawn by A. Szewczyk 2012

### 3.3. Spatial problems

At present (2012), the refinery does not operate as a unified group. The industrial areas are being divided and built over successively with production facilities of companies that have moved into the area. This situation was caused by the records of the local land use plan [18]. The basic use of the land was established for production and commercial activities, technical and business maintenance. Part of the site has been converted into Limanowa's Economic Activity Zone. Investment activities of the new land owners of the former plant<sup>19</sup> aim to first

<sup>19</sup> The concrete plant is located, among others, within the Limanowa's Economic Activity Zone. There are plans for localization of a rolling mill.

demolish the existing buildings which will result in the blurring of the historical spatial plan. The construction of the new facilities does not require as much investment outlay as the smart adaptation of what has survived. A significant dissonance exists between the intentions of the investors (sanctioned by the local development plan) and the cultural value of the location<sup>20</sup>.

The local land use plan requires the coordination of projects in the area with the Regional Office for Monuments Protection. However, the former refinery buildings are not registered monuments, which limits their protection against radical reconstructions and enlargements. The only strict guidelines in that plan are: to maintain only one entry to the area (through the historic gate), not to locate buildings between the villas and the remains of the plant and residential facilities and to restore the park greenery. Other guidelines and restrictions are specified by Regional Office for Monuments Protection individually, to a large extent, depending on the investor's plan and quality of the architectural concept.

The primary function of the residential areas are sustained, the surrounding gardens were degraded by the lack of systematic care. The communal and "recreational" areas were mostly converted into residential areas. Some areas, previously undeveloped were transformed to multi-family residential estates (new investments have been inscribed in the orthogonal plan).

Investments in the industrial part have obscured the scenic closure and silhouette of the refinery, which was visible from the road to Bochnia. This is particularly important, as the complex could have been an attractive, authentic gateway to the town (Fig. 6).



**Fig. 6.** Sowliny, contemporary buildings (black) against the original plan.  
Drawn by A. Szewczyk 2012

#### **4. Landmarks, the state of preservation**

The industrial buildings were built of red brick and were not plastered. The roofs are gabled, steep, some of them have gabled, ridge skylights. Most of the objects which survived are neglected, unused since the post-war years. The original dimensions have been retained

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<sup>20</sup> Functional absorption of the historic buildings does not include the adaptation into the desired type of production facilities.

however the building material was destroyed, especially the basements. The largest and the one of best-preserved objects is the oils hall (with an oil basin in the western part). The eastern part of the building is marked by water tower topped with an arched roof (Fig. 7).



**Fig. 7.** Sowliny, hall of oils with water tower, north view. Photo A. Szewczyk 2011

The fire station, which is the best preserved building is situated next to the oils hall<sup>21</sup> building of the site (Fig. 8). The tower form (over 20 m high) with garages for fire vehicles, steel balconies and a lantern at the top constitutes the dominant of the complex. Other manufacturing and administrative facilities are single-storeyed buildings, one of them has a large semicircular window in the gable wall (Fig. 8). The former oil packaging hall — the building closest to the main gate is the only building which has been completely refurbished. The preserved refractory walls<sup>22</sup> for oil and gasoline tanks are also noteworthy. One of the most interesting places is to be found in the vicinity of the Sowliny stream (Fig. 9) are four cylinders where there are four storage cylinders.



**Fig. 8.** Sowliny, industrial buildings, north view.

From left: refractory wall, production bd. 1 (with a half — rounded window), 2, workshops (behind the trees), fire station, hall of oils, concrete refractory wall.

Photo A. Szewczyk 2011

Analysing the criteria of the best way to revitalise and the land ownership (Limanowa County Office), “cylinders” are the easiest aspect for permanent regeneration [13]. A new entry to the complex may be considered so as to separate traffic associated with production activities and hence, increase the attractiveness of the plots, conducive to commercial investments. The location of the facilities which significantly affect the environment, reduces the possibilities of a creative renewal programme.

21 It was leased as office space until 2010.

22 The tanks were surrounded by walls for fire protection.



**Fig. 9.** Sowliny, tubular, refractory walls made with brick, west view. Photo A. Szewczyk 2011

The former refinery residential facilities are in better shape than the production facilities, due to the primary function which has continued without interruption. The interior subdivisions did not impact (apart from a few exceptions) the size of the facilities and their architectural design. The historical forms of development can be distinguished: two villas — originally single — family, each with a garden<sup>23</sup>, managers' villa, foremen's villa (former school)<sup>24</sup>, three tenements, two blocks of flats and workers' accommodation building. The villas as well as two of the three tenements and blocks were designed as repeatable within the complex.

Villas (Fig. 10) are designed in a temperate historicism and Alpine regionalism style (rich in carpentry details). The structures are characterised by a symmetrical plan of the elevation. The exception is the veranda (repeated in both buildings), situated in the central part but shifted to the left half of this module. The brick walls are finished with two kinds of plastering — smooth, white and grey “lamb style” were contrasted. The large windows have decorative borders and friezes are located under the eaves. All the residential buildings' plans are based on shapes composed of rectangles. They are covered with steep, gable roofs, the gables are emphasised (for example by pediments). A common element of all the buildings is the sandstone basement walls.



