

Abandoned Railways, Renewed Pathways: Opportunities for Accessing Landscapes

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Abstract. The abandonment of railway lines and station buildings is the outcome of social, economic and technological developments that have changed the local infrastructure systems. Unlike many European nations, in Italy the strategic role of these resources is still undervalued. The paper proposes a methodological approach aimed at achieving the valorisation of railways and station buildings network through integrated actions. The disused railways are potential new pathways and the abandoned stations provide available spaces for new activities, supporting sustainable local development and regeneration processes. Considering disused railways and stations as integrated parts of a system, they can improve the accessibility of environmental, cultural and historical resources network.

The proposed methodological approach identifies categories of variables adopting to face up to the case of the disused railway of Cancellor-Torre Annunziata in the South of Italy. The International Competition of ideas "Green Boulevard - Parkways of the 3rd millennium" has been the occasion to confront with the research object through a planning testing that has successfully proved and won an award.

Introduction

The abandonment of the railways network, stations and tollbooth rails is a widespread phenomenon at national and international level, determined by social, economic and technological developments that have changed the local infrastructure systems. Reusing this heritage can be an opportunity to trigger sustainable local development and regeneration actions, especially in degraded areas. The research hypothesis is that by considering disused railways and stations as integrated parts of a system, they can improve the accessibility of environmental, cultural and historical resources network.

The international scientific and cultural debate highlights the importance of reusing abandoned railways infrastructures as "planning strategy" for the valorization of the territory [1, 2, 3, 4]. In the practice, the reconversion is usually carried out through greenway projects [5], multi-functional public pathways for a slow mobility, characterized by ecological, tourism, recreation, education value [6]. Greenways-based policies are aimed to promote new uses, to arrest decay processes and re-establish continuity in the environmental system, using existing linear infrastructures [7].

The concept of greenways doesn't indicate only slow means to move through the territory, but a new way to involve the users in a knowledge process of the natural and built heritage [8]. These characteristics of the greenways are consistent with the objectives defined by the European Landscape Convention, contributing to «an assessment of the relationships between landscape structure and landscape dynamics, which are essential to any landscape management or land use» [9].

The term greenways has been used for the first time in an official document in the President's Commission on American Outdoors Report (1987), as «a living network of greenways [...] to provide people with access to open spaces close to where they live, and to link together the rural and urban spaces in the American landscape threading through cities and countryside like a giant circulation system» [10]. Many plans and projects are run in the U.S.A. In particular, the American

Greenway Program, is a project of the Conservation Fund that aims to develop a greenways network in order to link natural and historic sites and parks throughout all the States [11].

Networking heritage for new European strategies

First in the U.S.A, then in European countries, the potential of abandoned railways has been recognised and valued through wide national programs [12], highlighting the need to contextualise the American concept of greenways in the European area, with diverse territorial, cultural, historical and socio-economic characteristics [11].

The Declaration of Lille (2000) promoted the development of a European Greenways Network specifying that «These routes should meet satisfactory standards of width, gradient, and surface condition to ensure that they are both user-friendly and low-risk for users of all abilities. In this respect, canal towpaths and disused railway lines are a highly suitable resource for the development of greenways» [13]. At the same time, the European Greenways Good Practice Guide has been a tool for raising awareness of policy makers and social stakeholders. It defined the Community approach, the principles behind movements and associations, spreading European meaningful experiences [14].

National initiatives are also encouraged by the European Union that in 1997 created the European Greenways Association that «advocates the transformation of disused railway lines into greenways as the most appropriate way to ensure that Europe's railway heritage is preserved and maintained, and at the same time generates local economic opportunities. The European Greenways Association seeks to help more organizations get involved with greenway development and, at the same time, makes a special appeal to government administrations and railway companies – the main owners of these infrastructures – to embrace the movement, offering its full collaboration for that purpose» [15]. Moreover, in 2003 it was established a two-years European Award to disseminate the best experiences of greenways.

