

Para un proyecto del límite entre tierra y agua en la laguna de Venecia

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RESUMEN *

El límite entre la tierra y el agua presenta múltiples configuraciones en la laguna de Venecia, como respuesta a las necesidades dictadas por los usos y la ubicación. El artículo identifica algunas de estas conformaciones en diferentes áreas de la laguna, cerca del continente, en las bocas de los puertos, a lo largo del río menor o en el Gran Canal, hasta analizar algunas respuestas dadas por la arquitectura contemporánea sobre este tema.

Palabras clave: Laguna de Venecia, Gran Canal, Murano, Torcello, límite, proyecto, tierra, agua, canales, arquitecturas sin arquitectos.



[1] FUORIROTTA. THE OTHER MAP OF VENICE, 2014. DETAIL WITH PANELS FOR THE ISLANDS OF BURANO, MURANO, TORCELLO AND SANT'ERASMO.

LIVING to the north of the *Fondamenta Nove*, just beyond the cemetery of San Michele, is Murano, rarely well represented in the restricted scope of Venice's tourist maps. Together with Burano, Torcello, and Sant'Erasmus, it migrates to the margins or the back of the map and is left stranded among its folds as occasionally happened to vessels in the shallow waters of the lagoon. And in the end boxes and dashes separate the island renowned throughout the world for its glass from the other lands that surfaced from the estuary and the pale blue expanses of the remaining lagoon water. The green colouring of Sacca San Mattia and Sacca Serenella, to the north and south-west part of the historically most consolidated part of Murano, seem to allude to vague grassy surfaces. In reality, one is a site which has long been a place for collecting and accumulating the leftovers from producing glass, the other an area of a peripheral character in which sheds alternate with areas occupied by boatyards and derelict land. Sacca San Mattia is fairly well known to Venetians since, until not so long ago, it was possible to gather remains from the glassworks' production: chipped drops of chandeliers, the stems of glasses, small animals, shapeless pieces of coloured glittering glass. On the contrary, the historical documents preserved in the archives tell us little of the lesser-known Sacca Serenella and show great reluctance in providing information on its initial layout [1].

On examining the 18th-century plans of Murano and topographic maps of this part of the lagoon, we can observe the absence of any disruptions in the aqueous surface even where we would expect to find traces of ongoing reclamation. Confirmed by representation after representation, this state of affairs would change with the Military Topographic/Hydrographic Map of the Venetian Lagoon drafted between 1809 and 1811 by Captain Augusto Denaix. All of a sudden, here was a schematic drawing of an island of a modest size with an irregular comb

* Véanse los resúmenes en italiano e inglés en la página 126.

shape. In 1843-44, as verified by the survey of unauthorized works in the lagoon conducted by the engineer Antonio De Bernardi, Sacca Serenella aroused concern due to some sections of its edges lacking works to contain the land and those protective actions to prevent “detrimental slipping of land into the lagoon” which the Venetian Magistracy had monitored up until the fall of the Republic. A century after De Bernardi’s technical report, the IGM map of 1940 shows us the Sacca with a pentagonal configuration. Its peremptory geometry seems to evoke not commonplace landfill for settlement purposes, but a part of the nobler system of fortifications which discretely defended the access points to the lagoon [2].

Architecture without architects

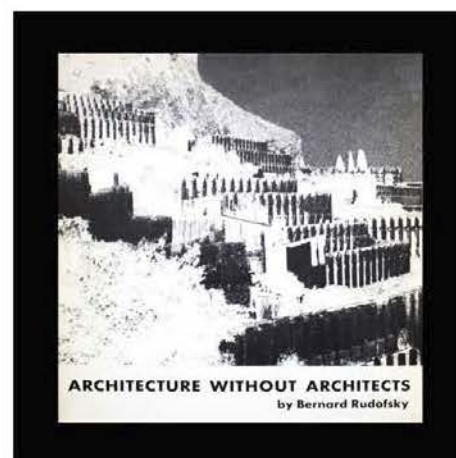
Summary cartographic representations, meagre information on how and when the *insula* was formed, decades of disputes over the ownership of the reclaimed land—first private individuals, then the State, and finally the Municipality, doubts regarding the responsibility for construction and maintenance of the related margins, the silence of the documentary sources, all of this makes Sacca Serenella a place of uncertainty, lacking any interventions to unify its margins, and also a place with overlapping hydronyms and toponyms, dense with references to the site’s origins. “*Sacca*”, a noun indicating coves and inlets along the line of the boundary between land and water, becomes, by extension, a generic name designating the physical result of reclamation: (the island of) Sacca Serenella continues to retain a memory of the place’s lost aqueous nature in its contracted denomination.

It may therefore seem strange that, what with the morphological wealth and constructive complexity of many other lagoon margins¹ and the glut of portrayals and archival documents for the main urban shorelines, we have chosen Sacca Serenella to begin examining the main characteristics of the boundary between land and water in the Venetian lagoon. It should however be stressed that the context, the functions historically located along the shorelines and a technical tradition honed over the centuries have shaped the lagoon’s margins even where it is difficult to recognize activities coordinated by the technical offices which followed the ancient magistracies of the *Serenissima*. The shorelines of the lagoon’s islands, barring certain minor cases, are in fact the result of continuous construction activity, not realized by the authoritative figures of designers, but by collective skills and knowledge built up in the wake of a common heritage. As noted by Bernard Rudofsky, the talent of anonymous builders and the interest of “authorless” works of architecture come together in those natural environments whose physical, morphological, geographic and climatic characteristics turn needs of a defensive nature with the necessity to define the settlement limits into a real challenge². Rudofsky does not speak explicitly of Venice; and yet many of the arguments, images and examples he proposed at the exhibition *Architecture Without Architects*, held in 1964 at the Museum of Modern Art in New York³, seem to offer interpretive keys valid for effectively narrating the history of those techniques which have fashioned the taxing environmental conditions of the lagoon to the demands of life [3].



[2] MILITARY TOPOGRAPHIC/HYDROGRAPHIC MAP OF THE VENETIAN LAGOON COMPILED IN THE YEARS 1809-10-11 BY CAPTAIN AUGUSTO DENAIX. MAP OF THE ISTITUTO GEOGRAFICO MILITARE, 1940. DETAILS OF THE AREA OF SACCA SERENELLA IN MURANO.

[3] BERNARD RUDOFSKY, *ARCHITECTURE WITHOUT ARCHITECTS. A SHORT INTRODUCTION TO NON-PEDIGREED ARCHITECTURE*, ACADEMY EDITIONS, 1964. COVER.



1. In this essay, “margin” refers to the different “*raisons d’être*”, i.e., the different forms that the margin may take in relation to locations and usages. The reflections presented in these pages are in part indebted to the research work called “Definition of an abacus on the status quo of the lagoon margins” conducted by IUAV Studies & Projects on behalf of the Venezia Nuova consortium in which participated, in addition to the undersigned, the architects Giuliana Fassari, Stefano Giorgetti, and Mario Spinelli, the photographer Vittorio Guida, and the lecturers Giovanni Campeol, Marino Folin, Mario Piana, and Gian Paolo Rallo. I would like to take this opportunity to thank my colleagues Lorenzo Calvelli and Alessandra Ferrighi for some invaluable bibliographical pointers.

