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TOWN PLANNING REVIEW

Special issue: Reflections on COVID-19 four years on

Editorial

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Bertie Dockerill, Daniel Baldwin Hess, Alexander Lord and John Sturzaker

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Examining the long-term impacts of Covid-19 on green infrastructure:
reflections on changes in public perceptions and government action
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Law and design: Venice between emergencies and planning
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Chain reactions: can experimental urbanism provide the formula for productive, place-based, change?
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Town Planning Review

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Submission of papers

Submission to TPR is via Manuscript Central at <http://mc.manuscriptcentral.com/lup-tpr>.

TPR welcomes both full-length papers and review articles contributing to the advancement of the research field of town and regional planning in highly developed economies and in emerging industrial states, particularly those relating to the areas of • spatial planning • regional analysis and development • regeneration and renewal • local and regional economic development • community planning and participation • social cohesion and spatial inequalities • housing area planning and development • urban design and conservation • environmental planning and sustainable development • transport and infrastructure planning • rural planning and development • governance and institutions.

Full-length **research papers**, which may include scholarly, empirical and theoretical contributions, should be a maximum of 7–9000 words long (including notes and references). The *Review* welcomes a diversity of research approaches being included in submitted papers, including theory and analysis, methods and techniques, history and law, and policy and practice.

Review articles, which provide an analytical overview of a focused topic in the research field, should be a maximum of 2,500–3,000 words long with up to 80–100 references. Review articles may be either submitted upon invitation or proposed direct to the editors. To submit a proposal, authors are invited to send the editors a title, an abstract and statements of their experience in the field, the scientific relevance of the topic and the need for coverage.

Both types of paper will be subject to double-blind peer review.

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Thematic Issues

The editors also welcome suggestions for (occasional) guest-edited thematic issues comprising appropriately refereed and edited papers on a particular subject and which may be drawn from conference tracks, roundtables and workshops or may be specially commissioned.

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Contents

Special issue: Reflections on COVID-19 four years on

Editorial

- Longer-term perspectives on the COVID-19 pandemic
and its implications for urban planning
*Bertie Dockerill, Daniel Baldwin Hess, Alexander Lord and
John Sturzaker* 339

Viewpoints

- The rural housing market after the COVID-19 pandemic
Iqbal Hamiduddin and Nick Gallent 343
- Reflexive urbanism framework: a new approach for
understanding post-COVID-19 urbanism
Efrat Eizenberg and Yosef Jabareen 355
- Examining the long-term impacts of Covid-19 on
green infrastructure: reflections on changes in public
perceptions and government action
Ian Mell 363
- Planning, adaptive reuse, housing quality and health in
a post-pandemic England
Ben Clifford and Manuela Madeddu 379

Reflections on the post-pandemic future of
shrinking cities
Maxwell Hartt, Sharmistha Bagchi-Sen and Justin B. Hollander 391

Commentaries

Governing post-pandemic territories: in search of
non-standard territorial governance approaches
Giancarlo Cotella and Elisabetta Vitale Brovarone 401

Law and design: Venice between emergencies
and planning
Ludovico Centis 417

Chain reactions: can experimental urbanism provide the
formula for productive, place-based, change?
Danny Oswell and Georgiana Varna 435

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Ludovico Centis

Commentary

Law and design: Venice between emergencies and planning

In the millenary history of Venice a set of emergencies – environmental, military, sanitary – alternated with an endless activity of redesign and management of its territory. Looking back at this legacy means to engage with planning as well as with a restless legislative and judiciary activity that codified and supported both the implementation of massive projects as well as routine operations. With this history, the more contemporary efforts to safeguard Venice and its lagoon are a set of designs and techniques also made possible thanks to special legislation.

Keywords: Venice, law, planning, emergency, management

Introduction

Two main subjects of discussion filled the Venetian local newspapers until early autumn 2019: overtourism and the seemingly endless cyclopic works to complete the MoSE (modulo sperimentale elettromeccanico), the system of mobile gates that would have protected Venice from increasingly recurring high waters.

Venice might indeed be considered as the world capital of mass tourism. In fact, the historic centre is by and large economically dependent on it. A very high ratio of touristic presences¹ compared to residents – the statistics and research centre of Venice municipality communicated a value of 264:1 in 2019, 75:1 in 2020, 121:1 in 2021, 220:1 in 2022 (Città di Venezia, 2023) and it is rapidly getting back to pre-pandemic numbers for 2023² – generates a whole set of daily consequence such as queues and congestion in urban spaces and on public transport, an increase in costs for access to primary services, and a scarcity of accessible housing for locals and also for students.

¹ The number of nights spent by tourists in accommodation establishments.

² This number is a ratio and is given by the number of tourist presences over a year divided by the number of residents. For instance, if a tourist spends five nights in Venice it counts as one arrival and five presences. This therefore is a way to calculate the pressure tourists exert on residents, with a higher value corresponding to greater pressure.

These dynamics, which affect both the quality of life of residents and the visitors' experience are barely managed by the governing institutions, and find their origin well back in time. In fact, if the urban fabric remained apparently untouched over the decades, following the Second World War and with a strong increase of tourism in the new millennium, its use has been inexorably changed with specialisation of some areas, following the emergence of main visitors' itineraries and hotspots (Centis and Fabian, 2022).