Since the 90s, significant experiences have been made in Europe such as Vías Verdes in Spain, Réseau Autonome des Voies Lentes in Belgium, Sustrans Program (Sustainable Transport) in England and the latest Ecopistas in Portugal. In these best practices, the conversion of abandoned railway lines into greenways has been realised mainly through wide national programs, encouraging low environmental impact uses and a responsible and sustainable tourism [11], [16, 17]. E.g., the Vias Verdes programme started from an agreement among the promoter Ministerio de Obras Públicas, Transportes y Medio Ambiente, today Ministerio de Medio Ambiente, the Spanish railway companies and the Fundación de los Ferrocarriles Españoles and it is based on the collaboration among institutional subjects, associations and local communities [16].

In Italy, currently the abandoned railway network is shortly renewed, through sporadic projects, without adequate policies, programs and technical-regulatory tools to support integrated development processes of infrastructures and stations. In 2004, Ferrovie dello Stato commissioned a research to the University of Milan, in collaboration with Italian Greenways Association, to quantify this heritage [18, 19]. It showed the lack of both a shared methodological approach for recovery the railways sediments and a planning strategy supported by adequate financial resources.

Afterwards, a 2-million-euro funding program has been dedicated to enhancing disused railways (Finance Act in 2008). However, the next government agenda did not pursue the initiative, as outlined in the Draft Law “Norme per la valorizzazione del patrimonio ferroviario in disuso” (Law for valorisation of disused railway, December 7, 2010). As a matter of fact, at the 5th European Greenways Conference, held in 2010 at Madrid, data by Ferrovie dello Stato still esteemed 1900 kilometres of disused railway lines, corresponding to 19% of the whole railway network, and nearly 2000 abandoned stations, excluding tollbooths [20].

In last years, first cases of greenways started in Italy [21]. Some cases got international awards, such as 24 kilometres of greenways on the old coastal railway lines between Ospedaletti and San Lorenzo al Mare, in the Coastal Park of Western Liguria. In 2011, it was ranked second in the 5th edition of the European Greenways Award, with in the Excellence Category. In the same award

edition, the Sentiero della Bonifica, in the Region of Toscana, was third in the Exemplary Initiatives Category [22].

Currently, the disused railway heritage in the whole national territory has still a considerable size [23, 24] so that the Ferrovie dello Stato Group declared its intention to establish a Greenways National Plan, following the example of other European nations, involving government institutions, local authorities and environmental associations. Meanwhile, on March 15, 2013, a Draft Law “Norme per la tutela e la valorizzazione del patrimonio ferroviario in abbandono e la realizzazione di una rete di mobilità dolce” (Law for protection and valorisation of disused railways and implementation of a slow mobility network) was presented at the Chamber of Deputies.

In Italy, the cultural debate is strongly characterized by initiatives of associations. In October 2013, on the anniversary of the first Italian railway Naples-Portici (1839), the Italian Slow Mobility Confederation organised the First National Congress “Mobilità Dolce: Scenari europei e sviluppi futuri in Italia” (Slow mobility: European scenarios and future developments in Italy). The Congress, held few days after the European Mobility Week, focused on the issues of slow mobility, reuse of disused infrastructure networks, integration with the local public transport and with the widespread tourist hospitality.

The Confederation got a special mention by the Commission of the European Landscape Award (edition 2012-13) for its work throughout over a decade, finalised to renew disused railways, finding a strong response in the institutions, local communities, environmental associations and tourists [25].

An integrated and sustainable approach for valorisation in Italy

The main European successful greenway initiatives highlight the importance of an overall planning, supported by the political agenda.

The paper proposes an approach aimed at achieving an integrated valorisation of railway lines and stations network. Disused railways are potential new pathways and abandoned stations provide available spaces for new activities, supporting sustainable local development projects.

The goal is to enhance the value not only of the individual element – either buildings or pathways – but also of the potential network that connects them and linking with the local context. The greenway concept is considered the most appropriate because it is based on the coexistence of environmental, cultural, historical, economic and social resources.

In this way, the new accessibility and uses determined by the greenways allow, on the one hand, to redevelop an abandoned and often degraded heritage, on the other hand, to foster actions to promote the area, supported by the introduction of new activities in the buildings – such as services for tourists, accommodation facilities and restaurants, information points, exhibitions and retails of local products.

For this purpose, both in the analysis and design phases, it is appropriate to adopt multi-scalar assessments considering pathways and buildings in an integrated territorial system, also including the relevance of all the relationships with the context. In these perspective, the proposed methodological approach starts from the identification of different categories of variables that must be evaluated in every initiative. The complexity comes from the fact that, in each specific case, the variables will be combined in different ways.