2. Rudofsky, Bernard, *Architecture Without Architects. A Short Introduction to Non-Pedigreed Architecture*, Academy Editions, 1964, passim.

3. The exhibition ran from 9 November 1964 until 7 February 1965.

4. It would be more correct to write “used to follow one another”, given that recent interventions along the waterway inside Sacca Serenella have profoundly altered the character and wealth of margins illustrated in some of the photographs published here to complement the text.

5. The Venetian term “*penelo*” indicates narrow wooden quays to more easily reach moored vessels of small and medium tonnage from the banks.

[4] BOATYARD ON THE CLOSED WATERWAY OF SACCA SERENELLA, MURANO. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.

[5] NORTHERN MARGIN OF THE CLOSED WATERWAY OF SACCA SERENELLA, MURANO. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.



The process of adapting to a unique environment has given rise to singular architectural forms and infrastructures in the lagoon. Gradually perfected, these forms were handed down over time via construction knowledge applied to both monumental and marginal sites, along the waterfronts of the Grand Canal or the edges of the many islands scattered across the vast liquid plain of the Venetian lagoon. It is precisely in the places furthest from the centres of political and economic power of the *Serenissima* that the presence of “authorless” margins manifested itself with the greatest clarity, not linked to the insights of an architect, nor the procedures of the *Proti* of the *Serenissima*, but soundly based on the rationale of a specific site.

Thus, the hook-shaped closed waterway of Sacca Serenella which penetrates the main body of the island answered a requirement to allow vessels to reach the innermost part of the land. The banks of the waterway needed to contain the soil and house artisan sheds, workshops for the production of glass and boatyards, produced, within a few hundred metres and with an extreme poverty of means and construction systems, a partial yet significant cross-section of the different types of margin to be found throughout the lagoon. Banks that are dissimilar in shape and material flank and rapidly follow one another along the waterway⁴: margins in earth consolidated with fill stones, a boatyard, waterfronts made using mixed construction techniques, slipways, paved stretches with perpendicular or sloping profiles, “frayed” sections determined by the concentration along some stretches of *peneli*⁵, private jetties, and bridge cranes [4-5].

In a place which is so utterly peripheral, not only in relation to Venice, but also with respect to the historical centre of Murano, it may come as a surprise that there is such a concentration of formally diversified margins. The physical nature of the places and the consequent occurrences of practicability have generated, along the perimeter of the *insula*, shorelines characterized as a whole by a morphological variety no less than that to be found along the waterways of the consolidated city's dense urban fabric.

The substance of the limit

It would be possible to track down in the rich iconography of the city, the bird's-eye views, the canvases of the Renaissance and the first black and white photographs, a whole series of meaningful images to illustrate the multiplicity of forms in the lagoon's margins. A similar iconographic collection could highlight many other functions accompanying the primary one of containing the soil: in fact, the waterfront offers mooring and transshipment possibilities, intersperses resting, meeting and trading places, and offers a space to celebrate communal festivals and public rituals.

If geographical location, contextual conditions and details on the functions yield useful elements to identify the main characteristics of the margins, to know their past history and understand their urgent present needs, it becomes opportune at this point in our discourse to examine some specific cases. In fact, we need to verify to what extent the specific nature of the sites and usages determine such differing configurations in the waterfronts.

Banks facing the mouth of a port exposed to the continuous ebbing of the tides and the force of the waves, like the margin built during the Austrian domination at the Alberoni, or interrelated with the breadth and depth of the Giudecca Canal, entail particular morphological-construction characteristics and convenient extensions of the pilings, but also engender the need for a special form of attention to the structures' durability compared to the waterfronts in tracts of the lagoon less exposed to currents and waves [6-7].

The Churches of Madonna dell'Orto in Cannaregio and Il Redentore on Giudecca were erected on forecourts and resound right up to the water's edge through the design of the paving, the solemn spatiality of the interiors, and the impressiveness of the façades [8].

Conversely, the life of one of Europe's most famous markets, at Rialto, is reflected in the Grand Canal, with a vast variety of architectural figures and elements of mediation between the water space and the waterfronts for commercial activities and the transshipment of goods: storehouses, porticoes, wharves, as well as stairs, mooring poles, landings, quays and *vaporetto* stops. As a representation of secular-religious powers and trade, the refined Latin used by Jacopo Sansovino in Piazza San Marco is very far from the "dialect" which he adopted in the construction of the new public buildings —the *Fabbriche Nuove*—ranged along the Grand Canal at Rialto⁶.

If in historical Venice the *fondamente* —the paved banks— conversed with the character of the architecture and the types of function which took place in the open spaces, this condition was not



[6] VENICE LIDO, ALBERONI, BOCCA DI MALAMOCCO. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.

[7] FROM THE TOP, THE WATERFRONTS OF: ZATTEREGESUATI, THE NAPOLEONIC GARDENS, SANT'ERASMO SOUTH, SAN GIULIANO EAST, SANT'ERASMO NORTH, SAN GIULIANO WEST, MURANO-SACCA SERENELLA, LIDO-ALBERONI.





[8] FORECOURT OF IL REDENTORE, GIUDECCA. PHOTOGRAPH BY VITTORIO GUIDA, IUAV STUDIES & PROJECTS, 2002.

[9] MARTINO CANTELE, *SURVEY OF THE GROUND FLOOR AND SECTIONS OF THE FABBRICHE NUOVE OF JACOPO SANSOVINO BEFORE RESTORATION, 1855* (STATE ARCHIVES OF VENICE, CIVIL ENGINEERING, B. 863).

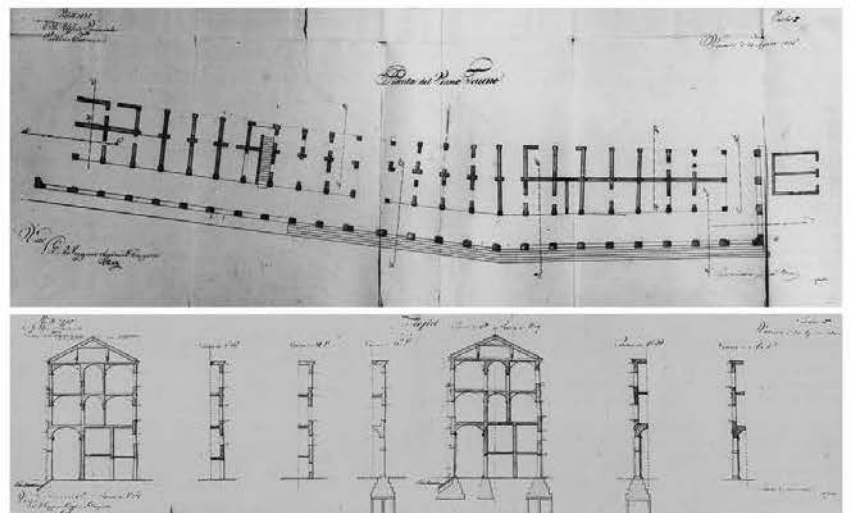
always adequately interpreted by the transformations introduced during the 19th century. One example being the raising of the laying surface of the *Fabbriche Nuove* and the replacement of the stepped embankment with a perpendicular margin. These interventions determined not only an alteration of the original proportions of Sansovino's building because of the modified height of its arches⁷, but also the loss of that permeability of the public space which characterized relations between the market, the porticoed area at the base of Sansovino's building, and the Grand Canal [9].