The recurrent and devastating high waters of November 2019 and the Covid-19 pandemic that hit the globe in 2020 even more brutally exposed these dynamics. All the economic activities that rely on tourism – hotels, restaurants, souvenir shops, guest houses, Airbnb rentals, tourist guides, gondoliers and so on – were completely paralysed. Also, ACTV, the municipal company for public transport, considerably cut their services, in particular the *vaporetti* – the Venetian public waterbuses – that are largely filled by tourist crowds (Centis, 2021). A heterogeneous group of people – politicians, scholars, entrepreneurs, common citizens – optimistically stated, on a diverse set of occasions from local talk shows to scientific conferences forced to be held online, that the pandemic-related crisis could become the opportunity to radically reshape an economic model based on an extractive approach to tourism that just a few months before seemed to find no alternatives. The local authorities, the association of landowners and the rectors of the Venetian universities made an agreement to rent the flats left empty by tourists to students (Città di Venezia, 2020). The gradual return to the status quo, first in 2021 and then the 'restoration' completed between 2022 and 2023, exposed the lack of any kind of landlords' wide consensus towards these pandemic-time proposals and experiences. Tourists flock again to Venice, the *vaporetti* are often overcrowded and locals and students struggle again to find a flat to rent at a reasonable price. In the meantime, in the hinterland towns and peripheral islands of the lagoon, the loss of community services seems to find no end. Recently in the island of Burano – which is indeed a popular tourist destination – the last newsstand has ceased its activity and it seems that no one intends to operate it anymore.

This 'restoration' of overtourism found its basis not only in the decrease and gradual disappearance of the effects of the global pandemic and in the will of the economic actors to quickly regain the income lost between late 2019 and 2022, but also in the fact that the MoSE was first operated in October 2020. This epochal fact enabled – at least for the coming decades – the end of severe high waters in Venice, also again making profitable in commercial terms the ground floors of the buildings that became increasingly affected by recurrent floods up to the peak of late 2019. If the Covid-19 pandemic seems to have passed as a tornado – leaving a heavy toll in terms of human lives and harsh economic conditions for a few years – and then disappeared, the MoSE and more generally the maintenance of the fragile hydrographic

balance of this unique territory seem to have remained as the sole key elements that will decisively influence the destiny of Venice and its lagoon over the coming years.

A year in titles

In October 2019, at the start of a research project exploring possible scenarios for the evolution of the Venetian metropolitan area, I asked the owner of a newsstand to put aside, for 12 months, all the posters that the local newspapers – namely *La Nuova*, *Il Gazzettino* and *Il Corriere del Veneto* – produced daily to attract the readers' attention. My intention was to intertwine fieldwork, archival research and the study of primary sources with this more informal yet very telling stream of information. Over the months I realised that I put together this 'collection' over a very significant year in the millennial history of the city. A selection of the titles of the posters in chronological order from October 2019 to October 2020 is indeed very informative:

Exasperated residents: 'Besieged by tourists in our city'
 No large (cruise)ships committee, new protests
 Cruise ship against Riva 7 Martiri, no crime recognised 'Unpredictable weather event'
 The wave motion forces the closure of other landing piers
 The return of the baby gang, tourists beaten in Campo Santa Margherita
 Venice submerged by high tide at 187 cm
 Two deaths, damage and anger: Venice on its knees
 Schools reopen: the fear is over
 The high water could have risen up to 240 cm
 High water and beaches: damage for one and a half billion euros
 The engineers: 'This is why the MoSE cannot be used'
 High water: refunds will arrive after Easter
 High water returns and San Marco is flooded again
 The government allocates funds to finish the MoSE and for the lagoon maintenance
 High water and river floods, Christmas warning
 Record sequence of high waters in 45 days, 14 times above 110 cm
 One in three Venetians is over 65, a national record
 High water, website spreads shock prediction which triggers psychosis and raises controversies
 High tide 'empties' Venice, bookings halved
 Social housing priority for Venetians, here are the rules of the municipality
 Venice fills up with tourists again
 Virus alert at the airport for a Chinese child with a fever / Tourism, war over smart locks and self-check-in, controls on rentals

The scientist: 'The lagoon must be separated from the sea' / Chinese virus puts tourism at risk
High water and coronavirus, Carnival with the collapse of tourists
Coronavirus, two infections in Venice and the Carnival is stopped
Coronavirus crisis: 8 out of 10 hotels facing closure
Fight against the virus: everything closes from today
Another 5 infected by the virus in Venice: now there are 10
Over a thousand infections in Venice
Coronavirus, ACTV (Venetian public transport company) travel cuts, inconveniences and protests
Traders, entrepreneurs and mayors in revolt / Eight dead in the Venetian area, another black day
Shops and hotels for sale on the internet due to the tourism crisis
ACTV, tension rises but there is a plan to save services and jobs / Municipality-landlords: houses free from tourists, agreement in favour of residents
Tourism, 50 thousand seasonal workers without work / Eight victims in one day, infections and recoveries are also increasing
Commuter vaporetto and hospitals by reservation only / MoSE ready to rise when tide reaches 110 cm
Tourism: risk of 100,000 thousand people unemployed; Aperitifs, less chaos but the crowds are on board the vaporetto
ACTV, more buses and vaporetto, all workers will return from June / Red-light house open even during lockdown
Buses, trains and vaporetto at full capacity, approved the popular festivals
The ULSS (Local Socio-Health Unit) is looking for homes and hotels for the infected to be placed in isolation / An 'intimate' Redentore celebration for 15 thousand people
Lost 13 million tourists and 3 billion euros
Clandestine night races with small boats: stopped by the police / Two MoSE barriers raised, test ok
Venice scourged. Water bomb and hail
Maxi refunds to those who rent houses to tourists
Sant'Elena: luxury accommodation in the former shipyard
Redentore, Covid-proof spaced tables
Redentore: the municipality cancels the fireworks / The 78 floodgates of the MoSE are raised, ceremony with Prime Minister Conte
Thousands of students line up for tourists' homes
The prime minister: 'MoSE in action in autumn' but the timing remains unknown / Risk of crowding: the prefect cancels the ACTV strike
Brugnaro: new city council after the re-election / Pellestrina, falls from the boat and dies, the son: 'It's fault of the wave motion'

