READING AND BUILDING VENICE, 1984. CAPPAI, MAINARDIS, PASTOR'S CASE POPOLARI AS MATERIAL CULTURE.

ABSTRACT

In the 1980s, Venice was a unique laboratory for studies on the relationship between contemporary architecture and the historical city, a matter which is critical today as well. Architecture projects of this period are precious testimonies to ways of reading the historical context and building within it. In February 1984, four architecture firms delivered the documentation required by the Venice Municipality's Extraordinary Housing Programme competition, concerning the construction of four housing projects in the Venetian territory. These were among the city's first new housing schemes directly operated by the Municipality after World War Two. Based on the analysis of archival documents, this study focuses on architects Cappai, Mainardis and Pastor's project, which proposed a reading of the city and their interpretation of housing as the expression of a 'material culture'. Beyond formal analogies, they chose to structure their project around the persistent material culture which underlay residential construction in both historical and contemporary Venice. Understanding the material culture of their time as inseparable from the building market, they adopted modern building industrialisation techniques. As the group was selected to build three schemes, their theoretical effort was eventually matched by an episode of actual prefabrication within the island's historical centre.

Francesco Maranelli

Università Iuav di Venezia fmaranelli@iuav.it

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1. INTRODUCTION

In the 1980s, Venice was a unique laboratory for historiographical and theoretical studies on the relationship between contemporary architecture and the historical city. Manfredo Tafuri, Massimo Cacciari and Francesco Dal Co's discussion of the 'myth' of Venice and the city's 'resistance' to modernity, as well as Vittorio Gregotti's definition of Venice as a 'city of a new modernity' were part of issue 22 of the magazine Rassegna, of 1985. The 'new' architecture of sixteenth-century Venice was among the subjects of Tafuri's Venezia e il Rinascimento, also of 1985. Paolo Maretto's inquiry on the Venetian house from its origins to the 19th century was published in 1986. Studies such as those by Giandomenico Romanelli and Elia Barbiani on Venetian housing between the nineteenth and the early twentieth century addressed the 1920s debate on 'Venetian-ness' in social housing projects, between hygienic constraints and the problem of preserving a coherent urban morphology.² They went even further back, to the 'dialectic between history and modernity' in the choice of materials and typologies for the Venetian house of the nineteenth century, where the ideal of the healthy house and the search for continuity with a supposedly typical Venetian building tradition clashed.³

The construction of new housing schemes in Venice during the 1980s granted that those discussions on the historical city the opportunity to shape concrete design experiences. Venice was being built, especially in those areas of the island identified as the 'inner outskirts'.⁴ The term hints at the contrast between the different parts of the city's territory which were available for new construction: a periphery *intra forma urbis*, within Venice's apparently complete urban form made of compact masses of Gothic fabric and Renaissance *ganglia*,⁵ where new architecture was problematic; and a periphery *extra forma urbis*, in the mainland settlements of Mestre, Marghera, Chirignago, Favaro Veneto, Zelarino and Malcontenta, where the technologies and forms of contemporary construction could find space.⁶ In the 1970s, 80% of the residential stock on the Venetian mainland had been built after the war.⁷ There, building industrialisation experiments were carried out for new housing schemes.⁸ What could be the space for new technologies and forms within the brick-and-timber urban fabric of insular Venice?

Some design strategies and projects for the historical city devised in the 1980s, such as Gino Valle's public housing complex in Giudecca, have been widely studied. Valle's 'mat-building' structure and dense network of paths evoked Giudecca's urban morphology and the spatial qualities of the Venetian *calle* (narrow street), *sotoportego* (covered passage) and *campiello* (small square); its architectural language alluded to the forms, colours and construction traditions

of the island's past. Other projects of the same period, such as the one presented in this essay, although lesser known, are precious testimonies to other ways of reading the historical context and building within it. The historical analysis of these Venetian schemes, with their singularities and within their specific urban planning, social and economic contexts, is an important tool to tackle some of the contemporary challenges historical cities face.