Despite the numerous changes made to architectural works, public spaces, and waterfronts during the 19th century and the first decades of the 20th century, the relationship between the buildings, the paved surfaces and the margins is still clearly apparent today, not only in the consolidated city but also in more outlying sites. This is the case, for example, of a long stretch of the San Giuliano canal on the edge of the lagoon where, in recent times, a series of warehouses have been erected for the storage of goods, built partially on land and partially over the water [10].

The nature of a site flanked by both waterways and roads has generated brand-new buildings which are combinations of traditional

6. See Calabi, Donatella, *Le fabbriche*, in Calabi, Donatella, Morachiello, Paolo, *Rialto. Le fabbriche e il ponte*, Einaudi, Turin, 1987, pp. 154-159. Calabi, referring to Sansovino's buildings at Rialto, wrote: "We feel it is more convincing to state that he [...] also accepted the idea of the building's humility, as being suited to the market and derived some satisfaction in the way of working. [...] Convinced that language should be 'adapted [...] to the themes gradually addressed', that it can 'be contaminated [...] sound refined or subdued', or even be altered, he obscures or expels the domain of grammar [...]" pp. 158-159.

7. See Pellegriti, Roberta, *La ricostruzione ottocentesca delle fabbriche Nuove di Rialto*, in Morresi, Emanuela, *Jacopo Sansovino*, Electa, Milan, 1999, pp. 320-326. Pellegriti wrote, with reference to the 19th-century transformations of Sansovino's buildings: "The staircase that developed along the entire façade would be replaced by a paved stretch ending in a right angle, forcing the portico to retreat to the depth of the treads removed. The operation, which resulted in a reduction in the height of the arches estimated at around 14cm, was reflected in the dimensions of the uprights' bases, whose height was partially absorbed by the new pavement." p. 324.





land-bound foundation systems and others based on piles in the water. The small sheds have been built using metal frames, concrete panels, and corrugated PVC sheeting. These are the same materials used in the myriad SME production zones scattered throughout those cursory settlements which characterize large areas of the Veneto region. And yet, here, those same materials have built works of architecture which, regardless of the mediocrity of their assembly, subconsciously refer to the structures built along the waterfronts of the streams/channels of the earliest lagoon settlements⁸. In the same way, also the small brick and wood boatyard at San Pietro in Volta on the inner shoreline of Pellestrina, or the embankments of Lio Piccolo in the northern lagoon, retain, in their conformation, a memory of the first works carried out to develop the lagoon territory, characterized *ab antiquo* by widespread port functions and a system of waterfronts, safe havens and places sheltered from the currents which were necessarily extremely varied and composite⁹ [11-12].

The technical configurations assumed by the margins therefore outline specific forms of the lagoon's infrastructure and are characterized by an extraordinary capacity for adaptation to each site's features. The geometries of plan and section, the construction techniques, the usages, the exposure to winds and currents, the depth of the streams and channels, and the mutual interdependencies between all these parameters constitute elements necessary not only to highlight the plethora of the waterfronts' responses at individual sites, but also the adoption of certain irreducible base figures in the diversification of the forms.

Accompanying the interpretation of the boundary between land and water, investigations into the history of contexts, the building types and functions attested along the waterfronts, surveys of the elements of the public infrastructure, at times even diminutive (from the paving to the bollards, from wooden jetties to metal rings for the mooring of boats), analysis of vegetation transects and perception studies means interpreting the margin not as an artefact *absolutum*, i.e. detached from the place where it stands, but as a construction which, by separating the earth element from the water element, must necessarily relate to the properties and conditions which both bear.

[10] RIO DI SAN GIULIANO, WAREHOUSES BUILT IN PART ON THE MAINLAND, IN PART OVER THE WATER USING A PILE SYSTEM. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.

[11] BOATYARD OF SAN PIETRO IN VOLTA, PELLESTRINA. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.





[12] EMBANKMENT AT LIO PICCOLO, NORTH LAGOON. PHOTOGRAPH BY VITTORIO GUIDA, IUAV STUDIES & PROJECTS, 2002.

It is no coincidence that the *Trattato della Laguna di Venezia* by Bernardo Trevisan, published in 1715¹⁰ and updated in 1718, opens with an allegorical illustration crowned by a skilfully rendered wind-tossed cartouche bearing the words "Opposing Elements with Elements"¹¹ [13].

In the background rises Venice, with the Doge's Palace, the two columns of Saint Mark and Saint Theodore, the bell tower, and the National Library. In the foreground, two tussling female figures are the protagonists of the scene: one, in a toga and wearing sandals, stands on the shore; the other, half-naked and bare-footed, stands with one foot on the ground and the other in the water. The struggle is restrained and almost seems like a dance reminiscent of the "*quid velit et possit rerum concordia discors*" which Horace wrote of¹². These two women represent the two elements on whose precarious balance the survival of the lagoon of Venice was, and still is based. The site of this dispute is not the clear and defined limit of the far-off waterfront of Saint Mark's which appears in the background, but the mobile and precarious foreshore¹³.

[13] "OPPOSING ELEMENTS WITH ELEMENTS" FRONTISPIECE OF THE *TRATTATO DELLA LAGUNA DI VENEZIA* BY BERNARDO TREVISAN, 1715.



The lagoon margin must not therefore be understood as a two-dimensional entity interposed between two separate elements, but as the space comprised between the fighters, like a substance that can change depending on which of the two prevails, depending on the circumstances and places, depending on the winds, the seasons, the times and the tides.

The fact that the substance of the margin not only relates to its construction section makes the project's field of action that much more complex. The components of the margin consist of clays, soil held together by the root systems of plants, layers of earth mixed with stones, the extension of the foundations on their wooden piles, but also the fabric of the walls, their cladding, that kerb in Istrian stone which often rises at the upper end of the construction section of the waterfront. However, its substance is also related to the spaces of distance and crossing, to the expanses of the paved stretches, the magnitude of the public squares, the life and functions that take place in them, and the stratification of historical signs. On this substance insist both the closer look which appreciates the texture of the materials and the skilful construction details, as well as the panoramic view that takes in remote islands and the horizon line in a visual field continuously balanced by that relationship between foreground and background which constitutes



one of the most typical features of the lagoon landscape. Regardless of the fact that the place requires ordinary maintenance, restoration work or new-builds, the substance becomes the true scope of reflection for a project whose scales of intervention vary from a few tens of centimetres—those investigated by apposite geometric surveys, painstaking analyses of degradation and instabilities—to expanses in which the only possible element of measurement and orientation coincides with the punctuation of the mooring and guide posts which line the canals and channels [14].

Projects for the limit between land and water

The wide polygonal stairway of the Basilica of Santa Maria della Salute, designed by Baldassare Longhena, emphasizes, together with the portico and the golden ball of the *Dogana da Mar*, the easternmost end of the Grand Canal before it flows into the basin of Saint Mark's. This is certainly no random placement of the votive temple in this part of the urban fabric, nor is the fact that its height with respect to the level of the public space initiates a particular relationship with the waterfronts and the water itself [15].

