

Fabbrica della Conoscenza

XIV Forum Internazionale di Studi

Le Vie dei
Mercanti

Carmine Gambardella



WORLD HERITAGE and DEGRADATION
Smart Design, Planning and Technologies

La Scuola di Pitagora editrice

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Collana fondata e diretta da Carmine Gambardella

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**WORLD HERITAGE and DEGRADATION
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WORLD HERITAGE and DEGRADATION
Smart Design, Planning and Technologies
Le Vie dei Mercanti
XIV Forum Internazionale di Studi

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Peer review

Scholars has been invited to submit researches on theoretical and methodological aspects related to Smart Design, Planning and Technologies, and show real applications and experiences carried out on this themes.

Based on blind peer review, abstracts has been accepted, conditionally accepted, or rejected.

Authors of accepted and conditionally accepted papers has been invited to submit full papers. These has been again peer-reviewed and selected for the oral session and publication, or only for the publication in the conference proceedings.

Conference report

300 abstracts received from:

Albania, Benin, Belgium, Bosnia and Herzegovina, California, Chile, China, Cipro, Cuba, Egypt, France, Germany, Italy, Japan, Jordan, Kosovo, Malta, Massachusetts, Michigan, New Jersey, New York, New Zealand, Poland, Portugal, Russia, Slovakia, Spain, Tunisia, Texas, Turkey.

More than 550 authors involved.

212 papers published.

Preface

The theme of the XIV Forum “Le Vie dei Mercanti” is an international discussion on the disciplines of architecture, design and landscape through the presentation of research and operational projects on the conservation and valorisation of World Heritage and “smart” regeneration of degradation, with analyses and proposals ranging from the design at all scales, to architectural assets, the territory, infrastructures and the landscape. Academics, along with professionals who have a role in the governing, managing and controlling of public agencies, institutions and the business world are invited to submit papers related to design objects, architecture and landscapes. This is with the aim of conserving and recovering, valorising and regenerating, managing and designing (or re-designing), for the more general improvement of the quality of life, in an innovative and contemporary relationship between man and the environment, through “beauty”, while respecting the history, traditions, identity and principles of sustainable development, as well as being attentive to the needs of our and future generations. Internet of Everything, smart design, planning and technologies, building information modelling, in this age of globalization, have become operational tools – that alongside the traditional ones of the profession – for the protection and promotion of the World Heritage, are considered as well as shared by the whole of Humanity, and the regeneration of the degradation and the “Minor Heritage”, in all aspects, and as contemplated by the UNESCO Conventions on tangible and intangible assets and the European Landscape Convention. The event aims to create a critical transversal dialogue, open to cultural and “unlimited” influences, in a logic of integration between the skills that extends, and is not limited, to the following disciplines: anthropology, architecture, archaeology, history art, cultural geography, design, ethnology and folklore, economy, history, landscape, museum management, philosophy and political science, urban history and sociology, cultural tourism, planning and integrated management. The location is exceptional. Campania, with six sites included in the World Heritage List, two UNESCO Man and Biospheres, two sites on the List of Intangible Heritage, is one of the richest regions in the world for cultural and landscape heritage.

Carmine Gambardella



WORLD HERITAGE AND DEGRADATION

Smart Design, Planning and Technologies

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A "stream of culture": an integrated approach between urban developments and historical water infrastructures¹.

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Abstract

The Rideau Canal, located between Kingston and Ottawa, Canada, has been a World Heritage Site since 2007. It was added to the World Heritage List (WHL) for being an excellent example of a slack water Canal in North America, as well as for its continued use throughout the years. UNESCO nominated this site in the WHL according to two criteria: for being a tangible representation of human creative genius and for representing an outstanding example of a type of infrastructure on a territorial scale, illustrating a significant stage in human history. Stressing the relationship between the Rideau Canal and the redevelopment of one specific area crossed by it - Lansdowne Park, Ottawa – this study outlines criticalities and challenges between urban development and cultural landscape conservation. The paper addresses these issues considering the Canal's current safeguard actions within its buffer zone and evaluating the gaps between the protective measures outside the small buffer zone and the management of changes along the Canal. This analysis is developed through an in-depth study of current management plans, policies and legislation related to the protection of the Rideau Canal and the various stakeholders involved. Final remarks concern a comparison with a similar site in Milan, Italy. This correlation outlines alternative strategies for a sustainable integration - from the cultural, social and economic point of view - between water infrastructures and urban developments.

Keywords: Water Infrastructure, Urban Development, Cultural Landscape, UNESCO, Buffer Zone.

