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Strategic Landscape Planning and Design in the era of population and economic shrinkage: Reflections from Turin, Italy

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Introduction

All 47 of Japan’s prefectures are facing population decline in the next 30 years (2010–2040). A shrinkage of as much as 29% is expected in Aomori City, where this is happening most rapidly, followed by 25% in Akita City. Some examples of goals for cities such as these include alleviating the decline by making cities more compact. Meanwhile, in other countries, there is no small number of cities already confronted with severe population decline for various reasons, including war or structural changes in government and industry. How did these cities deal with population decline and make cities sustainable?

We have been conducted a research and educational exchange program with the Polytechnic University of Turin from September 2017. Turin, which is Italy’s fourth-largest city, experienced a severe population decline of 27% over the three decades from 1970–2001. However, efforts toward post-industrial reconversion (incl. hosting the Winter Olympics in 2006) revitalized the city in a remarkable transformation that has been called the “Miracle of Turin” (Post-Industrial city Research Group 2017) Now, Turin is considered one of Europe’s most fascinating cities. Open spaces have played a particularly significant role in a series of urban revitalization initiatives. In this report, we would like to introduce some case studies of transformation of brownfields to greenspaces, which were revitalized in various forms through public initiatives and public-private partnerships.

1. Turin’s strategies in population and economic shrinkage era

Turin, at the foot of the Alps, was once the first Capital of Italy (1861). It was under the control of the House of Savoy, which governed the areas of modern-day France, Switzerland, and Italy around the Alps, and was thus heavily influenced by it. Its townscape is characterized in part by the baroque and art nouveau architecture of the old city and by the Residences of the Royal House of Savoy, which were inscribed on the World Heritage List in 1997.

After the Industrial Revolution came to Italy in the late 19th century, Turin's progress was tied to the vicissitudes of FIAT. FIAT, which is an acronym for *Fabbrica Italiana Automobili Torino* (the Italian Automobile Factory of Turin), was founded in 1889, and Turin subsequently flourished as the manufacturing center of northern Italy. At the height of its prosperity, everyone believed that “if it's good for FIAT, it's good for Turin; if it's good for Turin, it's good for FIAT” (Yahagi 2014).

However, starting in the 1970s, the oil crisis and international competition pushed FIAT into the red. The closing of affiliated factories and the dismissal of some 80,000 employees initiated the decline not only of industry, but also of Turin, whose destiny was closely tied to that of FIAT. In the three decades from 1970 to 2001, Turin saw a sharp population decline from 1.19 million to 870,000 people—a decline of 27%, which is something that Japan has yet to experience. The decline of industry in Turin also resulted in a massive number of vacant industrial areas, “brownfields”. Among these, 10,000,000 sqm were located along the railways.

In 1993, with these issues reaching boiling point, Valentino Castellani, then-professor at the Polytechnic University of Turin, became Mayor of the city and would go on to implement one reform after another. Of particular importance is the Comprehensive Master Plan established in 1995. The main transformations and development were planned along the so-called- “*Spina Centrale*” (Central Backbone Project): “Backbone” here refers to the railroad track that runs through the city from north to south. As the bisection of the city into east and west by this railroad had become a long-standing problem, the planners sought to move the railroad track underground and pave a road, cycle-path, and pedestrian walkway over it over the course of four revitalization projects, Spina 1 through 4 (Fig. 1), where vacant industrial areas had been converted into districts of housing, offices and services. In parallel with the *Spina Centrale*, the City also approved “*Torino, Città d'Acque*” (Turin, City of Waters) (Fig. 2) in 1994, which was a landscape plan to revitalize a 1,700-ha open space that runs for a total of 70km along the four rivers Po, Dora, Sangone, and Stura.

In what follows, we will present specific case studies related to the *Spina Centrale* and *Torino, Città d'Acque*, which were spearheaded by the city. We will also present grass roots projects that were initiated by private citizens on their own.

2. Revitalization of open spaces: Case Studies

Case 1: Lingotto

There are initiatives all over the country to convert factories and warehouses that had fallen into disuse after the structure of industry had changed in the 1970s and use them as a catalyst for community development. Part of their appeal surely lies in their “industrial-scale” spaciousness, which does not exist in cramped urban spaces.

In Turin, the direction of the *Spina Centrale* was determined by the conversion of a symbolic factory—FIAT's core factory in Lingotto, which became a case study at international level. The factory, which was completed in 1930, had a total floor space of 24.6ha and spanned

500m from end to end. The most significant feature of this factory was its spatial layout for production, where a car would become completely assembled as it went up an indoor slope. Le Corbusier called this “an advance for planning in the new mechanized age.” Produced cars would then come out on the rooftop, which was a 24m-wide test course. However, with the curtailment of FIAT’s production functionality, the factory was shut down in 1982. The closing of this gigantic structure, which pursued efficiency in production, would be ridiculed as a “negative symbol of Fordism.”