That Longhena was not the designer of the current pavement in front of the basilica¹⁴, as portrayed by Michele Marieschi in the third decade of the 18th century, has by now been confirmed. The archival documents found attest that he had proposed a traditional paving of "herringbone pietracotta" for the public space outside the church. This pattern, clearly visible in a depiction by Domenico Lovisa of 1644, aimed to establish a colour composition with a much more vivid contrast between the church, the brick paving, and the surface of the water if compared to today's pavement in trachyte and Istrian stone [16].

The stairs, the surface of the *campo*, the relief decorations carved on the edge of the *fondamenta* of the Salute were therefore intended as figures of a single urban composition built from differentiated but dialoguing parts. Moreover, such a site of exceptional scenic

[14] THE WATERFRONT OF THE ISLAND OF SAN GIORGIO AND, IN THE BACKGROUND, SAINT MARK'S SQUARE AND THE RIVA DEGLI SCHIAVONI. PHOTOGRAPH FROM THE FILIPPI ARCHIVE, VENICE.

8. On the character of the construction work in the lagoon and on the relationship with the "*villae rusticae*" built in Roman times along the meandering edges of the water-courses, see: Fabbri, Gianni, *Venezia: quale modernità. Idee per una città capitale*, Franco Angeli, Milan 2005, p. 85.

9. See Rosada, Guido, Zabeo, ... *Stagna...inrigua aestibus maritimis...Sulla laguna di Venezia ovvero su un comprensorio a morfologia variabile*, in "Histria Antiqua", no. 21, 2012, pp. 241-262.

10. Trevisan, Bernard, *Trattato della laguna di Venezia*, for Domenico Lovisa, Venice 1715; today also in an anastatic reprint, Arnaldo Forni Editore, Sala Bolognese, 1988.

11. On Bernardo Trevisan, see: Ulvioni, Paolo, *Atene sulle lagune: Bernardo Trevisan e la cultura veneziana tra Sei e Settecento*, Venezia, Ateneo Veneto, Venice 2000.

12. Horace, *Epistles* 1, 12, 19.

13. See Caniato, Giovanni, *L'organismo delicato: il governo idraulico e ambientale*, in Caniato, Giovanni, Turri, Eugenio, Zanetti, Michele, *La laguna di Venezia*, Unesco e Cierre Edizioni, Verona 1995, p. 227-247; D'Alpaos, Luigi, *Fatti e misfatti di idraulica lagunare. La laguna di Venezia dalla diversione dei fiumi alle nuove opere delle bocche di porto*, Istituto veneto di scienze, lettere ed arti, Venezia 2010; D'Alpaos, Luigi, *L'evoluzione morfologica della laguna di Venezia attraverso la lettura di alcune mappe storiche e delle sue carte idrografiche*, Comune di Venezia, Venice 2010. For further information see: Svalduz, Elena, *"Nella fine della città": ampliamenti e margini urbani a Venezia in età moderna*, Folini, Marco, in *Sistole/diastole. Episodi di trasformazione urbana nell'Italia delle città*, Istituto Veneto di Scienze, Lettere ed Arti, Venice 2006, pp. 207-270; the following monographs of "Quaderni. Documenti sulla manutenzione urbana", Insula, Venice: *I rii di Venezia*, no. 2, 2002, *I rii di Venezia*, no. 2, 2000, *I muri di sponda*, no. 9, 2001, *I limiti di Venezia*, no. 17, 2003; Caniato, Giovanni, et al., *Venezia la città dei rii*, Cierre Edizioni - UNESCO - Insula, Verona 1999, pp. 17-87.

14. See Franz, Martina, *Baldassare Longhena*, Istituto Veneto di Scienza, Lettere ed Arti, Venice, 2004. Franz, referring to the space in front of the Basilica of Santa Maria della Salute, wrote: "[...] The geometric design of the *piazzale* does not correspond at all to the project of the architect who had suggested a traditional paving of "herringbone pietracotta", p. 164.



[15] MICHELE MARIESCHI, *VIEW OF THE BASILICA OF LA SALUTE*, 1737 CA. OIL ON CANVAS, 124X213CM, THE LOUVRE, PARIS.

quality as the conclusion of the Grand Canal required solutions involving the relationship between the monument, the waterfront and the public space which drew on the quintessential nature of the site. Nonetheless, regardless of whether a waterfront lies at the foot of churches and noble mansions or follows the profile of kitchen gardens and uncultivated land, it is always possible to identify a system of relationships between its form and the character of the place. And, as we wrote a few lines above, sometimes it is also possible to grasp the balanced perceptive relationships between a foreground of masonry, stone quoins, mooring posts, wooden walkways and beaches, and a background punctuated by bell towers, churches and military fortifications¹⁵ lying above the calm stretches of the lagoon's water.

There is no doubt that the lagoon's architecture, margins and natural environment must be examined in a coherent and complementary manner. This is highlighted by one of the more significant passages of the "Final Report"¹⁶ drawn up in 2001 by the technical-scientific committee of the Ministry of Public Works which evaluated interventions on the banks of Torcello. Marino Folin, Pier Francesco Ghetti and Paolo Morachiello, the authors of the document, proposed some guidelines for the works (drainage channels to allow patient work of restoration, foundation reinforcement, and exploitation of existing landholdings to take place in dry conditions) and added a note to emphasize the necessary care with which to tackle the factor of the "vegetation which gradually joins with, infiltrates and engulfs monumental complexes". On the age-old island of Torcello, proposed designs cannot stop at caveats of a correct and careful restoration of the banks,

15. On the subject of the lagoon's military fortifications, see: Marzo, Mauro, *A Theme, a Place: Defense of the Lagoon*, in Marzo, Mauro (editor), *Fortified Places in the Venetian Lagoon*, Festival Architettura Edizioni, Parma 2012, pp. 31-75.

16. For details on the interventions in Torcello and the October 2001 report, see: Lombardi, Giorgio, *La complessità della salvaguardia, tra ambiente, storia e cultura. Adeguamento del progetto per l'isola di Torcello*, in "Quaderni del Consorzio Venezia Nuova", nos. 1-2, 2003, pp. 11-30.

but must directly question the issues of the particular context: as a result, tools of perception appear to be the only ones that can define fair and balanced relationships between architecture, margin and context.

The vision was built on the aforementioned relationship between foreground and background, between margin and the original landholding of the paved area, among green masses and architecture which then become one of the most conclusive themes for the project which has to tackle the tricky theme of the “limit” in the lagoon. Venice is, on the other hand, as Iosif Brodskij wrote, “the city of the eye”¹⁷; after a few days’ stay here the body starts to regard itself as merely the eye’s carrier, “as a kind of submarine to its now dilating, now squinting periscope”¹⁸.

In fact, many of the architectural projects conceived for this city are based on an idea of architecture related to aspects of perception. When participants in the second phase of the competition for the new seat of the IUAV University of Venice at San Basilio on the western end of the Zattere were asked to demonstrate the reasons behind their design to the jury¹⁹, the finalists and subsequent winners, Enric Miralles and Benedetta Tagliabue arrived at the meeting carrying some misshapen pieces of glass and a series of slides. The pieces of glass were leftovers from the production of Murano, the same that it was once possible to gather at the Sacca of San Mattia which we mentioned at the beginning of this essay [17].