1. Introduction

As the Heritage profession continues to expand its traditional boundaries to integrate different disciplines and ways of thinking about heritage, the use of cultural landscapes has provided a way of integrating these various heritage elements and approaches within a space to conserve them for both current and future generations; yet, how truly protected are these landscape elements when development outside their official borders and buffer zones are occurring? Taking the Rideau Canal as a case study, and through an in-depth analysis of its physical changes over the last century in a specific section selected, this paper aims to analyze the critical issues associated with the corridor cultural landscape of the Canal and the protection limits of its buffer zone, focused on the urban

¹ While the four authors have contributed equally to the paper, Davide Mezzino wrote the paragraphs 1. Introduction, paragraph 2. The management of the canal: stakeholders and paragraph 5. Conclusions; Giovanni Castaldo wrote paragraph 4. The case of the Darsena project in Milan; James Arteaga wrote paragraphs 3. Recent changes: Lansdowne Park redevelopment; and Tatiana Kirilova Kirova wrote the Abstract.

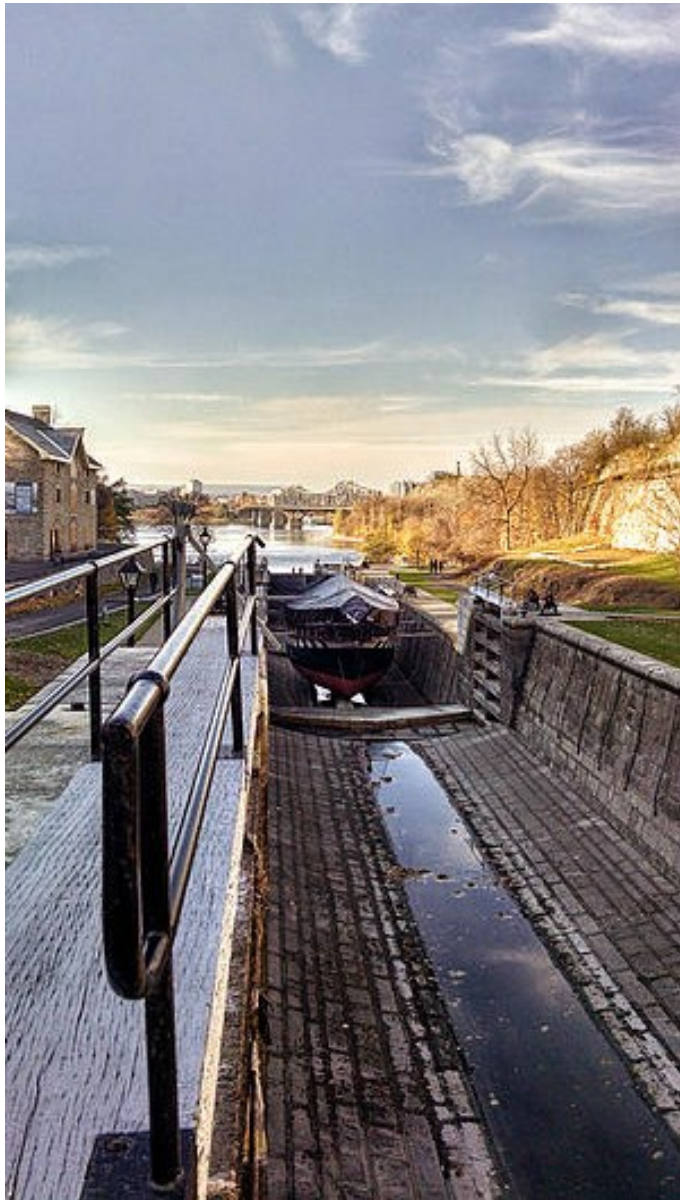


Fig. 1: The Rideau Canal locks and their connections with the Ottawa urban landscape. Photo by James Arteaga.

context. The paper provides an overview of the various stakeholders and outlines critical aspects of the current legislation system, underlying the lack of integration between heritage and urban planning policies.

Furthermore, this study provides a comparison with the Darsena Canal in Milan, Italy. This Canal was part of the broader system of water infrastructures that featured the city of Milan from the Middle Age until the XX century, when most of them were buried. The recent interventions of the Darsena Canal in the south area of Milan are presented. The comparison with the Italian case study outlines how historical infrastructures as tangible elements of identity can be the driver of a sustainable urban development from the social, cultural and economic point of view.

