

## 5. Conclusion

Plečnik wasn't an urban planner, especially not in the sense of 20th century urbanism, where cities were divided into zones and architecture separated from planning. In his regulation plan for Ljubljana drawn between 1928–29, Plečnik used Fabiani's regulation plan from 1895 as the framework for his architectural proposals.

His plan is based on accomplished proposals and planned ones, the latter presented in the plan dated 1928 as sketches. The sketches include diplomas by: D. Grabrijan, 1927 – Tivoli; D. Fatur, 1928 – Maria square; F. Tomažič, 1928 – Vodnik and Krek square; B. Kobe, 1924 – Roman wall.

Other proposals presented for the first time in the regulation study were later developed in detail as independent proposals (the citadel redeveloped as a museum, accesses to the castle, Hrvatski square, Museum square...). In the following years Plečnik continued to design particular ensembles presented in the regulation plan. These endeavours however weren't aligned to contemporary international architecture and urbanism that were in the thirties already gaining favour even in domestic practice.

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### Notes

- 1 Grabrijan, 1968, pp.13.
- 2 Historical archives of Ljubljana, Cod VIII, 3, report from the meeting of the construction committee, 1928
- 3 Krečič, 1982.
- 4 Jan, A., 1998, pp. 41.
- 5 Lučine, 1928.
- 6 Valenčič, 1945, pp. 11.
- 7 Fabiani, 1896, pp. 7.
- 8 Grabrijan, 1968, pp. 21.
- 9 Prelovšek, D.: Jože Plečnik 1872/1957, 1992, pp. 297.
- 10 Fabiani, 1895, pp. 10.

### Pictures

**Picture 1:** Plečnik's planning of Ljubljana (source: Jan, 1995)

**Picture 2:** Tomažič, F.: Emona, studio work, 1928

**Picture 3:** Tomažič, F.: Ljubljana, studio work, 1928

**Picture 4:** Plečnik, 1928–29, A study for the regulation of Ljubljana and its surroundings. In: *Dom in Svet*, 1929, supplement 4

**Picture 5:** Axonometrics of Ljubljana – from Shoemakers bridge to the Triple bridge (source: Jan, 1995)

**Picture 6:** Axonometrics of Plečnik's proposal for the market place (source: Jan, 1995)

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## The legacy of architectural and technical infrastructure

### 1. Introduction

The article came to life as a consequence of a recent lecture about Australian museum trains and attitudes of Australians to technical heritage. Although the article is focused on the legacy of architectural and technical infrastructure, I will however begin by defining dealings with legacy in the wider context.

Architecture and the whole complex of natural and cultural heritage can be envisaged as a combination of natural assets, the level of development of production means and connected economic relations, and the pertaining culture of living. We should also add symbolic meanings of particular contained elements, seen both as status symbols of an individual (a villa, palace, garden etc.) or an identification symbol of collective identification or consciousness, (town hall, church, stock exchange or other public buildings). In this way we can arrive at the most general and often used model for dealing with heritage. Before embarking with the model towards real examples, I will take a stand towards heritage and relations towards it as conceptual matter, defined in the crossings of the axes »natural-artificial«, »old-new« and »beautiful-ugly«.

#### 1.1 Natural-artificial

If the word »artificial« denotes everything created by the work of man or the technologies created by man to perform the same task, and we limit our discussion to place, conceptually reduced to the pair »rural-urban«, then a retrospect in history would ascertain the formerly strong divide between the two. It was even physically manifested in the shape of the city wall. Inside was organised a built, »artificial« world of human society, exclusively cut and adequate to human use. Outside this space, of course depending on geographic features and understanding, was either a »romantic« landscape or a threatening wilderness, from which one was protected by a locked gateway and/or armed guards. The city wall was the materialised boundary between the urban and the rural, both physical and mental, marking out two apparently autonomous units, that lived through centuries in un-conflicting harmony, until the advent of changes in production methods and processes – the industrial revolution. It allowed the expansion of the urban into the rural by speeding up the rhythm of life, a still ongoing process.