The slides projected by Miralles portrayed not so much the area which was the object of the competition, as situations in which certain characteristics of the lagoon city emerged in all their force: the heavily contrasting relationship between the areas of light and shade, the ever-changing colour of the water, the relationship between the margins and the waterways, the frequency of stairs along the canals [18].

Starting from these characteristics, the project proposes, on the one hand, the construction of a Venetian spatiality through recourse to decisive leaps in scale, and on the other defines the relationship between the new-build, the *fondamenta* of San Basilio and the wide Giudecca Canal, through the complex design of a monumental stairway to be understood as a conclusive figure for the long promenade of the Zattere [19].

In its likeness to the staircase of the Basilica of La Salute with which it dialogues at a distance, the stairway of the project for the new IUAV seat becomes an urban sign commensurate with the wide section of the canal, a marvel to be seen from the window of a *vaporetto*, an outdoor theatre from which to admire the bulk of the Stucky Mill, the long built-up frontage of Giudecca, and Andrea Palladio’s Church of Il Redentore.

The themes of the view and the boundary between land and water were also central to two projects developed in 2002 by Alberto Ferlenga and Carles Muro as part of an international design seminar. The site studied was characterized, exactly like San Basilio, by a remarkable scenic quality and involved the system constituted by the *fondamenta* of the Santa Lucia railway station and the Church of San Simeon Piccolo on the Grand Canal [20].

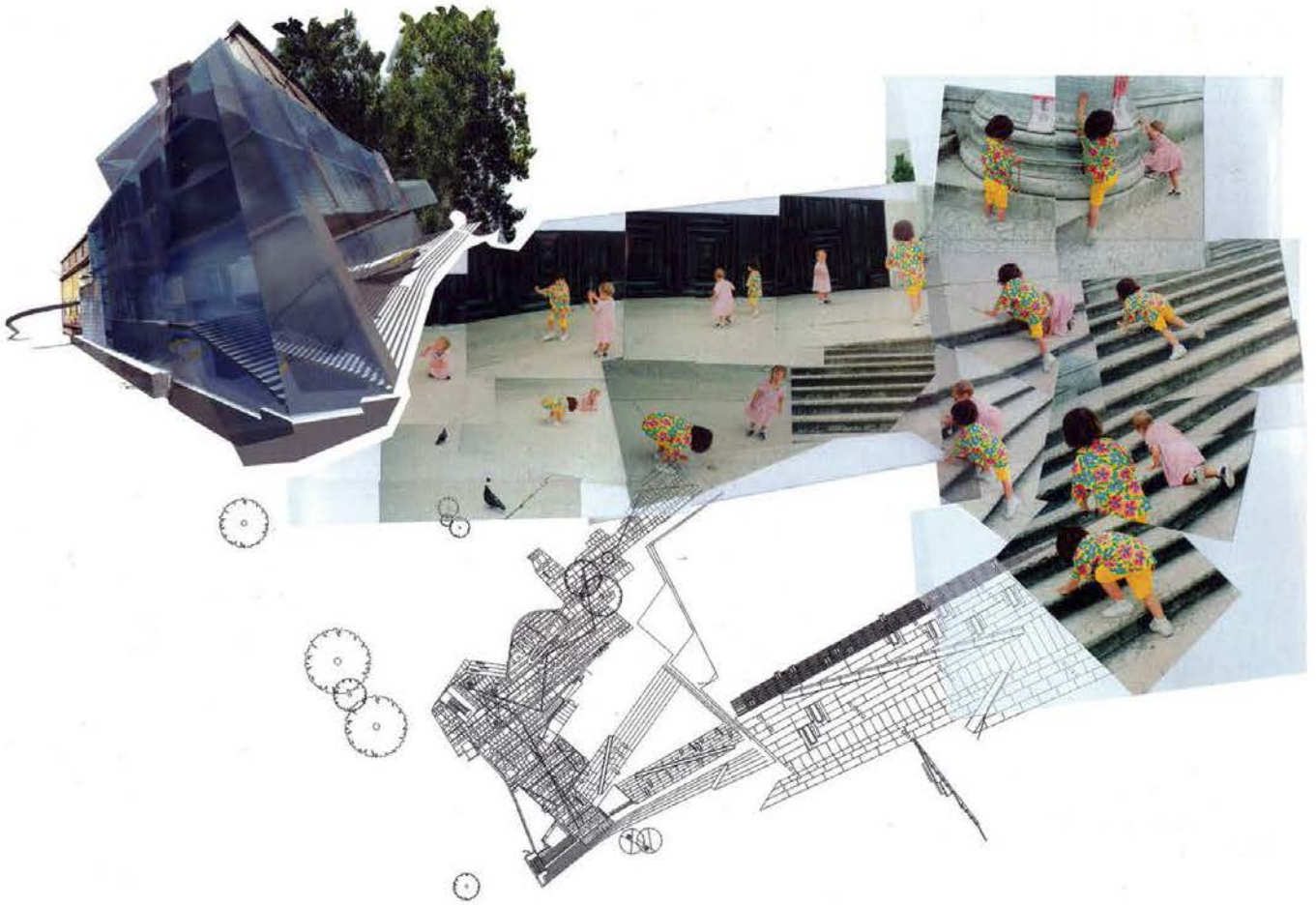
The project of the working group coordinated by Ferlenga²⁰, in a sort of reversal between theatre and the city, attributes to the existing waterfront the role of a slope arranged along the water’s edge from



[16] DOMENICO LOVISA, BY MARCO BOSCHINI (1644) FIRST DUCAL VISIT TO SANTA MARIA DELLA SALUTE. THE ENGRAVING SHOWS THAT THE ORIGINAL PAVING IN FRONT OF THE BASILICA OF LA SALUTE WAS IN PIETRACOTTA WITH A HERRINGBONE PATTERN.

[17] GLASS COLLECTED FROM SACCA SAN MATTIA, MURANO. PHOTOGRAPH BY SANDRO GRISPAN, 2018.





[18] ENRIC MIRALLES, *SAN GIORGIO, VENICE*, 1998. PHOTOMONTAGE.

17. Brodskij, Iosif, *Watermark*, Farrar, Straus and Giroux, New York 1989.

18. *Ibid.*, p. 41.