1.2 Historical framework: the Rideau Canal

In response to the War of 1812 between British North America (Canada) and the recently independent country of the United States, the Rideau Canal was built as a defensive measure by the British government. [1]

Lieutenant-Colonel John By of the Royal Engineers Corp was appointed supervisor of this extravagant project that would become one of the largest projects conducted in the British Empire. [2] The purpose of the Rideau Canal was to provide an alternative route to reach the Great Lakes from Montreal and Kingston without the need to use the St. Lawrence River, which in many parts was the border between the two countries and could have potentially severed trade in the British colony. [3]

Construction began in 1826 and was completed in 1837. It was originally owned by the British Government until responsibility was taken over by the Canadian Department of Railways and Canals in 1855 [4]. Within the scope of the project, 47 masonry locks and 52 dams that spread along the 202 kilometers of the Rideau Canal were built [5]. Fortunately, the Rideau Canal, was never needed for defensive purposes; but instead, was a transportation route between the 19th and 20th century. In 1972, because of the major recreational use of the Rideau Canal, it was transferred from the Department of Railways and Canals (currently the Department of Transportation), to Canadian Parks Service [6] (currently Parks Canada) [7]. The first recognition of the Rideau Canal as a significant heritage structure was in 1926 when it was commemorated for its 100th anniversary and became a National Historic Site of Canada [8].

In 2000, The Rideau Waterway, which includes the Rideau Canal and the Rideau River, was designated as a Canadian Heritage River for its outstanding natural, cultural and recreational values, as well as its high level of public support [9]. Seven years later, the Rideau Canal was added to the World Heritage List² because it was the most well preserved example of a slack water Canal in North America and it was one of the oldest Canal that remained operational throughout the years. All main

² The Rideau Canal fulfilled two criteria's during the nomination process which allowed it to be added to the List: 1) "Criterion (i): Represents a masterpiece of human creative genius; 2) "Criterion (iv): An outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage (s) in human history. Source: <http://whc.unesco.org/en/list/1221> Accessed on Sunday, April 1, 2016.

elements of the Canal, including its various related structures were preserved including: fortifications, dams, watercourses and bridges, as well as hand-powered winches, and the physical form of the channels that have remained intact. As identified by the UNESCO nomination, all elements of the nominated area are protected at the Canadian national level under the Historic Sites and Monuments Act of 1952 and 1953 [10].

2. The management of the canal: stakeholders and actors

The specific section selected for this analysis is located in the capital of Canada, Ottawa and is bordered by the Bronson Street Bridge in the west, Lansdowne Park on the east and goes through the well-established neighborhoods of the Glebe on the northern edge and Old Ottawa South on the southern edge of the Canal.

The analysis was conducted through, historical research utilizing historical aerial photos going as far back as 1958, archival personal photos, engineering plans and historical perspective maps. In addition, Library and Archives Canada was used to collect historic Fire Insurance Maps of Ottawa that dated back to June 1878. Along with these sources of information, stakeholders' websites were heavily used to understand what role they played in the development, creation, and maintenance of the Rideau Canal over the years, including: Parks Canada, The National Capital Commission (NCC), the Province of Ontario, and the City of Ottawa.

2.1 The Neighborhood: the Glebe

The Glebe is one of the oldest suburbs in the City of Ottawa, and is located south of Parliament Hill and the downtown core. The Rideau Canal, together with Dow's Lake defines the southern, eastern and western borders of the neighborhood. It is a major contributor to the landscape of the Rideau Canal and is home to Lansdowne Park.