2. THE 1983 EXTRAORDINARY HOUSING PROGRAMME

In late February 1984, four groups of architects delivered the documentation required by the Programma Straordinario di Edilizia Abitativa's concorsoappalto (Extraordinary Housing Programme competition-call for tenders) to the Venice City Council's General Secretariat.¹⁰ The call for tenders had been issued on 19 December 1983 and was supported by a loan of over 27 billion lire from the Comitato per l'Edilizia Residenziale (C.E.R.: Housing Committee). With the call for tenders, the Municipality organised a preselection of candidates to carry out four publicly funded housing schemes within its territory, both on the mainland and the lagoon islands. The call for tenders' technical brief, prepared by the Assessorato all'Edilizia Convenzionata (Department of Social Housing), instructed professionals to devise a proposal for 352 dwellings, with precise dimensional and technological features, for the ex-Saffa area in Cannaregio, on the Venetian island (150 units); for the ex-Fregnan area in Sacca Fisola, a small island adjacent to the Giudecca (40 units); and for Chirignago (76 units) and Zelarino (50 units), two urban areas on the mainland. 12 The Programme also involved the construction of 36 units on the island of Mazzorbo. However, this fifth scheme was not part of the call for tenders and was managed by the Istituto Autonomo di Case Popolari (I.A.C.P.: Popular Housing Autonomous Institute) instead. The tenders, which were to be delivered by designers in association with construction companies, had to be composed of an economic estimate and a detailed design proposal, complete with all technological and constructional information. The brief's Foglio condizioni specified that every group should present a tender for all four areas. Each housing scheme would be illustrated by a single, individually delivered pack of design documents. For each scheme, the City Council would evaluate the best proposal among those presented by all eligible participants. Only after this preselection would the authorities begin a private negotiation with the winners for the executive design of the four schemes and their construction.13

The call for tenders is a significant episode within Venice's political and urban

history. Firstly, it demonstrates the function of a national ministerial body, the Public Works Ministry's Comitato per l'Edilizia Residenziale (C.E.R.). In 1971, the C.E.R. became Italy's main institutional structure in charge of the housing agenda, regulation and research, as well as of gathering and managing funding for all of the country's public housing.14 Regional authorities became co-responsible institutions as far as the administration of funding for their territories was concerned. Regions were tasked with distributing financial resources among Municipalities, which were now in charge of public intervention policies in the field of housing. This was an innovation: all public housing was formally and effectively financed by Regions (rather than by the State) and managed by local authorities. As Valeriano Pastor writes, this already relevant role played by local institutions in public housing was further expanded by a number of laws issued in the 1970s and 1980s. These gave Municipalities new responsibilities and funding for purchasing land parcels and properties, as long as these were part of areas designated for redevelopment and ex novo construction by urban planning policies. No longer a 'passive controller' of public housing management, the Municipality, now a mostly autonomous local institution, 'acquired, designed and delivered'.15

In Venice, Mario Rigo's two mandates as mayor (P.S.I.: Italian Socialist Party, 1975-1980; 1980-1985) constituted the political context of a prosperous public housing season. Manuela Pivato's "Le case popolari 'firme' d'autore" ("Designer people's dwellings") column in the La Nuova newspaper, published in February 1989, finely attests this. 16 In the promotion and management of this season, important roles were played by the highly competent members of Rigo's Councils, such as deputy mayors Giovanni Pellicani and Paolo Cacciari (architect), urban planning councillor Edoardo Salzano (professor at I.U.A.V., the Istituto Universitario di Architettura di Venezia) and social housing councillors Gianfranco Pontel and Bruno Cassetti (architect). A large portion of the housing schemes delivered during this period concerned the Giudecca, one of the islands within what formally was considered the historical city. As historian Marco De Michelis wrote, after 1975 the Giudecca was part of a 'programme of interventions [...] so extensive as to amount to a comprehensive project for the islands, even in the absence of a fully formulated strategic frame of reference'. 17 Interventions included housing schemes such as Gino Valle's, built in 1980, Gambirasio's 'familistery' at the former Dreher brewery, 18 and the outcomes of the 1985 Campo di Marte competition, which Alvaro Siza won. Valle's Giudecca development was also the first of a series of Venetian public housing schemes directly operated by the Municipality (rather than the I.A.C.P.). The first four of the five Extraordinary Housing Programme schemes were part of that series as well.