Redevelopment project was designed by the representative Italian architect Renzo Piano, who brought the factory back to life as a multi-use facility housing a shopping center, hotel, fair and conference center, auditorium, cinema, and classrooms of the Polytechnic University of Turin, among other things. It opened in 1989 and is now a crossing point of citizens, university students, and tourists. In addition, its functionality has been continually reexamined since its opening, which led to the addition of a museum in 2002, for example.

The rooftop test course, a distinctive space that inherits the former factory’s industrial character, is now a vast open space that is freely accessible to the public (Photo A). From there, one can look out over the entirety of Turin. The indoor car slope has also been preserved (Photo B). In addition, by housing a shopping center, university research building, hotel, and various other functions, the large structure of the indoor space enables people of diverse backgrounds to meet there (Photo C). Finally, a bridge extending east out of Lingotto, which was built for the 2006 Olympics, gives the impression of a future where Lingotto is connected to the surrounding city (Photo D).

Ex-mayor Castellani saw Lingotto as “a sign of the will of both the municipality and local enterprises to ‘turn the page’” (Colombino & Vanolo, 2016). This is likely exactly why the *Spina Centrale* took advantage of the remnants of the industrial age and inherited a public-private partnership approach to urban revitalization.

Case 2: Parco Dora (Dora Park)

Dora Park is a large-scale park with an area of 45.6ha, running along the river Dora, which is 4km northwest of the city center. The site was originally home to steel and tire factories, and the river was partially culverted. Of the four sections of the aforementioned *Spina Centrale*, Dora Park belongs to Spina 3. It is the most important open space among all the projects, and other projects combined it with an environmental industrial park and apartment buildings, which we will describe later. Dora Park is also part of *Torino, Città d’Acque*; along with the construction of the park, the river Dora was “daylighted” (deculverted), and the long-covered river once again flowed above ground.

Dora Park is divided into five areas: Vitali, Michelin, Valdocco, Ingest, and Mortara (Fig. 3), whose names are taken from the companies whose factories once occupied the site. It was designed by Peter Latz’s team, which is known for the design of Emscher Park in Germany. As was the case with Emscher Park, Latz used the frames of the factories as-is in the design of Dora Park. In Vitali, he preserved the frame of its former steel factory and converted it into a multipurpose event space, which is bustling with people when there are events—and even on

weekday nights, local children gather under the gigantic roof to play basketball, skateboard, cycle, and dance (Photo E). In Michelin, a spacious grass field runs along the river, which normally anyone can enter, but when the river floods, it takes in water from the river and functions as an adjustment reservoir (Photo F). Nearby, a tower of a turbine cooling system was left as-is, as a symbol of the industrial local identity. Italy is a country that values its history, and its landscape design practice also emphasizes expressing the history of the land through design and communicating it to future generations, in addition to creating beautiful spaces.

The construction of Dora Park also involved Italy's Transfer of Development Rights, one of the first tests/application of this technique in Italy. This is a project scheme whereby a private developer has their plot ratio relaxed and taxes reduced in exchange for providing more public park sites than the standard designated by law. Thanks to this, the city of Turin was able to secure this park site, as well as many other areas for public facilities, without expending any of its own resources. This can be likened to projects in Japan that combine Land-Readjustment Projects with the Comprehensive Design System. One can see from walking around the area near Dora Park that, compared to other areas of Turin, it is full of high-rise apartment buildings (Photo G). In fact, the development rights have been concentrated into the areas surrounding the park.

This new project scheme facilitated the construction of the large-scale park along the river. Dora Park belongs to the 70km of continuous open space along the riverside in the city created by the aforementioned *Torino, Città d'Acque*, and contributes to improving the green infrastructure and ecosystem network of the city as a whole.

Case 3: Parco Colonnetti (Colonnetti Park)

Having become flagship of FIAT's head factory in 1939, Mirafiori is the area that could be said to be influenced the most by FIAT. A 100ha large suburban factory was built in Mirafiori, which is located at the southern end of Turin, and countless residences for its workers were built in the surrounding area. However, FIAT's decline would put Mirafiori on the path to decay. It is now the most "aged" area of Turin, with 1 in 3 of its residents being elderly (Città di Torino, 2018).