The categories of variable (Fig. 1) concern:

- Location;
- Property management;
- Environment;
- Cultural assets;
- Local stakeholders;
- Touristic receptivity.

The design choices will be based on the evaluation of environmental, economic and social impacts that greenway determines, when it is not limited to the reconversion of the railway in pathway. Therefore, in order to trigger local regeneration process, and not only the rehabilitation, it

is needed to make integrated actions aimed at creating physical, social and economic effects – as required for a sustainable development – such as to valorise the local human resources, to increase profitability and attractiveness of cultural and environmental heritage, to improve public-private partnership.

In particular, especially in degraded areas, new functions for the abandoned buildings play a strategic role for regeneration processes. In a sustainable development scenario, the new activities have: to guarantee the protection of the building and its management and determine an increase in its economic and social values; to involve users in the knowledge and valorisation of the territory; to increase infrastructures and services in the area [26]. As shown, Italy is characterised by an effective public awareness and initiatives by associations, confederations, forum, often without support of institutions. Therefore, it is necessary to enhance this resource by involving them actively in the design choices.

Furthermore, in order to ensure the economic feasibility of a wide national program, it is necessary that policy makers are able to trigger processes of partnership with local socio-economic stakeholders and to attract private capital that can contribute to develop initiatives and to manage reused heritage.



Figure 1: Scheme of variables

The abandoned railway heritage, a case study on the slopes of Vesuvio

The theme of the infrastructure in Italy is the subject of several debates as well as of many national and international competitions that consider environmentally friendly infrastructure as a connective space able to enhance the sustainable links across the city and the territory. In this context, in 2012 one of the authors took part in the International Competition of ideas "Green Boulevard - Parkways of the 3rd millennium", with her planning team-Effequattro Studio, capitalizing on this occasion to test the argument of this research. The challenge launched from the Ministry of Cultural Heritage and Activities – with the Region of Campania, Municipality of Salerno and Rome Capital City – is consistent with the sustainable development of mobility system as framework for harmonic and democratic growing of the territories, in particular from Rome to Salerno.

The theme of the competition chose by Effequattro Studio was the reconversion of the Cancellotto-Torre Annunziata railway. The project "Natural born green boulevard" has been awarded the top six winners of more than seventy participants in Europe.

The complexity of variables, describing in the previous paragraph, emerges also in the specific context of the Region the Campania. The abandoned railway network in this region has got 13 abandoned railways totaling 430 kilometres [24] crossing both degraded and neglected landscapes and excellent areas, urban and suburban areas as well rural contexts.

The disused Cancellotto-Torre Annunziata railway is included within this network and it has been selected for the complexity of its territorial context, 30 kilometres that cross the region – from the hinterland of Caserta until the coast area of Torre Annunziata, included within 9 municipalities located on the slopes of Mount Vesuvius. This railway line is notable for its strategic position relative to Vesuvius National Park and its trails and the presence of rural, industrial and population

centres along its course. Its reconversion would bring to the Vesuvius area in question a great improvement in the use and accessibility of the landscapes.

The case study approach [27] allowed researchers to proceed with an iterative method that has continue cross-references and validations during the fieldwork. According to the analysis of variable (Fig. 1), the researchers define and frame the complex context in which the infrastructure wound in the diverse landscapes. Regarding the property management, the Canello-Torre Annunziata railway is managed by mixed subjects both private and public and it is managed by Ferrovie dello Stato; the catchment area is made up of more activist groups on the territory and some socio-economic subjects like small entrepreneurs interested in the revival of abandoned railways; the track of rails crosses an ordinary landscape strictly linked to the Vesuvius National Park that is characterised by Community Interest Sites and Special Protection Areas; in particular, the abandoned railway starts from the station of Canello and crosses the landscape first in a suburban industrial area, after in a rural manufacturing area and going towards the sea of Torre Annunziata crossing urban landscapes. The cultural asset is very rich although not very exploited: the tracks cross or line historical centres of cultural and artistic interest like the Municipality of Ottaviano in which the Castello Mediceo excels as relevant international finding together with its historic farms and buildings of great value. This location could represent an opportunity for development diverse touristic typologies based on the valorisation of cultural, environmental, food-and-wine sectors.