The Programme addressed the need for 'distributing the new units within municipal areas where the housing problem was emergent and pressing'. It concerned areas identified as municipally owned, urbanised or soon-to-be urbanised by urban planning policies.¹⁹ When the call for tenders was issued, the Chirignago and Zelarino areas were part of two Piani per l'Edilizia Economica e Popolare (P.E.E.P.: Economical People's Housing Plans) as variants to the Piano Regolatore Generale (P.R.G.: General Urban Regulation Plan; as it was Mazzorbo's I.A.C.P. area). As far as the two historical city developments were concerned, the ex-Fregnan lot, of about 13.000 square metres and municipal property since 1973, was identified as a residential area by a Piano Particolareggiato (Detailed Plan);²⁰ the ex-Saffa lot, a privately owned area of about 28.000 square metres, was identified as a residential area by the P.R.G.²¹ With the Programme, the City itself was proposing a farreaching vision for its own urban development. This was a nodal episode in twentieth-century Venice's political and urban history, especially considering that two of the four housing schemes would be located within the island's historical centre - 'margins of the body: body nonetheless'.22

Beyond the quantitative requirements for the dwellings, the call for tenders' *Foglio condizioni* and technical brief highlighted the qualitative aspects that the board of examiners would carefully assess. Among these were urban planning, technological and typological choices, the relationship between buildings and the environmental context, energy efficiency, comfort, and the quality of the building process. Interestingly, the documents devoted particular attention to the possibility of adopting building industrialisation systems.²³

CAPPAI, MAINARDIS, PASTOR'S PROJECT WITH THE POLESE CONSTRUCTION COMPANY

This essay presents the proposal for the competition call for tenders submitted by the group constituted by architects Iginio Cappai (1932-1999), Pietro Mainardis (1935-2007) and Valeriano Pastor (1927-) with Polese S.p.a., a construction company based out of San Donà di Piave. The focus of this essay is not the reconstruction of their answers to the dimensional and technological problems identified by the competition brief but, instead, how the group offered a reading of Venice in the form of a housing project and devised a design strategy for the city's historical centre. The study of this reading was made possible by analysing archival material documenting the design process leading up to their bid, which is part of the Studio Cappai Mainardis fonds at Iuav University's Archivio Progetti in Venice. These include sketches as well

as the definitive set of drawings, but especially several drafts of their project bid notes and preparatory materials: manuscripts, book scans and photographs taken on the island until February 1984. These materials can all be regarded as gazes upon Venice, attempts at understanding its urban structure and building culture – aspects which then became critical design instruments.

Among the documents delivered by Cappai, Mainardis and Pastor to the Municipality's General Secretariat, the four project notes (one for each area) are particularly interesting for this study. The structure of the notes declared the designers' intents: they shared a common introductory section, printed on white paper, which contained the "Offer Contents" and "Design Solutions" paragraphs. The opening paragraphs stated the objectives and instruments shared by the four schemes:

For the Venetian historical city and Mestre areas, the offer presents a design and economic frame which is unitary in its *criteria*, technologies and architectural solutions, with different urban planning or architectural complexities depending on the different environmental and legislative conditions. [...] each note repeats the technological arguments which constitute the unity of objectives, methodologies and procedures, identifying the paragraphs which highlight differences and specific traits among the schemes with different page colours. From the perspective of economic and cultural value, the relationship between the unity of *criteria*, technologies, form and the plurality of cases and differences is a fundamental trait.²⁴

The second section of each note, printed on yellow paper, specifically commented on its specific scheme. It began with an analysis of the context, a declaration of the site-specific design strategy and a more detailed description of the plan, technological and constructional features.