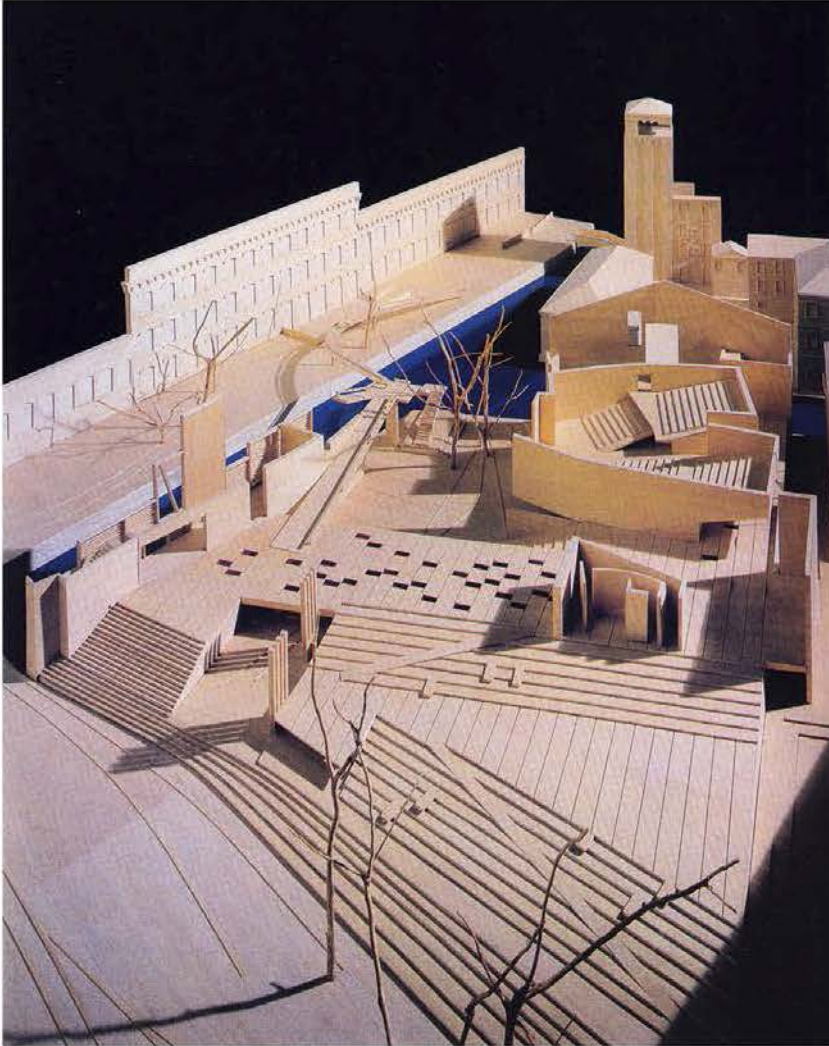
19. Folin, Marino, *L'eredità di un progetto*, in De Michelis, Marco, Scimemi, Maddalena (editor), *ETBM. Miralles Tagliabue. Architetture e Progetti*, Skira, Geneva-Milan, 2002, p. 136.

20. Ferlenga, Alberto, *La mia città, Venezia...*, in Spinelli, Mario, Marzo, Mauro (editor), *viverevenezia. Nove scuole di architettura europee per la progettazione degli spazi pubblici veneziani*, Marsilio, Venice 2003, pp. 42-47. The project group consisted of Professor A. Ferlenga, the tutors F. De Maio and C. Palazzolo, and the students T. Bacchin, R. Bartolone, A. Perugini, L. Ravagni, S. Scordo, and L. Tomassini, as reported on pages 42 and 153.

which to observe the fixed scene from the opposite side. Along the margin abuts a temporary structure in wood, intended for festivals and collective events, which seems generated by the same profile as the *fondamenta*. Like a sort of periscope useful to fathom the depths of the city, a series of engravings on the wooden surface shows particular views of the waterfront at San Simeon Piccolo, as well as selected views of the tall stylobate and the step-gabled pronaos and dome of the church by Giovanni Antonio Scalfarotto.

The group coordinated by Carles Muro²¹ operated starting from the same themes, achieving totally different project outcomes: the Spanish architect sought to redress the difference between the level of the railway tracks and that of the lower-lying *fondamenta* of Santa Lucia through the redesign of an existing staircase which, with its broken profile, introduces a new topography on the Grand Canal. Generated on the basis of a detailed analysis of the pedestrian flows and emphasized by the white lines of Istrian stone typical of the Venetian construction tradition, the profile of the new stairway takes on the role of an "urban space perception device"²² [21].

Many years earlier, at another international seminar²³, held at the IUAV and focusing on the western end of Cannaregio, Aldo Rossi had tackled the issue of the boundary between land and water in Venice. In his project, the frontage on the northern lagoon was solved



[19] EMTB, ENRIC MIRALLES AND BENEDETTA TAGLIABUE, FINAL PROJECT FOR THE NEW IUAV SEAT AT SAN BASILIO, VENICE, 1998. MODEL OF THE WHOLE.

through the inclusion, in the urban composition, of the figure of a close-knit system of small piers arranged in a comb-like manner at right angles to the waterfront, as commonly occurs along many areas of the city's margins. For a new urban frontage that was historically secondary, the project did not propose monumental forms, but simple wooden piers; poor, commonplace elements compared to the many others provided by the copious architectural glossary of the lagoon's waterfronts.

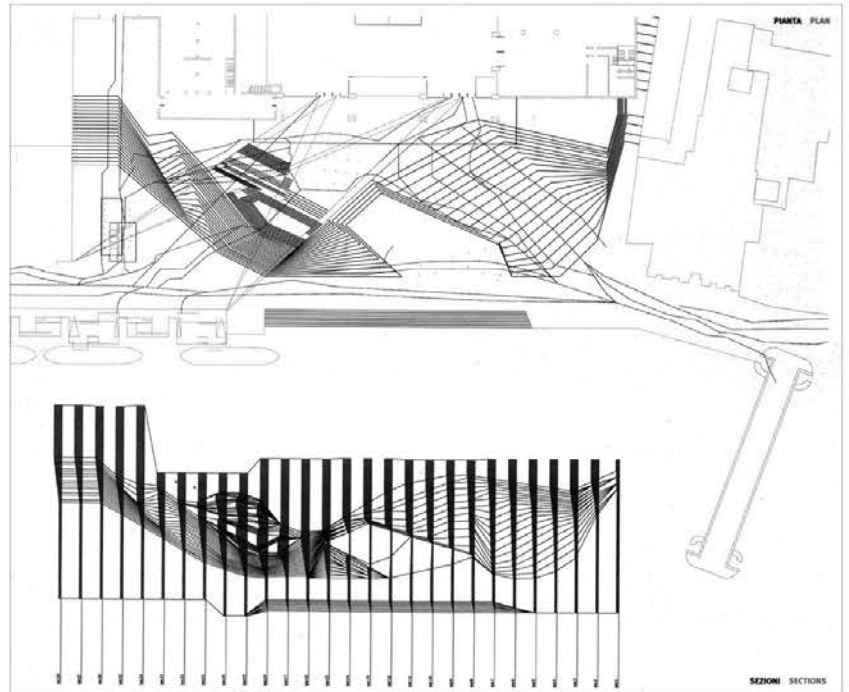
Designing a margin along the Grand Canal or on the north-western edge of Cannaregio, at the base of a historical building or along a beach at Sant'Erasmus, near a boatyard or close to the mouth of a port, entails the need to seize the specific nature of the different sites and to interpret their characteristics.

Perhaps it is no coincidence that the projects described above were developed in those areas of privileged reflection consisting of university seminars and design contests in which, also within the narrow range of indications provided by the programme, it is possible to create spaces for theoretical/compositional insights into a city and its public spaces.

[20] ALBERTO FERLENGA ET AL., PROJECT FOR THE PAVED BANK OF SANTA LUCIA, VENICE, AS PART OF THE INTERNATIONAL DESIGN WORKSHOP "VIVEREVENEZIA", IUAV, 2002. VIEW OF A WOODEN CONSTRUCTION SUSPENDED OVER THE PAVED WATERFRONT OF SANTA LUCIA.