When cities were fairly small and the wall just a few steps away, there was no desire in cities for renewing ties with the natural. Almost simultaneously with the growth of urban settlements which prevented such direct ties, under the slogan »Back to nature!« artificially recreated segments of the natural reappeared in cities. Most had the form of public gardens or parks. A diametrical opposite to these reserved areas within urban environments and as a consequence of urban expansion, a different form for maintaining the last remnants of primeval nature was established, i.e. the national park.

Because of their clarity and definition, neither of the extremes is an issue.

Problems begin when they start mixing.

The city wall formerly almost prevented mixing. Global urbanisation is however the dominant contemporary process while managing relations between the two worlds, that are in fact merging, is a necessary constant.

### 1.2 Old-new

The promoter of such expansion and the simultaneous precondition for it was infrastructure. In fact, infrastructure can serve to illustrate the relativity of the terms »old« and »new«.

A Roman bridge for example, was for more than two thousand years defined as »bridge«, since during all that time it served its function and was an integral part of the network of roads. The adjective »old« was added, only after a new bridge carrying the two-lane new regional asphalt covered road was built. This one in turn was renamed »old« just two decades later, when a new bridge was built for the four-lane highway. How long will it take for this bridge to remain new is a matter of speculation. Railways remained »new« for almost one hundred years. Now old and winding railway tracks with numerous ups and downs are being replaced by more open and straighter tracks enabling faster speeds and can be laid almost entirely through tunnels, if the terrain so demands.

In the global perspective therefore even the slogan »The old should make way for the new« is relatively new and we can presume that it became true only with the mentioned industrial revolution and urban expansion.

The entire so-called »legacy« clearly states, that through most of human history the old wasn't reluctant to give way to the new, more or less they merged. Old town cores often remained just as they were before and generally; albeit with some modernisation, functioned as they did formerly. Towered towns of the Romanesque times were given palatios in the renaissance and bastions in the baroque. The original buildings were left more or less unchanged, except for the odd new opening for a window or door.

The available time and taste evolving and affirming itself through decades enabled the creation of a mixture that was harmonious and with a beautiful image. Only times of rapid changes of both technology and taste actualised the slogan »Cheaper than renovation and reconstruction are demolition and new development!« also clearly expressing the prevailing economic motive. But if »old« was thus disqualified, the sudden lack of it conditioned consciousness about its worth, which is more than simply economic. Recognition of the emotional and symbolic content, their definition as the material expression of identity, enabled the »old« to grow from a time category into a value category and become »legacy«, something worth keeping, although it has no economic value. However the irony of development is, as I will show later on several examples, that as soon as the »old«, despite its lack of economic worth, is recognised as an asset, its economic value is regained.

### 1.3 Beautiful-ugly

An experts vocabulary usually lacks the terms »ugly« and »beautiful«, since they betray the emotional and intuitive, therefore »ignorant« definitions of issues of the aesthetic. They are however categories that can be rationally anatomised, whereby »harmonious composition«, an expert denotation of beauty, could be presented as for example, a pleasing combination of rhythm and size ratios of an objects elements. An ancient viaduct with its »natural« tectonics radiates harmony, while the ratios of elements, dimensioned according to »un-naturally« adapted materials and »broken« rhythms of bearing structures, designed according to economic factors, bring uneasiness to the eye of the viewer. Unconsciously the viewer searches for the endpoint or possible prolongation. Sudden, almost insignificant breaks in form, for example seen on railings or walls along the curves and slopes of highways, unconsciously cause doubt in the mind of the viewer (driver or passenger) about the correctness of the structure and consequentially its safety. To put things simply, a road, which is a fascinating engineering achievement, isn't built »smoothly« or »beautifully«. On the other hand, precisely because of their harmonious composition, some buildings both »old« and »new« are »beautiful«, although divided by centuries and/or technologies, such as the bridges in Solkan.