Brugnaro: 'Gates and codes to enter Venice' / The Covid crisis: one hotel in three still remains closed
 High water, the islands will be allowed to raise the houses
 School: 22 positives out of 1850 tests, 'Dining out in a pizzeria is more at risk' /
 Works to protect the St Mark's Basilica postponed to November
 High water alert, the anger of hoteliers / Barene and Ottagono for sale,
 Superintendency under accusation
 High water emergency, the order during the night: 'The MoSE should be raised'
 The MoSE has been raised: Venice separated from the sea for the first time

(Selection of titles produced by the author and translated from Italian language of posters hung in newsstands of *La Nuova*, *Il Gazzettino* and *Il Corriere del Veneto* newspapers in chronological order from October 2019 to October 2020).

Looking back at these titles, it is significant how the first and the last – 'Exasperated residents: "Besieged by tourists in our city"' and 'The MoSE has been raised: Venice separated from the sea for the first time' – stand out as the only ones that do still matter, that still permeate the daily lives and public debate. On the other hand, the two emergencies – the sequence of high waters of autumn 2019 and later the Covid-19 pandemic – and all the priorities and urgencies they imposed, seem to have been relegated to a quite distant past. While coronavirus prevention has now become part of a global annual routine, like the flu vaccines injected in particular to the most fragile people every autumn, there is another local routine to which Venetians got rapidly accustomed: the raising of the MoSE in the event of high waters above 130 cm of average sea level. If this is a considerable relief for residents and economic operators and has also acted as a boost for ground-floor property values, on the other hand it is producing the potentially dangerous consequence of making the public increasingly unaware of the climate change challenges that the floods caused by high waters prior to the operation of the MoSE recurrently brought under the spotlight. The sheer existence of Venice and its lagoon is in fact mainly dependent on centuries of daily maintenance works punctuated by episodes of radical territorial reconfiguration that responded to the goal of the conservation of a fragile equilibrium – a prolonged effort over time. It is worth reconstructing the reasons, methods and techniques, and the results of which might prove tremendously dangerous to take for granted.

A stratified flatness

The landscape of Venice and its lagoon is one that has both a geological and archaeological 'thickness' (Ammerman, 2005). A series of studies and excavations developed since the mid-twentieth century (Leonardi, 1960; Canal, 1995; Dorigo, 1995; Canal, 2015) has provided an ever-increasing amount of proof of the centuriation and

modification of this territory carried out in Roman time, well before the citizens of Altino fled the city following the invasion of the army led by Attila in the fifth century.

As Concina has reminded addressing its morphological reshaping, in the Venetian context

the practices of reconnaissance of the bearing capacity of the soils and the techniques of seabed consolidation are taken up from the late Roman world methods and units of soil measurement. In a rural, lagoon and port landscape of valleys, marshes, sandbanks and lagoon lakes, were realised channels and embankments while the ground was consolidated and filled up. The pile-dwelling foundation technique also has the same origin. (Concina, 2000, 17)

Concurrently with the construction of new buildings in bricks and stone, the first edges in stone, not wood, were built. The first paving of public spaces with bricks dates to 1266, followed by increasingly ordinary maintenance and the normalisation of wider use materials during the fourteenth century. In the sixteenth century palisades and embankments were still utilised to shore up and protect the reclaimed land, and it is not by chance that such prominent figures as Palladio and Scamozzi also engaged with topics such as ground consolidation. It was in the same period that new tools to dredge the canals were invented – canal dredging had been a pressing priority since the thirteenth century (Zucchetta, 1985, 40) – while stones such as *Pietra di Laspida* and *Pietra d'Istria* were increasingly used before the introduction in 1676 of *masegni*, blocks of trachite from the Euganean Hills, that still today pave most pedestrian spaces.

Since late medieval times, not only in Venice but in all the main European cities, there were administrative departments and technicians responsible for and in charge of defending the public space from the potentially harmful actions of private individuals. At the same time, the use of and the coexistence in public space was defined by a large number of habits and constraints. Yet in Venice it is rather unique how the role and presence of water played a key role in the definition of the methods related to and the knowledge about urban maintenance interventions. Water also strongly influenced the definition of new tools and operating procedures, with public officials watching over urban margin delimitation, shore maintenance and most relevantly, lagoon protection. Not only the edges of the city, but also the elements that structure it (canals, *calli*, *campi*, bridges) and provide fundamental drinking water supply (wells and cisterns) belonged to the sphere of competence of the same public officials in charge of maintaining and sometimes updating the functional infrastructure of the city. A strategic asset as the Arsenal – the state-owned complex of shipyards and armories devoted to maintaining the Venetian naval power – was not only a place of development and subsequent diffusion of techniques at the service of the navy and shipbuilding, but also of the city and its building industry at large (Brucculeri, 2006).