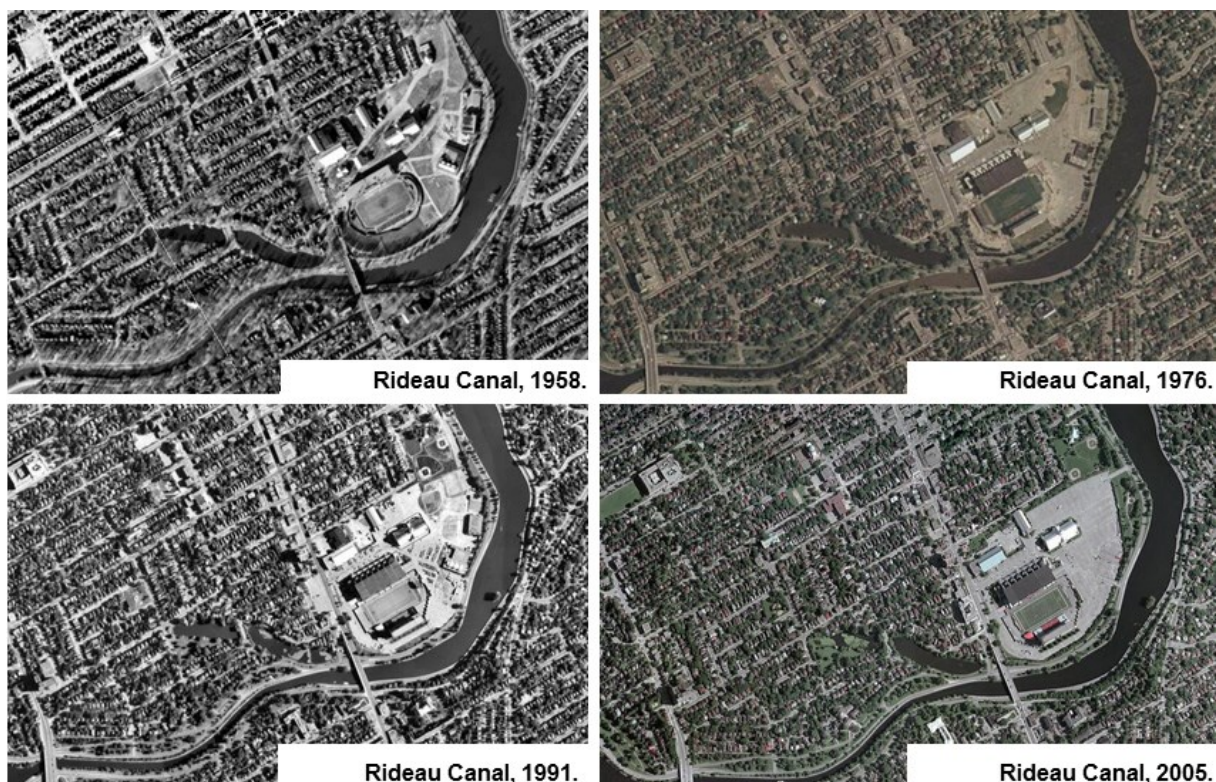


Fig. 2: Historical aerial photos employed in the site analysis. Image source: <http://jamesarteaga05.wix.com/rideau-canal#!aerial-photographs/c1ayy> Accessed on Saturday, October 3, 2015.

Until the 18th century, the land that the Glebe neighborhood occupies was used for hunting activities by the Algonquin peoples. In the 1800s, the forest area was cleared, and divided into lots, to be settled and built on. Even after the building of the Canal, in the 1840s, the land was mostly used for agriculture. The land was not considered valuable until the end of the century when the residential neighborhood started to be developed.

In 1868, the Ottawa Agricultural Society acquired a portion of the land, where Lansdowne Park is currently located, for the purposes of a fairground, which made the Glebe an area where people went for sporting events.

In the 1910s, the area became a truly urban area; many churches and schools were built, as well as residences and stores. In this period the Queen Elizabeth Driveway was built, slightly altering the original path of the Canal. The additional residences within the neighborhood built in the 1950s were considered to be one of the last significant physical changes along the Canal within the Glebe area. Currently, with its high-end residential market, a main street with shops and restaurants and a very involved community, the Glebe continues to keep the feeling of a small town alive within the downtown core of the Capital.

2.2 The Rideau Canal: Stakeholders

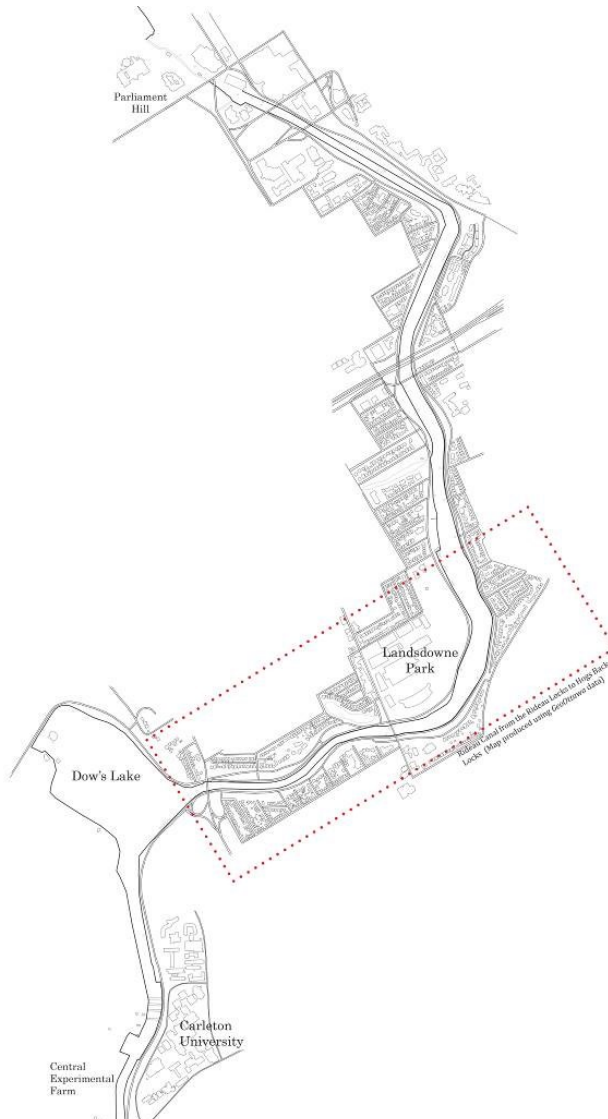


Fig. 3: Map showing the morphology of the Rideau Canal from the Rideau River to Mooneys Bay.