At the same time, it is also blessed with natural resources, such as the abundant river Sangone flowing in from the Alps and some wild animals living there. While the area around the river Sangone had decayed due to the abandoned factories of FIAT and related companies, as well as apartment complexes full of vacant houses, an initiative based on *Torino, Città d'Acque* made steady progress in the creation of a network of open spaces along the river. In 1995, as part of an urban redevelopment program by the province of Piemonte Region, a revitalization project in Colonnetti Park and the surrounding area started in southeastern Mirafiori (Photo H). This program involved a variety of stakeholders, since one of the criteria for funding was that the project must be undertaken jointly by the municipality and private companies.

After the factories had been removed from the area, birds and small mammals had already started making a home there. That gave rise to the idea of renaturing an area of approximately 46ha, which led to the creation of a diverse range of natural environments from hiding places

for animals and breeding grounds to grasslands for feeding and dense forest. The City Green Division also created an ecological corridor with the nearby river Sangone and constructed a space where animals can pass through. When we visited the site in person, we saw European rabbits, and tit birds everywhere (Photo I). We imagine that this ability to experience nature so close to home makes nearby residents feel like they are living in a very “green” residential environment.

In recent years, Japan’s shrinking cities have mostly examined methods of reusing vacant land for the purposes of human use. However, further population decline will likely require a more hands-off approach to the management of vacant land. Having taken advantage of nature that regenerated on its own, Colonnetti Park is arguably a good example of such an approach.

Case 4: OrtiAlti

The farming has performed in not agricultural land but open space in urban area in European countries since 2000. This way of farming is called “Zero Acreage Farming (Zfarming).” In Turin, that farming is performed in the brownfield and that is as one of “Urban Regeneration.” OrtiAlti is the organization which mainly works on the social issues related to poverty. Elena CARMAGNANI (her major is sustainable architecture) and Emanuela SAPORITO (her major is urban planning by citizen participation, Researcher in Politecnico di Torino) operate, and this organization is received funding under ProGleg, which supports urban renaissance projects by the nature-based solutions, on the nature from 2018 to 2023.

“Ortoalto Le Fonderie Ozanam Project” has been performed from 2016. The targeted area is brownfield which is located in the northwest area of Turin and the former foundry built in late 1930s (Figure J) . In the 1960s, with the name Casa Ozanam, it became a hospital for students and workers. Much later, in the 1980s, it became property of the Municipality of Turin, and then it was given to local NGOs. And then, building in this area is reused as hostel or restaurant (Le Fonderie Ozanam) and the growing vegetables or bee keeping is performed in the rooftop garden. The rooftop garden covers an area of 150 [m²], and the vegetables are used or honey products are sold in restaurant (Picture K). Until now, it was not possible to reuse the building for making farmland under the regulation concerning the buildings of Torino city, but the deregulation was carried out in the communication with the city for the implementation of this project. Furthermore, the city decided to review the regulation itself with the intention of promoting those projects in the future.

This project provides many opportunities for citizens through the maintenance or management of open space as farmland in the process of this project as well as the reused the brownfield as farmland. Concretely, first, from the design of the rooftop farm to the management after the maintenance, the employment and training for economically disadvantaged young people are conducted, and the project itself helps the employment of young people. Especially, they can learn techniques through practice because experts are involved in rooftop garden plan and design. Second, this project area is also the communication space among students, local organizations, NGO, and so on because this project involves them. Furthermore, this area also provides the place of environmental education for children through the participating in activities like growing vegetables or bee keeping. According this

achievement of projects, the reuse of brownfield is not only the greening of open space aiming for "Urban Regeneration," but the activity related to the project itself is a useful opportunity for citizen for the solution of social problems. In the future, by positioning such projects or activities in a large-scale plan, for example green master plan in Japan, it is considered that it will lead to a more effective and strategic "Urban Regeneration" in Torino City.

3. Conclusion

We have thus far looked at some initiatives undertaken in one city in Europe, far away from Japan. This city, which was once a so-called "one-company town," declined rapidly following its transition from industry, and now the local government and private sectors are working together to revitalize it. However, the present relationship between the government and private sectors differs markedly from how it was in the past, in that now, the government draws a strategic vision, which the private sectors then support.

In present-day Turin, the *Spina Centrale* and *Torino, Città d'Acque* function as strategic visions for the city center and periphery, respectively, and citizens were involved in different ways depending on the area. In areas near the center, the government encouraged the intervention of multiple private companies to revitalize brownfields (Lingotto) or put together a project scheme to incentivize developers to construct a large-scale open space (Dora Park). In the edge of the city, more natural methods were used to take advantage of former industrial sites (Colonnetti Park), and in nationhood, some citizen groups undertook initiatives on their own (OrtiAlti).

Turin was revitalized through this sequence of initiatives. We stayed in Turin for weeks to months and were continually surprised by what we saw. We hope that this report conveys even a fraction of the excitement we felt.

Acknowledgments

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