The main objective of the research has been to find out the elements capable of valorising the original network-nature of infrastructure and abandoned stations, by improving accessibility, usability and identifiability of the public spaces of the community.

By interviewing community members, the awareness transpires regarding the potential of the black hole represented by the abandoned stations and 30 kilometres of track submerged by the wild vegetation and/or urban waste has emerged. This is demonstrated by the numerous organizations that have among their objectives the protection of historical urban and natural landscapes, on the slopes of Mount Vesuvius, in particular by supporting the proposal to convert the disused railway in the greenway. Unfortunately, this momentum is not followed by the local policies that can support the efforts and suggestions made by such associations, making the community feel frustrated.

The characteristics of this railway are consistent with a project of greenways: the tracks run along their own path, along the way and have few intersections with roads, they would have a separate path from the road, offering high safety to users; the tracks have almost no slope that fit to the needs of ordinary cyclists, pedestrians of all ages and people with disabilities; the long straight sections and the rare large-radius curves allow users to have a wide view on the path, reducing the dangers of crime and the risk of clashes between different types of users.

The proposed greenway would be an equipped route useful not only for recreational and sporting activities, as well as the backbone of a new mobility system linking urban centers; signals, milestones, bridges, subway roads, train and their dependencies evoke the prestigious past of this route would add glamour and entertainment to excursions and make it alive in the memory of passers-by the memory of the old railway lines.

From the analysis of criticalities, it was found that the areas crossed from the disused train lines are congested for traffic, suffer from lack of public spaces and activities, for the promotion of the territory, the isolation and disorientation respect to the places more central and better equipped within the Region. Conversely, the same territory holds a unique natural heritage, in which nature is the star throughout 12 months a year. The Vesuvius National Park has got 600 species of plants and 100 species of birds [28]; the quality of food and wine produced in the territory is high and includes the vineyards of Lacryma Christi and the cultivation of tomatoes so-called *piennolo*. Since 1995, the presence of the Park Authority institutionalised the protection of the one and only active volcano in continental Europe together. The Park Authority was also in charge of dealing with nature conservation, promotion of educational, recreational and research, enhancement of cultural, agricultural and traditional crafts, as well as two Sites of Community Importance and one Special Protection Area, 9 pathways for a total of 54 kilometres of natural trails. This context represents a

strength as opportunity for the sustainable development of the entire area on the slopes of the Vesuvius.

The case of the disused Cancelli-Torre Annunziata railway is a black hole that lowers the average quality of the historic, urban and natural landscapes of the Vesuvius area. On the contrary, his re-functionalisation can represent an occasion for urban, environmental, social and economic regeneration of the area. As highlighted by the proposed project, modest measures can transform the strip of tracks in a greenway, turning it into a valuable alternative to the busy streets and driveways as opportunity of re-appropriation of the territory for the population. The project work well if is considered in a systemic logic, capable of solving the complexity of the issues. The whole system is composed by: the territory as the fabric both which has to be valorised and from which the values come from; the path as the red thread characterized from new slow mobility and the nine stations as catalyst for the regeneration of the landscape.

Consistently with the theoretical and methodological analysis conducted on the site, three aspects are considered crucial: the technological system that makes the greenway self-sustainable for long life; the attention to the choice of new destinations for the stations so that the complex system of the greenway triggers processes of urban and rural development consistent with the potential of the area around Vesuvius; the evaluation of the infrastructure as opportunity to produce natural, cultural, social and economic values. In particular, Effequattro Studio has proposed integrated solutions capable of activating virtuous processes especially with regard to energy issues – as required by the competition – and for a bottom-up management of new resources systematised (open public spaces and buildings receptive/leisure/service). For the conversion of the historical stations Effequattro Studio has proposed additional activities varied for each municipality choosing the new functions based on the vocation of the area and the variable involved: recreation, receptive, territorial promotion of cultural dimension, the Farmers Market to promote the local tradition products, the link with the paths of the Vesuvius National Park, the Vesuvius Villas and equipment and services for the slow mobility.