The issue of preserving beauty was because of slow development rarely emphasised or in the forefront. Long periods of time allowed the evolution of general, almost unconscious consensus on, what is a design value. Thus despite occasional additions or changes, valuables were seldom destroyed, unless caused by natural disasters or symbolic acts, such as planned destruction in war. Even adequately educated professionals taking care of valuables weren't needed. A single »universal« artist often satisfied the needs of a community. The stressed growth of speed of development brought on one hand, necessary adaptations to production methods and living, while on the other bombardment with differing »fashionable« styles caused the disappearance of the general consensus about »beauty«. Here enter the professionals who are trained to immediately discern between »harmonious« and »non-harmonious«. Whether there are in particular cases too many are another question, but their existence is nevertheless a logical consequence of development.

To the mentioned three axes we can add a common denominator, the economic factor, the central motif of expansion of the urban to the rural and the most common cause of replacing the old with the new. Sometimes it is the precondition for creating buildings with exceptional quality or »beauty«, especially when they are the vehicles of immortalising one. Sometimes when it is its own motive, it is also the reason for their destruction.

## 2. Relating to heritage

As already stated, the issue of conscious relations to heritage emerged, when it was endangered by the industrial revolution. The introductory relations produced two radical approaches to the issue, namely the »conservation« approach and the »economic« approach.

The first approach owes its name to the Anglo-Saxon world, because of the desire to maintain or »not to change«, in Europe the same approach is coined »green«, meaning that whatever the issue is, it has to left untouched, »frozen«. The principle mainly applies to the natural environment and then to historical monuments. Economic motives come last. The second approach puts the economic logic in the forefront, i.e. the profit, meaning »development at whatever cost«.

An excellent example of the conflict between the two extremes was an occurrence in Melbourne in the mid-nineties. The supermarkets Myer and Daimaru, standing opposite each other on Lonsdale Street, in the strict centre of the shopping-business centre, decided to build a bridge and thus join the two buildings into an expansive shopping complex. The National Trust of Victoria, taking care of heritage in the state, opposed the project, stating that it would destroy one of the most beautiful »street-scapes« and views in the city. Of course they opposed any such development. The supermarkets dug in and in the end, the winner of this unscrupulous fight was capital, but in the artistic sense even the city didn't gain anything. Let us try to envisage what would happen if a similar conflict would have happened in medieval Venice, around the Rialto bridge. The city would probably still have an untarnished canal, but it wouldn't have a very important thoroughfare and it wouldn't have one of its most significant landmarks. I believe that the function of the profession is not to prevent and freeze development, but promote development that doesn't demolish old values, but supplement them. The dynamic processes of present conditions demand from the profession less normative and more flexible approaches, a kind of pragmatic-deconstructed approach.

From this viewpoint even infrastructure, the most obvious bearer of urban development and simultaneously the most aggressive act in the natural environment, cannot be judged only as negative, whatever its shape: roads, railroads, pipelines, electric power lines. A dug-up building site probably isn't a value, a park with cultivated nature probably is, but simultaneously also the garage hidden below it gains in aesthetic value. The heat-conveying pipeline that runs alongside the railway at the eastern entrance to Ljubljana could hardly be attributed with any aesthetic value. The identification and aesthetic value of the supporting wall next to the old access road to Kranj are undoubtable. The same applies to all operational infrastructure elements or their remnants, they can be eyesores in otherwise urbanised environments or they can enrich and improve them. Certain abandoned roads should in fact be ploughed over and forgotten, others hide multi-layered values that shouldn't be discarded.

At the heart of the question are correct evaluation and derived adequate conduct, paying respect to all the mentioned elements, from economic and functional to symbolic and aesthetic, but also emotional.

Just before I delivered the mentioned lecture on Australian museum railways a young lad came up to me accompanied by his father. The latter encouraged him to speak so he asked: »Will you speak about Puffing Billy?« I needed some time to grasp the dimension of his question. After all, how could a lad from Ljubljana know anything about a small railway on the opposite side of the World, and probably know nothing about the mining railway Senovo-Bre-

stanica. The latter had fed my boyhood imagination. Let us look at the two stories.