Due to the vast size of the Rideau Canal, there are multiple stakeholders and actors who have a role in the protection and maintenance of this important landmark. These include: government organizations, community-based non-profit groups, private landowners and of course the indigenous communities that identify themselves with land around the Rideau Canal. For the purposes of this critical analysis, three specific stakeholders were identified for their direct involvement with the Rideau Canal in the selected section. These included Parks Canada – the owners of the Rideau Canal and mandated to ‘...protect and present nationally significant examples of Canada’s natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations.’ [11], the National Capital Commission (NCC) – the owners of the riparian lands and mandated to ‘responsible for planning, as well as taking part in the development, conservation and improvement of Canada’s Capital Region.’ [12], and the City of Ottawa – the municipality in which the Canal is located.

2.2.1 Parks Canada

The Rideau Canal, as previously mentioned, is currently owned by Parks Canada. Because of this, it is the primary organization responsible for the protection and maintenance of the Canal. It was Parks Canada who created the Rideau Canal Management Plan (2005), which was to be the ideal vision of the Canal within a fifteen years span (ending in 2020) and was meant to be reviewed every five years to make any necessary revisions. It is within the Management Plan that the Rideau Canal buffer zone was identified as being a 30 meters setback from the shoreline for all new constructions and also required a frontage of 50 – 75 meters for waterfront lots. [13] In addition to the Management Plan, Parks Canada developed Ten Principles for Good Development along the Rideau Canal. [14]

- 1) Understand the landscape character;
- 2) Conserve wetlands;
- 3) Maintain a natural shoreline;
- 4) Set back development from the shorelines;
- 5) Plan the site to retain natural vegetation;

- 6) Preserve historic buildings and cultural features;
- 7) Appropriate building design;
- 8) Low impact dock design;
- 9) Minimize discharges to the Canal;
- 10) Seek further advice

The plan also mentions the strong role the municipalities along the Rideau Canal have in controlling the scale, location and type of development in the buffer zone. It is also interesting to note that the plan also mentions how municipal governments are 'to ensure that consideration [is] given to the conservation management of lands beyond the 30-m buffer zone, particularly where development has the potential to degrade the heritage values of the nominated property.' [15]

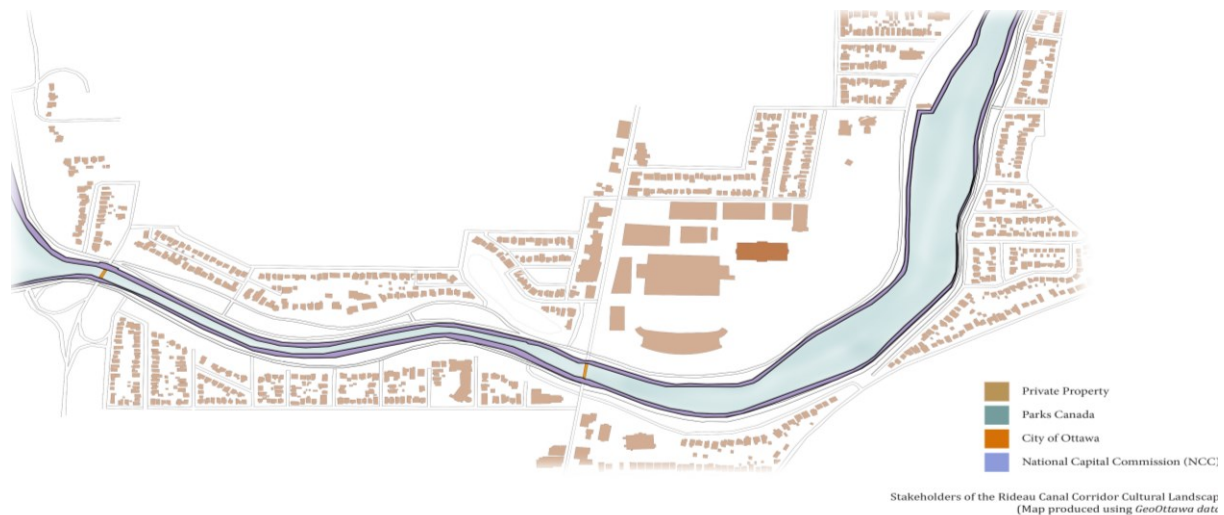


Fig. 4: Map showing the land stewardship of the different stakeholders within the research area.