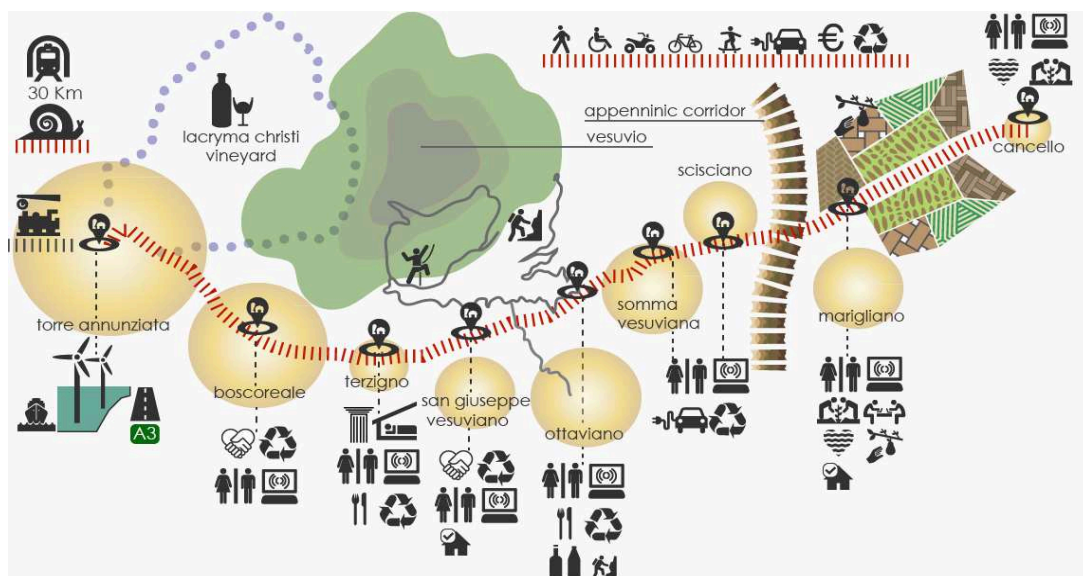


Figure 2: The complex system of the new Vesuvius greenway

The complex system of the greenway (Fig. 2) includes the environmental, social and economic resources (Vesuvius with its paths, Vesuvius Villas, farms, agricultural areas, ecological corridors and local associations), the composition of a combined system (from the hinterland of Caserta to the port of Torre Annunziata) of equipment and sustainable systems. The energetic aspect of the project is a determining factor that is exploited by adopting technological systems aimed at generating clean energy using natural resources such as sun, water, wind and recycling of production processes, based on the areas identified in the draft.

An important chapter was dedicated to the possible managing of the greenways and the necessary funding for its implementation: regarding the managing would be important to be able to involve the community already active in the area, giving wide space to associations, consortia, small entrepreneurs and the citizens themselves, who could become the main actors in the development process provided that they are supported by appropriate institutional administrative structure. In this sense, the stations, properly designed in a flexible way, could be the places in which to accommodate temporary social and cultural activities, exhibitions, sales of local products from local to farmers markets.



Figure 3: The proposal of Effequattro Studio – The Ottaviano Station, state of fact and the state of project (2012)

In line with the European policies, the project could fall within the European Regional Development Funds actions and initiatives that promote the regeneration of urban spaces. The proposed project could be achieved with the co-financing of local investors, organised in associations or cooperatives, through the planning instrument of the Urban Implementation Plan, and/or funds from the European program LIFE plus – which provides support for projects in urban areas with the purpose of improving the quality of life.

Conclusions

The proposed approach aims at integrated rehabilitation processes of infrastructures and stations, to overcome the tendency to identify greenways exclusively with the bike or pedestrian paths design. The goal is not a restyling of disused railway network, but the activation of regeneration processes and local development, linking local resources and increasing equipments and services in the area. The national scenario shows, on the one hand, the dimension of the disused railway heritage, on the other hand, the action and the commitment of cultural and social stakeholders that support initiatives aimed at raising knowledge of this heritage, promoting its valorisation in order to give it back to the community. This characteristic is an opportunity to build shared strategies of wider valorisation. However, it is necessary the support of adequate policies, programs and technical-regulatory tools and commitment of the political agenda.



Figure 4: The proposal of Effequattro Studio – Natural born green boulevard (2012)

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