## 2.1 Puffing Billy

In the last years of the nineteenth century the wide gauge railway (width 5 foot, 3 inches or 1.600 mm) reached the Dandenong hills, some 40 kilometres East of Melbourne. Because continuing the railroad through the hills would have been a costly adventure, the builders decided to build a narrow gauge extension, 2 foot, 8 inches wide. A thirty-mile mountain railway came into being and its small puffing steam engines soon earned the sympathy of all. They were named »Puffing teapots« or »Puffing Billy«. The railway served its purpose into the 20<sup>th</sup> century until the sixties, and then it was abandoned because of cheaper road transport and the extensive bus network. A group of local enthusiasts managed to retain the lower third of the tracks in place and bought some of the carriages. With voluntary work they restores the railway and carriages and started using them for fun rides. Because of the relative vicinity of Melbourne, these became not only popular, but also well visited. Soon their amateur activity grew into a profitable operation and in the eighties already two-thirds of the former tracks were reconstructed with a rich railway museum placed in the intermediate railway station. In 1999 the whole railway was reconstructed and the small train, as seen from the young lads question, is a celebrity in the parts of the world where tourism is developed.

## 2.2 Senovo

The story about the Senovo mine and its railway, the only narrow gauge surface railway in the country, is somewhat different. The euphoria for dismantling railways, rampant in the fifties and sixties more or less withered out by 1991, when the Senovo mine was closed down. One would assume that times for proper evaluation of technical heritage were better than before. The Office for cultural heritage with the Ministry of culture was informed about the closing of the mine and prepared a plan for changing its use. Tadej Brate, the advisor for technical heritage with the Ministry, recollected that the municipalities Senovo and Brežice were offered 60 million tolar (EUR 300.000), to reconstruct the mine's buildings after closure, renew the mine's separation and change it into the Slovenian museum for industrial locomotives. The train would be renewed and adapted to carry passengers. In this way the mine could become one of the most attractive tourist destinations in the region, with gravitational pull reaching the Čatež SPA, as well as Zagreb in Croatia. It would be a railway station for the regular museum train, thus accessible and interesting for tourists from Ljubljana as well.

Anyone who has seen Puffing Billy in action would recognise the idea as a possibility for revival. Not the local factors at home, they decided otherwise. As related by Tadej Brate, the president of the tourist society in Senovo personally, with a tractor, demolished a bridge close to his home and prevented renewed use of the railway. Shortly afterwards the mines separation was demolished, then the tracks were dismantled and the former route of the railway straightened out with a bulldozer. The train carriages were purposely smashed. There is no logical explanation for any of the mentioned acts, but now almost nothing is left of the mine's railway.

Tadej Brate mentions this episode as an illustration of the necessary condition for heritage protection. Any heritage, technical, architectural or artistic, cannot be protected if the local population doesn't have any affinity towards it. The people have to know its value, but they also have to be prepared to maintain it. In the Dandenongs foothills the local people, unaided by the community, renewed the railway. Their effort has in the economic sense benefited the whole area. In Senovo, despite aid from the central government, they discarded their technical heritage. In the long run probably they will receive their »just award«, but in view of the small personal gain, unfortunately the region has lost, not to mention the whole country.

Let us disregard these economic and development aspects and visualise the story through a child's eyes: The Australians have their narrow gauge museum railways. Even the Austrians have museum narrow gauge railways. Not to mention the Swiss ... We don't. Or rather, we had them and destroyed them. Us and the Bosnians! Please forgive the irony.