At least until 1797, when the *Serenissima* surrendered to Napoleon, every intervention – imagined or accomplished – on the morphology of the Venice lagoon should therefore be related to the role of techniques in restoring or modifying the ‘naturalness’ that characterised the lagoon, as Ciriaco pointed out (Ciriaco, 2006, 101). It is around this tension with the constructed myth of its origins that different positions and visions about the territorial and economic development of the Venice Republic should be considered. Up to the fourteenth century, the Venetian model of urban expansion was open, with intertwining built and lagoon spaces, defined by cyclic aggregations and by an edge of the city still dynamic, potentially extensible, punctuated by transitional, unstable landscapes. Until the mid-sixteenth century the push towards a physical expansion of the city was approached by the Venetian government with a conservative attitude, attentive towards the defence of the environment and possible modification of the hydraulic regime but lacking a comprehensive strategy and with significant discontinuity in the scale of interventions.

It is between 1530 and 1550 that this flexible, dynamic approach started to be questioned and the idea to plan the fixity and perpetuity of the relationship between built and water surfaces gained momentum. The most relevant episode responding to this trend and to the need of control over the built space and of prefiguration through design is the plan drafted by Cristoforo Sabbadino (1489–1560) – possibly the most notorious *proto* of the *Magistrato alle Acque*, the Venetian Magistrate to the Waters – in 1557. The *proto* drew up an overall programme in order to register in successive stages a series of partial operations for the expansion and regularisation of the edge of the city towards the lagoon.

It is also in exactly the same period, in the sixteenth century, that the Venice Republic was becoming less and less a maritime one and was turning its attention to the mainland, in search of a new political–economic balance (Ciriaco, 1980, 492). This shift suggested the government of the *Serenissima* should proceed with the drainage and remediation works of swampy areas to increase agricultural production and for the definition of a new network of channels. Alvise Cornaro (1484–1566) engaged with an effort to produce a project for the hydraulic rearrangement of the lagoon based on an organic and convincing theory. His resulting schemes translated in an indirect pronouncement in favour of ideals of economic and political resettlement of the *Dominante* which shifted the centre of gravity of interests from the lagoon to the mainland (Escobar, 1980, 117). Sabbadino saw the lagoon as the most important defensive wall for Venice, the safer the less visually ‘finished’ (Tafari, 1980, 32). On the other hand, Cornaro proposed to surround the whole lagoon through a clear edge defined by an embankment that would separate land and water, keeping active just one of the many mouths that at the time put in communication the lagoon with the Adriatic Sea.

While Sabbadino’s proposal to deviate the main rivers such as the Brenta and Sile from the lagoon to preserve its existence was actually carried out through massive



Figure 1 Plan drafted by Cristoforo Sabbadino in 1557 for the expansion of the Venetian urban edges
 Source: Archivio di Stato di Venezia, Savi ed Esecutori alle Acque

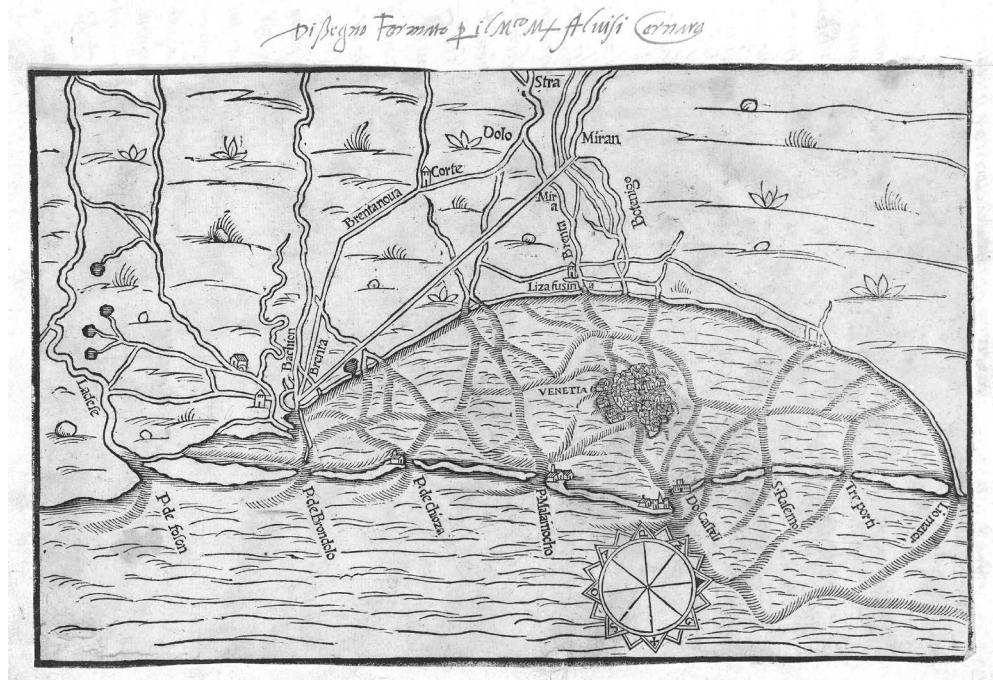


Figure 2 Drawing by Alvisio Cornaro produced in the mid-sixteenth century depicting an embankment that clearly separates the lagoon from the mainland
Source: Archivio di Stato di Venezia, Savi ed Esecutori alle Acque

works between the seventeenth and eighteenth centuries, the process of normalisation foresaw by Cornaro was indeed halted for several centuries and saw its first milestone, in a completely different form, only in 1846, with the inauguration of the railway bridge realised under the Austrian rule.