2.2.2 City of Ottawa

As mentioned in the Management Plan (2005) municipalities have a major role in maintaining the buffer zone along the Rideau Canal. The City of Ottawa is responsible for the management of change on both private and public lands through zoning by-laws as mentioned in the Rideau Canal Management Plan. The Official Plan of the City of Ottawa retains a section dedicated to Cultural Heritage Resources. In this section, it identifies various aspects of heritage conservation including, how to protect and designate a property. The most interesting thing in this section is that it identifies major cultural landmarks such as the Rideau River and Canal corridors, scenic-entry routes, and multi-use pathways. These unique features of Ottawa have special regulations that are outlined in this section providing specific guidelines about the management of these unique travel routes. It also provides regulations and procedures that are needed to be done before anything is approved for development. [16] Currently, the city has designated the riparian lands adjacent to the Rideau Canal as Open Space (Zoning by-law O1L[310]-h), which restricts much of the development that could potentially occur on the land [17] [18].

2.2.3 National Capital Commission

The National Capital Commission (NCC) - who identifies the Canal as an important landmark and cultural landscape in the Capital Region - owns the riparian land along the section of the Canal located in the Glebe and Old Ottawa South. Currently, much of this land is only used as part of the scenic roads network found in Ottawa, which is owned and operated by the NCC [19]. Because the NCC is responsible for the management of these lands, it has a major role in the protection of the Canal's cultural landscape. In addition to this, the NCC has identified the Queen Elizabeth Driveway scenic route adjacent to the Canal as a landscape within itself, and would therefore increase the sensibility of any development adjacent to this specific section of the Canal [20].

3. Recent changes: Lansdowne Park redevelopment

Despite the efforts of the various stakeholders to protect the cultural landscape character of the Rideau Canal with different legal measures, one development along the Canal has brought the issues of heritage legislation/policy and its power - or lack thereof - to protect heritage assets, specifically cultural landscapes in dense urban areas, to the public's attention.

The Lansdowne Park project has been a very controversial redevelopment project that was completed in 2014. Led by one of the biggest developers in Ottawa, the project aimed to restore and create a new sports stadium, build commercial and office space, and construct condominium apartments on the site of the previous Canadian Exhibition Place - home to various heritage buildings such as the Aberdeen Pavilion. Regardless of different opinions concerning whether or not the project was successful in beautifying the area, it seems as though the project did not take into consideration the significance of the redevelopment area's proximity to the UNESCO site boundaries and its implications to the Rideau Canal cultural landscape.

After analyzing the gradual morphological change along the Rideau Canal's Corridor Cultural Landscape, one is able to see the drastic change that has occurred at Lansdowne within a short time. Because of its location, its proximity to various heritage sites, and its cultural significance to the community, there were many concerns regarding the grand scale redevelopment project. To comply with the desires of the development group, the city was required to transfer 25% of the public land available at the site to the hands of private ownership in order to accommodate the new shops, offices, and condominiums. [21] This resulted in significant alterations and, in one instance, to the relocation of a designated heritage building from its original location, which is against heritage principles and guidelines. [22] Also, numerous high density residential buildings towering the existing site and the community surrounding it, puts into question the compatibility of the development in relation to the existing urban fabric. And yet, with all these changes on top of the site, the most infringing aspect of this project was the infringement of the protected view planes that were identified in the Aberdeen Pavilion's heritage conservation easement – an easement being a legal document of protection between the owner and the government well as the view planes of the Rideau Canal [23] [24].

These controversial issues regarding the heritage on and off Lansdowne Park, makes one begin to question the effects of similar development projects happening around Cultural Landscapes and the issues regarding the effectiveness of the buffer zones around these sites, as well as the integration of heritage policies and planning legislation.



Fig. 5: Lansdowne Park and its last developments, 2014. Photo by James Arteaga.

4. The case of the Darsena project in Milan

The Darsena Canal, within the Navigli water system, represents a character defining element in terms of urban, environmental and socio-economical identity for the city of Milan. Indeed, the city, is nicknamed 'water-city' for the extensive presence of canals and water infrastructures [25].