A third section, printed on white paper, illustrated the main elements of the four schemes through *collages* of drawings, scans taken from art history books, photographs, diagrams and fragments of text. A large part of the images came from the book *Venezia Minore* (first edition 1948, second edition 1972), by Egle Renata Trincanato (1910-1998) and from the first two volumes of the *Civiltà di Venezia* series, edited by Guido Perocco and Antonio Salvadori (first editions 1973, 1974). Each *collage* was dedicated to a specific aspect. The structure of this section was identical in each note; however, its content changed according to the different characteristics of the four schemes. As an example, one of the

features Cappai, Mainardis and Pastor proposed for the ex-Fregnan and ex-Saffa schemes (so distinctive local newspapers even highlighted it²⁵) was the *cavana*, a building traditionally used in Venice for the mooring of small boats. In the pages of the ex-Saffa and ex-Fregnan notes, one would find a sheet with a *collage* illustrating its constructional tradition; while the sheet was clearly not included in the Chirignago and Zelarino notes.

4. THE PROJECT BID NOTES AND THE QUESTION CONCERNING MATERIAL CULTURE

The second paragraph within the shared introductory section stated the "Design Solutions" - the theoretical and methodological principles. It began with a programmatic declaration: the bid acknowledged architectural form as the outcome of a research which tied 'the essence of technologies and cultural processes' together. In this sense, according to Pastor, Cappai and Mainardis, the 'economical house' should not be interpreted as the lesser product of more important design processes, or as a field reserved to exclusively technical practices; but, rather, as 'the place of expression of a material culture, where the need for living quality and a sense of historical values' were tightly intertwined. Within the limits of the technical and economic rules set by the call for tenders, the designers aimed at 'manifesting a form of culture', identifying the persistent features of the material culture underlying all Venetian historical construction and using them to formulate a design proposal.²⁶ Their primary reference was the Venetian historical city: due to the harsh constraints they imposed and the 'suggestions' they provoked, the ex-Saffa and ex-Fregnan areas constituted the principal objects of their design programme.

Their objective was to produce an image that was 'coherent with the historical one'. ²⁷ However, this would not force them to reference specific formal images or to choose 'eighteenth century compositions' for their buildings. Instead, it would make them investigate the 'tectonic' nature of the historical system: the expression of a simple, diagrammatic relationship between the structure of buildings and space. ²⁸

The architects further marked the distinction between the two approaches within the project bid note manuscript. The coherence with the historical city's 'code' did not imply a 'mimesis of materials and images', but, rather, an adherence to the 'truthfulness of the technological character'.²⁹ The proposed building system presented a formal analogy, but the image was 'tectonic' in nature. It spoke of Venetian settlement configurations developed according

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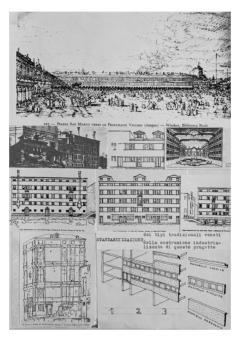
to the specific building site conditions.³⁰ We find the distinction again in an essay by Carlo Cappai and Maria Alessandra Segantini published in Valeriano Pastor's 1998 book Edilizia residenziale pubblica. Ristrutturazioni a Venezia in un'esperienza didattica: there, 'Venetian-ness' as 'an image reduced to a purely formal expression' was contrasted with a 'Venetian-ness' which was 'rich in meaning and in the original tectonic and formal complexity which consisted in its constructional traits'.31 Architecture journals which published the ex-Fregnan scheme in the early 1990s, such as Edilizia popolare or Industria delle costruzioni, finely captured the essence of this design intention: building in Venice should not lead to 'picturesque effects' or to some sort of 'mimesis'.32