The challenging lagoon environment and the peculiar means of transportation relying on water have also greatly influenced the formation and transfer of a body of knowledge and duties related to these strategic assets, the preservation of which was among the final goal of the activities of the public offices involved both in the granting of building permits and the maintenance of public spaces. Regarding the latter, and in particular *calli* and *campi*, qualities such as durability, comfort and regularity informed legal and administrative rules as well as the daily practices of the judiciary bodies (Calabi, 2006, 3). Yet, it is only from the eighteenth century that the magistrates of the Republic engaged with the ordinary and extraordinary maintenance of the city as part of a general plan, going beyond simply chasing the initiatives of private individuals in the lagoon. The climax of this process was reached around the 1790s,

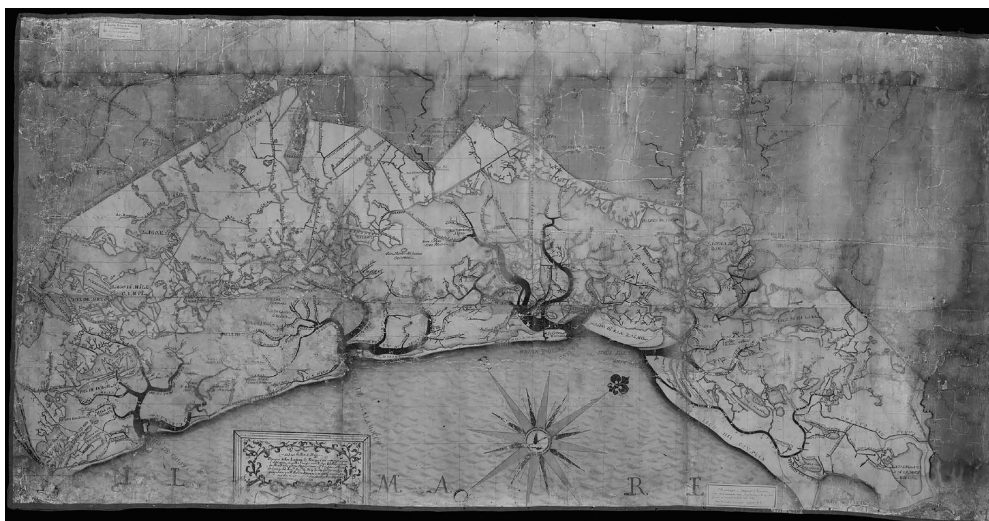


Figure 3 Map produced in the mid-eighteenth century by an anonymous author depicting the lagoon and the *conterminazione lagunare* – the judiciary and administrative boundary line of the area under the jurisdiction of the Magistrate to the Waters – towards the mainland
Source: Archivio di Stato di Venezia, Savi ed Esecutori alle Acque

with the proclamation of the *conterminazione lagunare* and the placement of the markers that defined – and still largely define – it (Caniato, 1991).

In the nineteenth century both the Austrian and Italian governments adapted the morphology and increased the depth of the inlets, meeting the up-to-date navigation needs through the construction of breakwaters. This process started first at Malamocco, under the guidance of engineer Pietro Paleocapa, between 1835 and 1872, and then continued with the unifying between 1882 and 1892 in a single move of the mouths of San Nicolò, Sant’Erasmus and Treporti, and finalised with the intervention in the Chioggia mouth between 1912 and 1932. The inauguration in 1846 of the translagoon railway bridge interrupted the millenary insularity of Venice, followed then in 1931 by the construction of an automobile bridge completed shortly after under the guidance of engineer Eugenio Miozzi. The construction of the Santa Lucia railway station ignited the displacement of the port from the San Marco Basin to the Marittima between 1869 and 1880 in order to connect the platforms to the trains by bringing them closer.

Efforts were carried out not only in the historic centre and in the lagoon but also on the mainland. A new set of land reclamations, following the ones carried out in previous centuries by the Venice Republic, was initiated. In 1920 work had begun for the creation of the first industrial zone – the initial core of what today is known

as Porto Marghera – at the Bottenighi, then expanded and followed by the development of a second industrial zone. In 1924, 2,300 hectares of lagoon were filled in for agricultural use. To service this fast-growing industrial area between 1920 and 1939, the Vittorio Emanuele Canal was excavated, followed by the Malamocco-Marghera Canal – the so-called *Canale dei Petroli* – between 1961 and 1969. The material resulting from the excavation of the latter was used to create the *Casse di Colmata* – sediment tanks – which were intended to accommodate the third industrial zone, which was never realised following the oil crisis of 1973. Not only industry and agriculture but also tourism played a relevant role in this land reclamation process, with a large salt marsh area filled in on the edge of the lagoon after 1960 to build the Marco Polo International Airport in Tessera. Lastly, the historic subtle equilibrium between the lagoon protection and pisciculture was broken when embankments with fixed structures enclosed vast areas of the lagoon edge to transform them into fishing valleys, sextupling their surface from 1,600 to over 10,000 hectares.