The origins of the diffused and widespread system of artificial canals in Milan and more in general in Lombardy Region hail from the Roman Age [26], with the deviation of rivers Olona and Vettabia. Furthermore, in the Middle Age and in the Renaissance the Naviglio Grande on the south side, the Naviglio Viarenna on the north side and the Naviglio Martesana on the north-west side of the city were gradually built. In 1457, Leonardo da Vinci promoted the rationalization of the whole water infrastructure system, in particular through the optimization of the 'Conche' [27] (canals) for both people and freight transport. Implementation works were carried out during the Napoleonic and Austrian dominations of Milan. During the Fascist regime the majority of Navigli were buried to facilitate the mobility of automobiles. After Second World War, the Darsena was abandoned and

became an empty urban space. Despite of their environmental, social and cultural values the Navigli's canals³ have not been always considered within the urban development in the last thirty years.

In 2004, the Municipality of Milan has launched a competition to foresee an innovative public space characterized by a renovated use of the waterways (Navigli and Darsena). The competition concerned the design of a pedestrian square, new public spaces, a market and the renovation of the Darsena banks, as well as the water maintenance works. The project has been completed within May 2015 in occasion of the opening ceremonies of EXPO 2015.

The primary objective of Darsena Canal project is to find a balance between the conservation issues and the economic aspects of urban growth. Water infrastructures and built heritage are recognized as drivers of attractiveness for local inhabitants, tourists, real estate investors, retail and manufacturing activities. Data provided by the Municipality of Milan confirm that tertiary and retail vocation of the Darsena area improved over the last 5 years (office land-use: +1.5%; retail land-use: +7.2% both percentages values higher with respect to Milan average [28]). These evidences strengthen the direct relationship between 'territorial capital'⁴ [29] and economic spillover, where the cultural element of the Navigli contributes to implement the potential territorial capital of this area.

Therefore, the recent Darsena renovation project focuses on the key role of waterways as character defining elements in the urban context of Milan. The redevelopment project of Navigli area, as well as the recent urban planning policies [30], identify the water infrastructures as a key-factor to increase the environmental and social quality as well as the involvement of the local community in the redevelopment processes. According to the European Landscape Convention (2000), the UNESCO Recommendation on the Historic Urban Landscape (2011) and the Convention for the Safeguarding of Intangible Cultural Heritage (2003-2007), the morphological configuration of Navigli and Darsena represent part of the historic urban landscape, as well as element of urban identity due the intangible aspects relating to its history and its roles within the city of Milan.

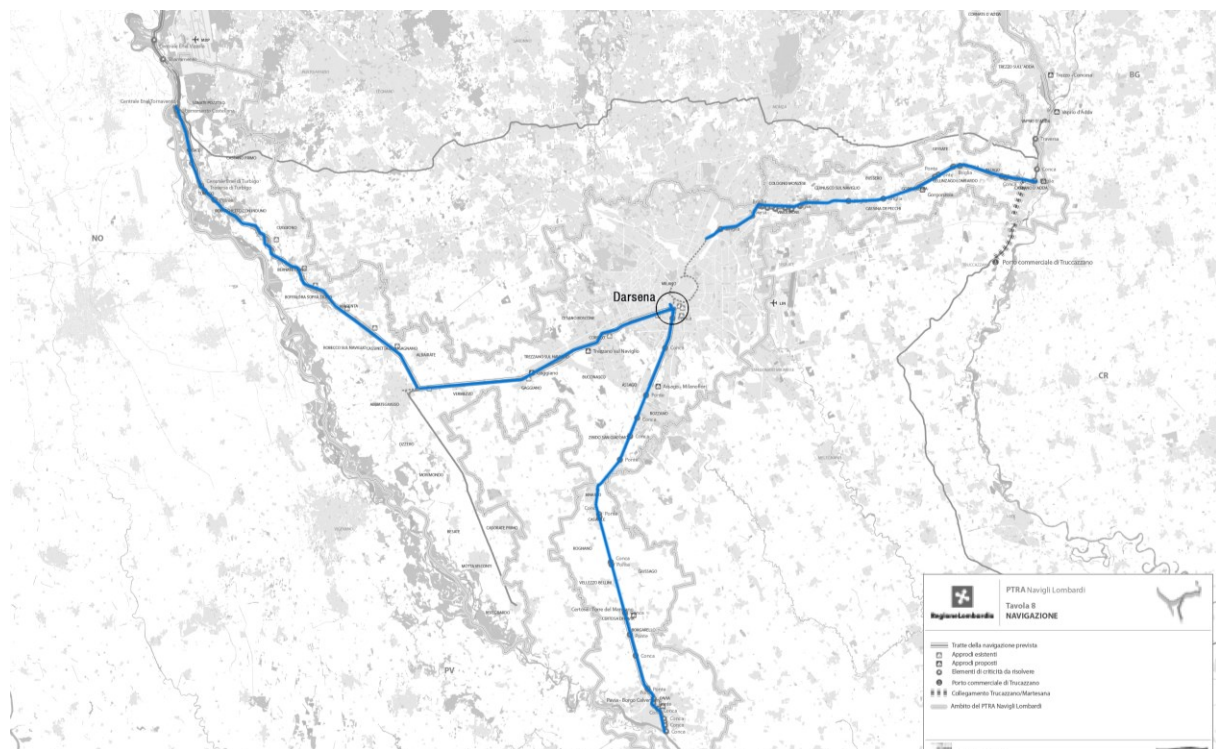


Fig. 7: The Navigli's canals system. Image source: Piano Territoriale Regionale d'Area (elaborated by the Authors).