For Pastor, Cappai and Mainardis, the 'economical house' represented the core terrain where a Venetian 'material culture' had developed in the past and should persist in the present. '[...] the economical house as the outcome of modern processes is recognised as the product of a material culture, as it had been in the tradition as the product of known techniques'.33 Commenting on the ex-Fregnan scheme in 1993, Pastor wrote that he and his two colleagues had not pursued a formal image (or mimema, to use his words), but rather an image of the 'thinking (ethos and imagination) of a large class of humans': a transfiguration of technical processes into a 'poetic dwelling device which meets tradition'. This was the meaning, for Pastor, of the 'casa economica e popolare' notion (economical people's dwelling).³⁴ Cappai and Segantini's 1998 essay, adopting many of the themes and terms used in Pastor's 1993 text, would further tie the 'material culture' and 'people's dwelling' concepts together: '[...] casa popolare because it is built for the people (as per the traditional meaning) and people's dwelling because it is built by the people.' In their essay, the totality of users corresponded to a 'way of thinking-style', to be found in 'common sense', in ways of dwelling and building. Architects might adopt it to orientate their design process. Case popolari would be direct expressions of the 'material culture' of an age in a specific social context. Cappai and Segantini chose Sansovino's Moro houses in Cannaregio as an example of this. There, they wrote, Sansovino abandoned the flatteries of architectural inventio to choose a consuetudo: his design elements became those of his time's constructional know-how, as if the city itself and its material culture were dictating the technological and compositional rules for the building. The architect became the silent interpreter of an ancient lexicon – a 'forming form' which could be instilled in new projects.³⁵

In the contemporary world, that very 'common sense' could be found as much in the technological way of thinking of the past as in that of the present day: the technologies and the forms the designers adopted referred both to the contemporary culture of the Venetian 'metropolitan' complex and to its historical origins. Moreover, the state of material culture could not be separated from the construction products market.³⁶ These theoretical musings were reflected in Cappai, Mainardis and Pastor's collaboration with Polese S.p.a.³⁷ They did design 'figures' which echoed traditional Venetian settlements; but they did so with building industrialisation processes and 'advanced technologies'.³⁸ Building industrialisation belonged to the contemporary world and, as such, was understandable by everyone, 'by every user as well as by every construction worker'. The 'simplicity' and 'pure technicity' of the chosen construction systems, vehicles of Venetian material culture, allowed for the generation of 'urban forms that were coherent with the historical ones'.³⁹

5. GRAMMATICAL TRANSFORMATIONS: THE INDUSTRIALISATION OF TRADITIONAL BUILDING SYSTEMS

The rationalisation and industrialisation of traditional building systems did not lead to a reinterpretation of historical forms, but to what the architects defined as 'grammatical transformations'. 40 The meaning of this critical concept, which became a design instrument, is hinted at by the thematic collage sheets. Among the *collages* which more directly referred to the 'material culture' notion was one entitled Standardizzazione dei tipi tradizionali veneti / della costruzione industrializzata di questo progetto (Standardisation of traditional Venetian types / of the industrialised construction of this project; Fig. 1). It described the solution adopted for the façades: self-supporting prefabricated vibrated reinforced concrete panels, anchored to the concrete walls that formed the 'structural fabric' of the scheme (Fig. 2).41 In the vertical development of the façade, solid ribbed panels alternated with perforated panels made of lightcoloured artificial stone with a water-repellent treatment, forming 'Vierendeellike beams'. 42 The five holes of the lattice panels could be completed with infill elements, with wooden window frames, or they could remain empty ('or, rather, seasonally closable'). The façade terminated with a prefabricated reinforced concrete cornice, which also functioned as a gutter. Panels were coupled by means of a special watertight patented device, the JOINT P71 type joint.⁴³ Air tightness was achieved through silicone sealing.44 The internal surfaces of the panels featured an insulating coating made of plasterboard sheets coupled with polystyrene, with an aluminium foil vapour barrier in between. The external finishes of the panels were in 'Veneto material': marmorino in Cannaregio, pastellone in Sacca Fisola.



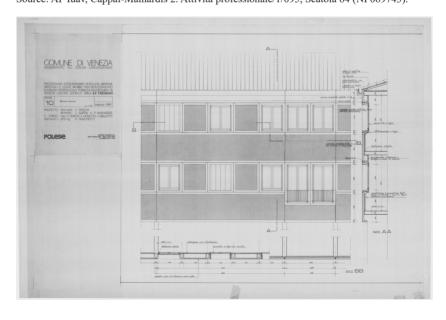
UP: FIGURE 1:

The original 'standardisation' collage sheet.