A highly regulated territory

The millenary history of Venice teaches how there is no effective maintenance without a continuous legislative and judiciary activity that codifies and supports its routine management and implementation. In addition to this legacy, the more contemporary efforts to safeguard Venice and its lagoon are a set of designs and techniques made possible thanks also to – or in spite of, some would claim – a special legislation. After the flood of 1966, the political and social debate that followed was often harsh, centred on a diverse set of issues that affected not only the centre but the whole metropolitan area: the depopulation of the historic city; the excavation of industrial canals and the tampering interventions that affected the lagoon; the lack of maintenance of the sea defence works – the notorious *murazzi* erected in the eighteenth century in *Pietra d'Istria* blocks and pozzolana cement following Bernardino Zendrini's design – and of the banks of the increasingly abandoned islands. All of this led to the widespread belief that there was a need for specific and dedicated laws and interventions for the environmental and socio-economic protection of the city at large.

Yet, ahead of the 1966 flood had been already promulgated on 5 March 1963 the Law '*Nuove norme relative alle lagune di Venezia e Marano*' ('New regulations relating to the lagoons of Venice and Marano'). With this law the Italian Republic sanctioned the need for comprehensive protection of the lagoon environment through the Magistrate to the Waters, the delegated body of the then Ministry of Public Works responsible for supervising and maintaining the entire lagoon and its regime. This law foresaw interventions to regulate discharges into the lagoon, to counteract water pollution and also reaffirm the physical unity of the lagoon system, defined at the beginning of Article 1 as a 'state-owned maritime basin of brackish water'. The law provided, for the first

time after the Second World War, a set of prescriptions that resulted from a systematic approach; an aspect that was also taken up by the subsequent special laws. The Special Law n.171 '*Interventi per la salvaguardia di Venezia*' ('Interventions for the protection of Venice') of 1973 established that the city is of pre-eminent national interest and gave the state authority on issues such as the safeguarding of the environment, regulation of watercourses, protection of the hydraulic and hydrogeological equilibrium, reduction and regulation of tide levels, coastal defence works and pollution protection. With a delay of only two years, on 27 March 1975, the council of ministers approved the government guidelines, '*Indirizzi per il piano comprensoriale di Venezia e del suo entroterra, opere eseguibili indipendentemente dal piano comprensoriale*' ('Guidelines for the district plan of Venice and its hinterland, works that can be carried out independently of the district plan'). The 1984 Special Law '*Nuovi interventi per la salvaguardia di Venezia*' ('New interventions for the protection of Venice') assigned the state the role of designing, experimenting and executing works related to the re-establishment of the hydrogeological equilibrium of the lagoon, the arrest and inversion of the process of degradation, the protection of the city's urban islands and settlements from high tides, with the possibility of operating at the inlets through interventions that had the characteristics of 'experimentability, reversibility and gradualness', safeguarding the 'unitary nature' of the lagoon. The notion of 'unitary nature' was then translated into a 'unitary concession' established through successive agreements with the Magistrate to the Waters (Ministero dei Lavori Pubblici, 1991). In order to proceed with the design and execution of the works, an agreement was signed with the Consorzio Venezia Nuova, composed of 26 companies that demonstrated expertise in the sector of large hydraulic and building engineering works. Along with this agreement was established a new political structure called the Interministerial Committee for Venice –informally nicknamed '*Comitatone*'– with the Magistrate to the Waters performing secretarial functions. Given the high number of participating bodies, the authority of the Magistrate was weakened. This implied a downgrading of its centuries-old role of planning-operational body one to a merely bureaucratic-administrative one. Following this legislation, in 1989 the Consorzio Venezia Nuova presented the section '*Riequilibrio e ambiente*' ('Rebalancing and the environment') as part of the '*Progetto preliminare di massima delle opere alle bocche*' ('Preliminary outline project of the works at the mouths'). This made explicit how the approach to the project favoured a hydraulic vision over a more comprehensive environmental one.

The third Special Law of 1992 '*Interventi per la salvaguardia di Venezia e della sua laguna*' ('Interventions for the protection of Venice and its lagoon') indicated to obtain the opinion of the Veneto region and Venice and Chioggia municipalities in relation to the safeguarding of the lagoon, and to additionally adjust and reinforce the long breakwaters at the three lagoon inlets, halt the deterioration and restore the lagoon morphology, provide for built areas local defences from high water as well as coastal

defences, and limit the number of petrol tankers crossing the lagoon.

Law no. 537 of 1993, issued only one year after the 1992 Special Law, provided for the creation of an agency for Venice. The agency – a joint-stock company with the majority participation of the state and local institutions – was supposed to overlook the coordination, planning and control of the interventions, with the fundamental goal to distinguish those who designed the works from those who had later to execute them. This agency never became operational, paving the way to the MoSE corruption scandal of 2014 that led to the dissolution of the multi-centenary institution, the Magistrate to the Waters.