**Fig. 10.** Sowliny, residence of an oil refinery chief technologist. Photo A. Szewczyk 2011

23 Objects are ranked from most “luxurious” to “normal” types of accommodation — all of them provided high a standard of living (in comparison to Limanowa’s housing standard in the early twentieth century). They were equipped with electricity, water supply, sewage system and central heating from the very beginning [6].

24 Wroński draws attention to its similarity to the work of Z. Mączyński (architect of Limanowa’s basilica) presented at the “Exhibition of Architecture and Interior Design in the Garden surrounding” in 1912 [19].

The former “casino” — type social club (Fig. 11), remained and, as years ago, was the most representative building of the refinery property. Despite the expansion, it did not lose its historical nature as can be seen from the road. The “casino” is in good condition, although the current function of the facility — a Social Welfare building — significantly limits the possibilities of sharing it with interested parties.



**Fig. 11.** “Casino” — west view. Photo A. Szewczyk 2011

## **5. Undertaken actions, existing state and the potential of the area**

The oil refinery in Limanowa has been selected (within the ROPSIM<sup>25</sup>), as one of ten<sup>26</sup> contaminated sites from the Małopolska region for which a model strategy of reducing or eliminating adverse impacts on the environment should be developed [14]. The “Revitalisation of the former land of fuel base in Limanowa — Sowliny” project emerged as the effect of being in this group. It included: the study of the land’s contamination, a drainage systems project, modernisation of the building of the former hall of oils packaging, the elimination of surface outbreaks of contamination and the removal of unnecessary post-industrial infrastructure. The costly investment (about PLN 4 100 000) has generated new jobs but mainly (according to regional spatial plan) in manufacturing plants, which do not generate valuable public space, and are not conducive to the vitality of this part of town, and in general devastate the post-industrial heritage (Fig. 12).

The area is still largely contaminated, which is a burden to its owner, who is eager to sell the land regardless of its spatial layout. The new owners are fencing the areas and building new facilities which blur the orthogonal composition. The county and town policy promotes modern industrial investments which do not fit the scale and specificity of the production to the existing buildings which are the heritage of the former technique.

The lack of ideas how as to the area can be managed results in problems with maintaining the heritage in small towns. The low awareness of the value of the former industrial area is another problem — it is commonly connected with contamination, pollution and

25 Abbr. Registration of Polluted Sites in the Małopolska Region.

26 4000 facilities were evaluated in the first stage.



**Fig. 12.** Sowliny, view of industrial area of the refinery — west view — concrete factory — on the north cylindrical refractory walls — on the background historical buildings — oils hall, fire station.  
Photo Limanowa County, offer of the plots for sale 2011

noise (in spite of social sentiment). In Sowliny, the former oil packaging hall was divided into spaces for lease with no care paid to the quality of the environment, the improvement of the surroundings and the recognition of real needs. The absence of innovative, smart ways to reuse post-industrial sites and lack of social dialogue with the residents lead to investments that do not generate social ties and are economically insecure. This kind of revitalisation often puts off the degradation, but do not contribute to the sustainable improvement of the area.

According to Gzell, one of the features of small town solutions are works that do not dominate the environment and are also not dominated by them, therefore, they fit properly into landscape [7]. In Limanowa — Sowliny this order sanctioned by time is threatened with the emergence of large production area (undifferentiated, closed), developed without the awareness of the spatial composition and value of its heritage. It is worth noting that the ban on the new road to complex localization (alternative to the historic one), does not allow for the isolation of undesired areas from the valuable ones.

The refinery in Sowliny has great tourist potential, being at the very west end of the Carpathian–Galician Petroleum Route. This potential has not been exploited as yet. The inhabitants of Sowliny are not conscious of how attractive the refinery could be. The development of an educational — entertainment facility on a former industrial plant, could enrich Limanowa’s tourism offer. Tourism is the major economic catalyst in all European countries: 20% of tourists are motivated by the need of personal experience of historical substance and 60% desire to learn about culture [3]. Moreover, a shift from the model 3S (sun, sand, sea) to 3E (experiment, excitement, education) is now being observed.

Heritage is a magnet for the development of the tourism industry due to its authenticity. Industrial heritage has a high initial capital in building knowledge — based attractions. Transforming industrial facilities into touristic areas by combining entertainment with education, provides an opportunity for creative and sustainable revitalisation.

## 6. Summary

Due to the importance of the complex for Limanowa (particularly to Limanowa's development) and a small amount of evidence of the past in the city, the remains of the oil refinery should be strictly protected. Investments disrupting the urban layout, or those which may significantly affect the historic environment should be blocked. Small towns such as Limanowa are especially in need of innovative, cost-efficient ways to revitalise heritage and to maintain cultural continuity and identity. Attention should be drawn to the potential of grassroots initiatives, which can make an effort at restoring the splendour of historic objects therefore shaping urban planning and the civil society architecture (in the name of rebuilding the local identity) [10].

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