Source: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165 (NP070083).

DOWN: FIGURE 2:

Definitive project drawing for the first ex-Fregnan lot, illustrating the façade technology. Source: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Scatola 64 (NP069743).

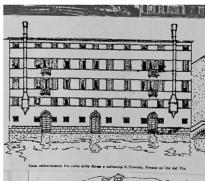


Within the project bid note, the architects highlighted how self-supporting façades, shaped as sequences of 'lattices of varying complexity' had been a feature of traditional Venetian construction. In the historical constructional forms', they wrote, 'the opportunity to subdivide wall surfaces and to mark them with joints (Istrian limestone façade horizontal marks) has a progressive development, especially with eighteenth-century rationality'. The images crowding the *collage* directly spoke of this eighteenth-century constructional rationality. The authors gathered Trincanato's drawings from the *Venezia minore* pages dedicated to eighteenth-century Venetian residential buildings: a fragment of the Calle delle Mende dwellings (Fig. 3), two façades of the house between Calle delle Rampe and Salizzada S. Provolo (Fig. 4), a Calle dei Furlani house.

FIGURES 3-5:

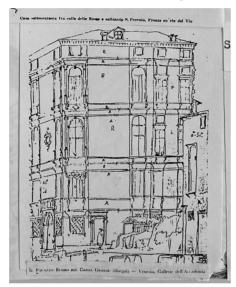
Fragments of the 'standardisation' *collage*: the Calle delle Mende dwellings, the Calle delle Rampe/Salizzada S. Provolo house; a fragment of Canaletto's Campo Ss. Apostoli painting (1697-1768). Source: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165 (NP070083).







To these, they added a fragment of a painting of Campo Ss. Apostoli by Canaletto (1697-1768), which they probably took from volume two of Perocco and Salvadori's *Civiltà di Venezia* (Figs. 5-6), Canaletto's 'scaraboto' (sketch) of Palazzo Bembo (Fig. 7), one of his views of Piazza San Marco's Procuratie Vecchie (c. 1740) and an engraving of the San Samuele theatre interiors, by Antonio Codognato (1753). These were not all eighteenth-century Venetian residential buildings. However, they shared a fundamental trait: they all had façades which were clearly dominated by horizontal lines and a vertical succession of solid and 'lattice' panels.



FIGURES 6-7: Canaletto (1697-1768), Campo Ss. Apostoli, the painting from which the detail in Fig. 5 was taken; Canaletto's 'scaraboto' of Palazzo Bembo (Gallerie dell'Accademia a Venezia, c. 1730). Sources: Venice, Fondazione Giorgio Cini, Fototeca dell'Istituto di Storia dell'Arte, Fondo Pallucchini, SDPALL191-1-81, (Codice 529118); AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165

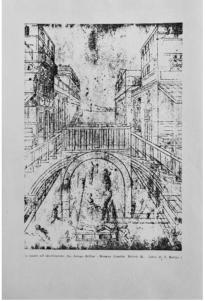
(NP070083).



We find these same features in the Ponte San Stin palace photographed for several *collage* drafts and in Jacopo Bellini's sketch, which the architects attached at the end of every note's *collage* section (Figs. 8-9).

FIGURES 8-9: Picture of a Venetian palace taken from Campo San Stin, featuring the Istrian limestone horizontal marks; Bellini's view of a fifteenth-century Venetian canal. Even in Bellini's "abstract" preliminary drawing one finds the façades' horizontal lines. Sources: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 222 (NP070083); AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165 (NP070083).