[21] CARLES MURO ET AL., *PROJECT FOR THE PAVED BANK OF SANTA LUCIA, VENICE*, AS PART OF THE INTERNATIONAL DESIGN WORKSHOP "VIVEREVENEZIA", IUAV, 2002. PLAN AND SECTION OF THE RECONFIGURATION OF THE STAIRS TO CONNECT THE VARIOUS LEVELS OF THE RAILWAY LINES AND THE PAVED WATERFRONT OF SANTA LUCIA.



Along the edges of the built-up areas following the sinuous profile of streams and canals, close to the water's edge, in the vicinity of the constantly shifting mud flats and salt marshes, in the dense fabric between buildings and waterfront, sits the architectural project. It has been imbued with values by patiently interrogating sites, lingering over the traces of history, dialoguing with the needs of contemporary living: meaning, to cut a long story very short, the past and present intentions of the place.

The "physical" substance of the margin, made up of stones, bricks and mortar, the object of philological restoration or built *ex novo*, and that "inhabited" one used for ground-water transshipments, for work and leisure, constitute and illuminate these projects; a context in which to compose a set of heterogeneous issues, ranging from historical-environmental characteristics to functional programmes, from construction systems to the various degrees of intervention.

An interpretation of the margin not only as a technical infrastructure, but as an integral part of the context housing it, an investigation of its variable substance, never stuck on the real dimensions of the construction section of the waterfront, but extending from the nearby spaces to the most distant ones: these are the elements which can guide interventions aimed, on the one hand, at satisfying the primary task of soil containment, and on the other, at safeguarding the formal and construction richness of the waterfronts which a millennia-old tradition has handed down to us.

Proceeding by temporizing

The static operation of a margin responds to few principles, even if the particular geo-morphological conditions of the lagoon can sometimes generate technical problems requiring a more or less complex solution.

21. Muro, Carles, *Topografie veneziane*, in Spinelli, Mario, Marzo, Mauro (editor), *viverevenezia. Nove scuole di architettura europee per la progettazione degli spazi pubblici veneziani*, Marsilio, Venice 2003, pp. 49-53. The project group consisted of the teacher C. Muro, the tutor L. Ortega and the students J. Capomaggi, R. De Montard, R. Neeson, R. Schulz, and C. Vidal, as reported on pages 48 and 153.

22. *Ibid.*, P. 48.

23. Dal Co, Francesco (editor), *10 immagini per Venezia: mostra dei progetti per Cannaregio Ovest*, catalogue of the exhibition held in Venice, Napoleonic Wing, 1 April-30 April 1980, Officina, Rome 1980.

The distant vicissitudes of Sansovino's unfinished Scuola Grande della Misericordia²⁴ and the recent critical issues of the fourth bridge over the Grand Canal designed by Santiago Calatrava²⁵, should prompt us to reflect.

However, the impossibility of applying investigative tools and engineering procedures pertinent to other contexts does not mean that, in principle, the use of innovative construction techniques is inappropriate in the lagoon context; on the contrary, it is precisely in the most delicate and difficult environmental situations that scientific research should be applied in order to improve the performance and durability of the works. Contemporary materials and languages *can* therefore find a place in the lagoon, but no generalization is possible, *a priori*. We need to be fully aware of the fact that the questions raised by the construction of structures and infrastructures can never be satisfactorily answered within the mainstream of purely technical solutions but must always be associated with problems of architectural form and the relationship with the contexts.

This discourse concerns not only the consolidated city but the entire lagoon. The biggest risk which infrastructure works can encounter, including those involving the lagoon's margins, is, ultimately, the substantial similarity of every intervention. We therefore need to imagine projects in which the engineering techniques, the calculation of thrust and counter-thrust between water and land, and the study of the delicate stages of the construction works can conserve the memory of that vast repertoire of forms and construction systems for waterfronts which has come down to us.

How can we include all of this in the contemporary design of the limit? How can we collect the materials of use to its design? Will it suffice to study the morphological evolution of the site, to observe the line of the margin, to respond to its primary functions? In a historical moment when principles and models have lost the capacity to build orders on cases, it is precisely in the specific reality of sites that a project can find an opportunity for verification and control²⁶.

The waterfronts constructed by the Republic's *Proti* or anonymous builders, the relationships that the buildings of Sansovino, Palladio or Longhena establish with the canals, and the contemporary projects presented in the previous pages, do not offer indications or surefire procedures, nor do they present themselves as references that are valid for whichever situation. The response to the theme of the limit must be sought not only in the wide range of forms taken by the waterfronts over the course of the lagoon's history, but especially in the margin's openness to build relationships with the conditions suggested by the site where it lies and the historical epoch it belongs to.

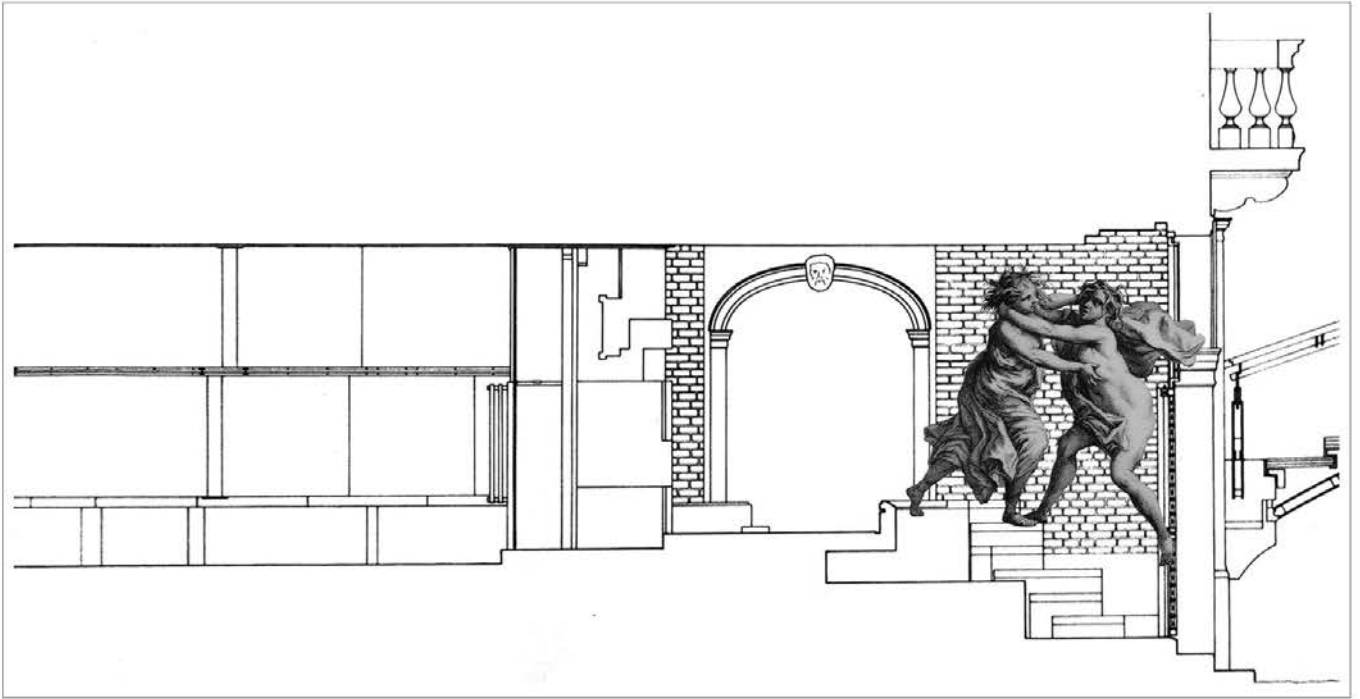
In his speech at the inauguration of the 6th edition of the Biennale of Architecture in 1996, Massimo Cacciari emphasized that fact that, after the Gothic period, the Venetians had ceased to build ducal palaces. What followed were a Venetian Renaissance and a Venetian Baroque completely different from the *Roman*, *Spanish* or *German* Renaissance and Baroque schools²⁷. In its history, Venice has "acquired all forms and styles, reinventing them"²⁸, has mounted ancient columns on Romanesque buildings, drawn on a repertoire of architectural figures belonging to distant countries, but always making them its own.