Law No. 206 of 31 May 1995 ‘Interventi urgenti per il risanamento e l’adeguamento dei sistemi di smaltimento delle acque usate e degli impianti igienico-sanitari dei centri storici e nelle isole di Venezia e di Chioggia’ (‘Urgent interventions for the rehabilitation and adaptation of waste water disposal systems and sanitation systems in historic centres and on the islands of Venice and Chioggia’) was promulgated with a double goal, i.e. to respond to an ever-increasing social discontent and to comply with European procurement regulations that pulled into question the unitary concession. Yet, the Consorzio Venezia Nuova was able to remain the holder of the majority of the safeguard interventions falling under state jurisdiction in the Venice lagoon, achieving maintenance of the status quo.

Around a year before the flood of November 2019, the bill n.1428 ‘*Modifiche e integrazioni alla legislazione speciale per la salvaguardia di Venezia e della sua laguna*’ (‘Amendments and additions to the special legislation for the protection of Venice and its lagoon’) was presented in the Italian parliament. The intent behind the bill was to recognise in a federalist and metropolitan framework the specialty of Venice, assigning the Municipality of Venice a greater autonomy in financial and governmental terms. The bill had the ambition of addressing a wide range of pressing issues, from the fight against depopulation of the city to water traffic, the future of the port, the environmental reclamation of Porto Marghera, the management of the MoSE, and the establishment of a study centre on climate change.

Finally, article 95 of the so-called August Decree, approved in October 2020, defines the establishment of an Authority for the Venice lagoon which, in the intention of the legislator, will inherit the competences of the former Magistrate to the Waters – namely the safeguarding of the hydraulic regime of the lagoon – as well as carry out ordinary management and maintenance activities of the MoSE.

All of the above laws and bills have indeed brought a major outcome, i.e. the first successful operativity of the MoSE in October 2020, with its completion seemingly imminent. Yet they have also been instrumental in carrying out less controversial and more ordinary activities such as the ones coordinated by Insula S.p.A., established in 1997 as a consequence of the third Special Law for Venice. The company, whose founding partners were the Municipality of Venice and the utilities managers,

responded to the will and need to turn from episodic to systematic planning of maintenance interventions of the city, addressing issues such as technical standards, coordination during the construction phase and integration of financial resources. For over two decades Insula has carried out the maintenance of the city in the wider sense, from public housing to urban mobility infrastructure and underground services. Throughout Venice and the islands, Insula has restored derelict social housing, dredged canals, reorganised underground utilities and sewage system and where possible raised the level of the *fondamenta* to prevent recurrent floodings. In 2007 Insula became an entirely public company, turning into the operational arm of the Municipality of Venice, and since 2021 has assigned the public works branch to Veritas S.p.A., focusing since then on the maintenance and management of public housing.

An involuntary monument

Laundry hung out to dry, a *Pietra d'Istria* stone column with a Corinthian capital, tiles stacked neatly awaiting a possible check of the roof, peeling plaster that reveals large portions of the brick wall – in many respects the secondary courtyard of Ca' Pesaro, Baldassarre Longhena's important palace on the Grand Canal, today hosting the International Gallery of Modern Art, is a generic secluded Venetian courtyard. What makes it unique is the presence at its centre of a mysterious artefact: a cube of smooth reinforced concrete of approximately one metre each side, open on the top and punctuated on each of the four sides by 14 polished steel rods arranged regularly in four alternating rows which pop-out half a span from the surface. Inside the cube there are two layers of bricks arranged neatly to form an ordered geometry and what appears to be a 10 cm diameter water drain made up of two curves of white and grey PVC. A thin layer of moss and some spontaneous sprouts complete the internal scene, while on the outside the cube is surrounded respectively first by a veil of water – probably a legacy of the rain of the previous days – and then by a sober paving system with slabs and drains in *Pietra d'Istria* stone and red Verona marble.

The mysterious artefact is actually a fountain and represents one of the clearest signs of the restoration of the International Gallery of Modern Art conducted by architect Boris Podrecca between 1992 and 2002. As often happens in Italy, the fountain seems to have been actually put into operation only in the first period following the reopening of the gallery and then fell into oblivion. This may be also related to the fact that access to the courtyard where the fountain is located happens through rooms on the ground floor which have only recently been reopened to the public after several years of closure. Yet, it still has a powerful presence.

The precision and hardness of the spiky cube recall the great engineering works, the last of which was the MoSE and its collateral interventions, which have remodelled the lagoon and the neighbouring territories over the centuries. The neatly arranged



Figure 4 The fountain designed by architect Boris Podrecca during the restoration of the International Gallery of Modern Art Ca' Pesaro conducted between 1992 and 2002

Source: picture by the author

bricks evoke the first paved surfaces of Venetian public spaces in the Middle Ages, of which some traces can still be found in the city. The PVC pipes are the same ones that have now been installed in every building for decades to replace the previous brick or metal drains, while the positioning of the fountain and the design of the water recovery system on the ground evoke the refined water collection system of rainwater through cisterns which for centuries supplied drinking water to Venice, before the advent of the aqueduct, inaugurated only in 1884. Indeed, today the fountain of Podrecca seems to fulfil an unforeseen function, that of an involuntary monument – *ungewollte* following Alois Riegl's categorisation (Riegl, 1903, 6) – to the endless reshaping and maintenance of Venice and its lagoon.