### 2.3 Other examples

In Australia I found many examples of preserved technical heritage, which in most cases weren't the consequence of planned preservation by professional bodies or government, but a consequence of positive attitudes in their environments. In most cases it was done by enthusiasts and wasn't profit driven, quite many of them later became World famous. The well known ZigZag, descending from the Blue Mountains, West of Sydney, or the Katoomba railway, North of Cairns in Queensland, or the Don River Railway in Tasmania, all spring to mind. Here I have to mention a new kind of infrastructure built in the natural environment. Something that didn't endanger nature, but moreover, was built with the inherent intent of protecting nature. The infrastructure is the path to the highest Australian mountain Mt. Kosciusko. It was built on a six kilometre long metal grate, raised from the ground by half a meter. Because of numerous visitors, fragile composition of the soil and weak vegetation, the access slope was threatened by massive erosion. The managers of the national park decided to build this metal »pavement«, a rare example of protecting natural heritage with a technological project.

Something that would in Slovenia at least resemble this project are the stairs to the Savica waterfall, but in reality even this comparison is somewhat weak.

When describing Australian examples one shouldn't remain on technical heritage and refrain from innovative approaches to architectural heritage. Such a case is the »streetscape« of Lonsdale Street in Melbourne. The North part of the city centre of Melbourne was formerly industrial, but in the last twenty years many office blocks were built there. One of the industrial attractions was the so-called »shot tower«, the factory producing ammunition and lead bullets. At the top of a brick tower molten lead was poured over a sieve and the drops of lead falling into a pool at the bottom hardened into aerodynamic projectiles. Although it wasn't used for almost a hundred years it was still quite well preserved in the early nineties. Instead of demolishing it when building a new supermarket, the Daimaru retail chain used it as the central piece of the inner vestibule. The large metal-glass construction built to protect the to-

wer in fact became a new city landmark. Although the interior wasn't done very tastefully the value of the tower, above all symbolic, cannot be denied. It still symbolises »Australianism« in a supermarket owned and characterised by the Japanese.

### 3. Conclusion, the future is not so bleak

Of course we have encountered positive examples as well: the mercury mines and the »Klavže« in Idrija, the museum trains on the Slovenian railroads, especially the extremely picturesque route to Bohinj, or the renovated town electric power plant in Ljubljana. Compliments should be given to attempts at protecting the routes of dismantled railway tracks or protecting old roads, now used as pedestrian or cycling paths, for example in Ljubljana, Bled, Bohinj and Kranjska Gora.

However many treasures remain hidden or forgotten. Parts of the old imperial road running alongside the regional road from Vrhnika to Planina, would in an environment more inclined to tourism and heritage be mentioned in travel guides. Here, they are being overgrown with grass, and an unaccustomed eye, not trained to see such peculiarities, cannot notice their presence or gradual disappearance under new development. The old route of the Southern railway above Borovnica with its picturesque and preserved viaducts and the route of the Mislinja railway offer even more potential. The aesthetic quality of these otherwise completely utilitarian infrastructure objects, that would generally be considered eye sores, gives them added value. In some other environment local factors would recognise their spatial quality, if not economic potential. I also have to mention that in the Mislinja valley, for different reasons, the local people strongly, but unsuccessfully opposed the dismantling of the railway. Nevertheless, despite the relatively fresh occurrences in Senovo I have to conclude on an optimistic note, hoping that the mentioned segments of infrastructure legacy will not meet the fate of the Senovo mine railway. The possibility of museum trains ever riding these tracks would probably be greater on the other side of the World.

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#### Pictures:

**Picture 1:** Melbourne – the glass cone doesn't function only as a protective shield for the old tower where bullets were produced, but has become the trade mark of the Daimaru department store and alongside the typical trams is one of the new urban icons.

**Picture 2:** Richmond near Melbourne – a modern hotel was built on top of the cable trams mastering yard, with full respect given to the former's style

**Picture 3:** Overpouring with tourists, Puffing Billy clammers up the Dandenongs hills; an amateur endeavour provided a worldwide known tourist attraction

**Picture 4:** The great ZigZag in the Blue Mountains West of Sydney, a visual treat and a magnet for tourists