[22] CARLO SCARPA, ACCESS BRIDGE TO THE QUERINI STAMPALIA FOUNDATION, VENICE, 1961-63. PHOTOGRAPH BY SANDRO GRISPAN, 2018.

[24] THE PAVING ALONG THE MARGIN OF THE CLOSED WATERWAY OF SACCA SERENELLA, MURANO, REALIZED WITH CONCRETE MIXED WITH RESIDUE FROM THE PRODUCTION OF GLASS. PHOTOGRAPH BY IUAV STUDIES & PROJECTS, 2002.





[23] SANDRO GRISPAN, MAURO MARCH, PHOTOMONTAGE OF THE TWO FEMALE FIGURES FROM THE FRONTISPIECE OF BERNARDO TREVISAN'S *TRATTATO* SUPERIMPOSED ON A CROSS-SECTION OF THE PALAZZO QUERINI STAMPALIA CANAL PROJECT TO REARRANGE THE GROUND FLOOR BY CARLO SCARPA, 1961-63.

Therefore, there is a need —the philosopher maintained— for an architecture that can “proceed by temporizing”²⁹. It is necessary to linger over what has been done, studying it and understanding it, while moving forward.

Where there is this “temporizing”, this attention dedicated to variations, to the tiniest differences, Venice proves able to accommodate the contemporary project. Is this not the case of the small bridge of iron, brass and wood built by Carlo Scarpa in the *campiello* of Palazzo Querini Stampalia, behind the Church of Santa Maria Formosa [22]?

With respect to the projects of Miralles and Rossi in which the scope of reflection was related to the city, Carlo Scarpa’s investigation of the boundary between land and water was developed on a smaller scale and with an apparently introverted attention restricted to the building’s interiors. Indeed, both the relationship between the ground-floor level of the Querini Stampalia Foundation and the variable water level, and that between the façade, bridge, and access atrium constituted important areas for design reflection in this intervention. Among the client’s requests was that of developing solutions which would allow the use of the building’s ground-floor rooms; being set, in fact, at a particularly low level, they were frequently victims of the high peak tide phenomenon (*acqua alta*). The project became an occasion to launch, between 1961 and 1963, research into the complex relationship between the space of the *portego* and the waterway in the palace hallways. The raising of floor levels is a purely “technical” solution to the problem, as Scarpa was well aware. He also knew that the real problem to be solved lay in the compositional conflict which the new interior level would create with respect to the lines of the façade, where the floor reached the curve of the two arches overlooking the water. The “architectural” solution was once again included in the “substance” of the boundary between land

24. Fabbri, Gianni, *Dal progetto di Sansovino alle catastrofi del moderno*, in *Id.*, *La scuola Grande della Misericordia a Venezia. Storia e Progetto*, Skira, 1999, pp. 101-126.

25. See: <http://www.repubblica.it/2007/05/sezioni/cronaca/venezia-calatrava/venezia-calatrava/venezia-calatrava.html>

26. Grandinetti, Pierluigi, *Insegnare Architettura*, in “Archint. Architettura Intersezioni”, no. 5, 1997, pp. 12-15.

27. CACCIARI, Massimo, *Dai discorsi inaugurali delle VI Biennale*, in “Archint. Architettura Intersezioni”, no. 4, 1996, p. 6.

28. *Ibid.*

29. *Ibid.*

and water or, if we wish to use a metaphor, in the distance between the legs of the two female figures struggling in the frontispiece of Bernardo Trevisan's *Trattato*. Parallel to the line of the façade and aligned with the arrangement of a pre-existing door, the empty space of a tank creates a break between the new floor and the waterfront. As a hiatus between two different worlds, this space receives the peak tide, contains it, and lets it freely flow out [23].

Similarly to what would be proposed years later in his project for the Masieri Foundation, Scarpa blended the stratified signs of his own language with the substance of the margin. And let the slow rhythm of the tides enter the bowels of the building and breathe with it.

Scarpa's way of interpreting the limit between land and water is certainly very different from the approaches illustrated by some contemporary projects in the previous pages, but for a subject as complex as that of the lagoon's margins we cannot imagine anything other than differentiated design responses.

Accordingly, we put in order on our desk the cadastral maps of the Sacca Serenella, sections of 19th-century projects, and geometric surveys from the archives. We take another look at the black and white photographs that depict, together with the waterfronts, *vaporetto* stops and outdoor cafés, inhabitants and children's games, moored boats and distant horizons. We intermingle the perception analyses with the vegetation transects, the investigations into the state of deterioration of the margin with the drawing of underground network services. Lastly, we place the pieces of glass collected from Sacca San Mattia alongside images of those projects which, in Venice as in Amsterdam and Ljubljana, have been able to transform simple infrastructural elements of the margin between land and water into figures with a strong urban and landscape value. We will still lack clear-cut indications to develop a project for the boundary between land and water, but we will have useful materials to prepare it.

Therefore, before picking up a pencil, before drawing the itinerary on paper, it may be useful to once again observe these materials and imagine that they are a small, incomplete constellation to follow while *temporizing* [24]. ■

Per un progetto del limite tra terra e acqua nella laguna di Venezia

Il limite tra terra e acqua assume molteplici conformazioni nella laguna di Venezia in risposta a esigenze dettate dagli usi e dalle collocazioni. L'articolo individua alcune di tali conformazioni in diversi ambiti lagunari, in prossimità della terraferma, delle bocche di porto, lungo i rii minori o sul Canal Grande, fino ad analizzare alcune risposte date dall'architettura contemporanea a questo tema.

Parole chiave: Laguna di Venezia, Canal Grande, Murano, Torcello, limite, progetto, terra, acqua, canali, architetture senza architetti.

Towards a project for the boundary between land and water in the Venetian lagoon

The boundary between land and water assumes multiple conformations in the Venetian Lagoon as response to needs caused by uses and locations. The article identifies some of these conformations in different lagoon areas, near the mainland, the entries of the harbour, along the minor canals or the Grand Canal; finally it analyzes some responses given by contemporary architecture to this topic.

Keywords: Venetian Lagoon, Grand Canal, Murano, Torcello, boundary, project, land, water, canals, architectures without architects



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