References

- AMMERMAN, A. J. (2005), 'The third dimension in Venice', in C. Fletcher and T. Spencer (eds), *Flooding and Environmental Challenges for Venice and Its Lagoon: State of Knowledge*, Cambridge, Cambridge University Press, 107–16.
- BRUCCULERI, A. (2006), 'Controllo delle pratiche e uso dei saperi: la "Casa de l'Arsenal" e la manutenzione dello spazio urbano tra cinque e seicento', in S. Zaggia (ed.), *Fare La Città: Salvaguardia e Manutenzione Urbana a Venezia in Età Moderna*, Milano, Paravia / Bruno Mondadori Editore, 97–126.
- CALABI, D. (2006), 'Introduzione. "Far la città": controllo e manutenzione del suolo pubblico a Venezia in età Moderna', in S. Zaggia (ed.), *Fare La Città: Salvaguardia e Manutenzione Urbana a Venezia in Età Moderna*, Milano, Paravia / Bruno Mondadori Editore, 1–12.
- CANAL, E. (1995), 'Le Venezie sommerse: quarant'anni di archeologia lagunare', in G. Caniato, E. Turri and M. Zanetti (eds), *La Laguna Di Venezia*, Verona, Cierre Edizioni, 193–224.
- CANAL, E. (2015), *Archeologia Della Laguna Di Venezia 1960–2010*, Verona, Cierre Edizioni.
- CANIATO, G. (1991), 'La conterminazione della laguna di Venezia', in E. Armani, G. Caniato and R. Gianola (eds), *I Cento Cippi di Conterminazione Lagunare*, Venezia, Istituto Veneto di Scienze, Lettere ed Arti, 11–52.
- CENTIS, L. (2021), 'Spies, viruses and vaporetti: how the pandemic increases distances in the Venice lagoon', *Town Planning Review*, **92**, 263–70.
- CENTIS, L. and FABIAN, L. (2022), 'Pilgrims and followers', *Topos*, **118**, 62–67.
- CIRIACONO, S. (1980), 'Scrittori d'idraulica e politica delle acque', in G. Arnaldi and M. Pastori Stocchi (eds), *Storia della cultura veneta: dal primo Quattrocento al Concilio di Trento*, vol. 3, book 2, Vicenza, Neri Pozza, 491–512.
- CIRIACONO, S. (2006), *Venice, Holland, and the Construction of the European Landscape in Early Modern Time*, New York, Berghahn Books.
- CITTÀ DI VENEZIA (2020), 'In meno di due mesi molti studenti hanno trovato casa a Venezia grazie al portale StudentsVeniceapartment', 17 November, *Città di Venezia*, <https://live.comune.venezia.it/it/2020/11/meno-di-due-mesi-molti-studenti-hanno-trovato-casa-veneziah-grazie-al-portale> (accessed 9 January 2024).
- CITTÀ DI VENEZIA (2023), 'Annuario del turismo: dati 2022', *Città di Venezia*, https://www.comune.venezia.it/sites/comune.venezia.it/files/immagini/Turismo/Annuario_del_Turismo_dati_2022.pdf (accessed 9 January 2024).
- CONCINA, E. (2000), 'Venezia, "tra due elementi sospesa"', in L. Anglani (ed.), *Tra Due Elementi Sospesa?: Venezia, Costruzione di un Paesaggio Urbano*, Venezia, Marsilio, 15–51.
- DORIGO, W. (1995), 'Fra il dolce e il salso: origini e sviluppi della civiltà lagunare', in G. Caniato, E. Turri and M. Zanetti (eds), *La Laguna Di Venezia*, Verona, Cierre Edizioni, 137–91.
- ESCOBAR, S. (1980), 'Il controllo delle acque: problemi tecnici e interessi economici', *Scienza E Tecnica Nella Cultura e Nella Società dal Rinascimento a Oggi*, Storia d'Italia, Annale III, 85–153.
- LEONARDI, P. (1960), 'Cause geologiche del graduale sprofondamento di Venezia e della sua laguna', in *Atti del convegno per la conservazione e difesa della laguna e della città di Venezia*, Venezia, Istituto Veneto di Scienze, Lettere ed Arti, 83–103.

- MINISTERO DEI LAVORI PUBBLICI, MAGISTRATO ALLE ACQUE, PROVVEDITORATO REGIONALE ALLE OPERE PUBBLICHE DI VENEZIA (1991), ‘Convenzione Generale 7191 del 4 ottobre 1991’, <https://www.mosevenezia.eu/wp-content/uploads/2015/03/Convenzione-Generale-7191-del-4-ottobre-1991.pdf> (accessed 9 January 2024).
- RIEGL, A. (1903), *Der Moderne Denkmalkultus: Sein Wesen Und Seine Entstehung*, Wien, Verlage von W. Braumueller.
- TAFURI, M. (1980), “‘Sapienza di stato’ e ‘atti mancati’”: architettura e tecnica urbana nella Venezia del ‘500’, in *Architettura e Utopia nella Venezia del Cinquecento: Venezia, Palazzo Ducale, Luglio-Ottobre 1980*, Milano, Electa, 16–39.
- ZUCCHETTA, G. (1985), *I Rii Di Venezia: La Storia Degli Ultimi Tre Secoli*, Venezia, Helvetia.