Furthermore, the Darsena Canal project represents a positive example of integration between heritage conservation and urban development issues. Currently, there are not prescriptive norms for new urban development directly related to the presence of the waterways⁵ nor any buffer zone. Nevertheless, the recent urban development – including the Darsena project – is oriented to a

³ Lombardy Region has presented the candidacy of Navigli to the World Heritage List (WHL) in 2014.

⁴ Territorial capital may be seen as the set of localised assets – natural, human, artificial, organizational, relational and cognitive – that constitute the competitive potential of a given territory (Camagni, Capello, 2009).

⁵ Construction Index for historic and consolidated areas <1 sqm/sqm). Comune di Milano. 2012. "Piano di Governo del Territorio" Piano delle Regole art. 6, Documento di Piano art. 5. <http://www.comune.milano.it>, (2015).

sustainable growth, respecting and promoting the historical elements. On the one hand, the development consists of the rehabilitation and reuse of the widespread heritage of industrial and manufacturing buildings, developed in particular over the 19th and the 20th century along the canals. The refurbishment and restoration projects, both for tertiary and housing, contribute to keep and preserve the historic traces and the local identity. On the other hand, the enhancement of the canals and their surroundings is based on the improvement of public spaces, through the creation of new gardens, parks, greenways, squares, cycle paths.

The management model of Navigli and the planning legislation are supporting the balanced development of this area of Milan. Indeed, the whole water infrastructure is managed by Navigli Lombardi Company [31], founded by a series of public and private institutions, both at local and regional scale. Therefore, this trans-sectorial and multi-scaling management approach is fundamental to guarantee coherent design actions. The Metropolitan Government of Milan established in 2015 may represent an important governance framework for coordinating the design activity set.

Finally, the results of this project derive from the balanced mixture between conservation, local identity, enhancement, urban development and economic growth issues. As Saverio Muratori stated “[...] a coherent balance between permanencies and changes in our cities [...]” has been followed in the presented approach [32]. In these terms, Darsena and Navigli project may represent a best practice replicable in similar contexts.

5. Conclusions

According to these issues, the broader protection of the Rideau Canal remains a challenge in the Ottawa urban landscape with respect to its dimension and scale. Therefore, the following questions arise:

- How broader concept of conservation can define new boundaries of heritage sites?
- How to integrate the conservation issues in the planning practice?
- What are successful models for conserving ‘cross-border’ cultural landscapes, historical routes or urban landscapes?
- How should we deal with urban development and heritage conservation?

In line with these issues an alternative approach should be developed. The buffer zone boundaries should be rethought in order to improve a protection of the vistas, changing of views and significant elements regarding the cultural landscape.

Moreover, to make conservation actions more effective, an integrated approach for the Site within its urban landscape is advisable. According to the UNESCO Recommendation on the Historic Urban Landscape (2011), it is necessary to promote a further integration between the urban planning policies and the UNESCO management plans. In the presented case of Lansdowne Park, a lack of integration between the City of Ottawa’s Official Plan and the UNESCO management plan developed by Parks Canada was found. According to our analysis this gap between heritage and planning policies allowed the redevelopment of the Lansdowne Park area that did not fully address the compatibility issues (in term of materials adopted, urban shapes, buildings height, etc.).

The presented case of the Darsena Canal in Milan is an example of how to deal with the historic water infrastructure conservation and promotion within urban areas, suggesting a possible integration between heritage conservation and urban development. Furthermore, it outlines how economic and social growth can coexist, promoting a sustained growth.

–In a future perspective, an integrated approach could also include the practice of ‘knowledge-sharing’ between similar cultural landscapes, such as the Erie Canal in North America, the Canale Cavour in Italy or the Canal de Castilla in Spain, in order to share and disseminate best practices in the management of this kind of site and the integration with their contexts.

Finally, another recommendation concerns the seriality issue. The Rideau Canal can create a network with similar historical and geographical contexts or purpose-built sites. In order to improve the knowledge and the importance of these kinds of structures all over the world, an interactive dynamic digital platform connecting similar sites could be developed. This systemic approach will support conservation processes combining technology, landscape, nature and *genius loci* orienting future developments.

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