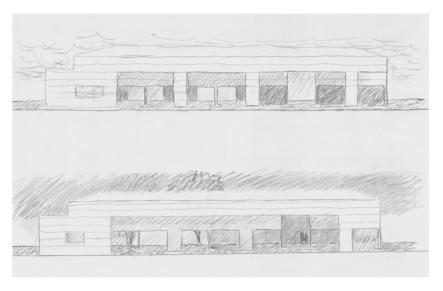


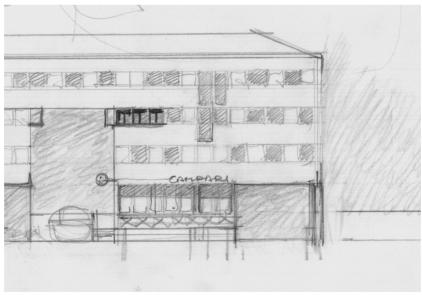


Thus, this was the inevitable 'analogy in the formal outcome' with Venetian buildings achieved by their design; an outcome which was not the result of mere imitation but rather of a shared research in constructional *ratio* (Figs. 10-11).⁴⁷ Present-day rationality concerned building industrialisation, which brought together '*in situ* execution, specific prefabrication and installation of industrial products', granting simple and clear forms, great performances and flexibility thanks to its modular system (Figs. 12-13).⁴⁸

Similarly, the 'grammatical transformation' notion can also be adopted to describe the technological solutions for the design of public space within the four schemes (Figs. 14-15). The 'public pedestrian routes paving', designed for the ex-Fregnan courtyards and the ex-Saffa *campi* and *sotoporteghi*, reproposed the formal outcome of traditional Venetian paving patterns, which were often framed by blocks of light-coloured stone.

FIGURES 10-11: Two preliminary drawings highlighting the horizontal marks characterising the buildings' façades. Source: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Scatola 42 (NP069743).





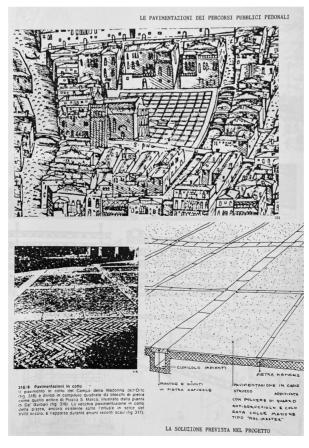


FIGURES 12-13: Two building site photographs documenting the construction process for the first ex-Fregnan lot. Source: AP Iuav, Cappai-Mainardis 4.Fotografie/39, Scatola 283 (NP071805).





FIGURES 14-15: The 'public space paving' *collage*; the completed ex-Fregnan pavement, as photographed by Roberto Righetti. Sources: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165 (NP070083); AP Iuav, Cappai-Mainardis 4.Fotografie/50, Scatola 280 (NP071803).



More specifically, as the *collage* images suggested, the reference was to that of Campo San Polo, as shown in De' Barbari's Veduta di Venezia (taken, for this collage, from page 267 of Civiltà di Venezia, volume one) or to that of Campo della Madonna dell'Orto, made of terracotta bricks (taken from page 259 of the same book). However, the technology also belonged to the sphere of industrialised building. The blocks were to be made of concrete, with quartz powder additive and 'Mac-Master type' brick-coloured pigment; the main lightcoloured bands, made of natural stone, were also used as lids for inspectable underground ducts. The project bid note manuscript's last page hosts a list of pencil-written memos on its verso. 'Venetian-ness', states one of the memos, should be found 'within urban planning standards – services as well as within the walls defining [?] public space // not in altane [traditional Venetian wooden rooftop terraces] or in private balconies'. 49 Even the technological solutions chosen for details such as outdoor paving were profoundly coherent with the 'material culture' and 'grammatical transformation' principles adopted by the three architects. They equally contributed to the construction of spaces one could experience as intrinsically 'Venetian'. The last memo of the list is an interrupted sentence: 'Venice is not seen from above but'. 50 In its substance, the same memo can be found again as a statement of intents, typewritten in small capitals, in the white pages of the notes' shared part:

The city, the neighbourhoods, the buildings are recognised in the daily experience, in fragments of space and in the flowing of time: the vision from above, the "birds' eye view" is estranging hermetic if compared to what is experienceable, unable to anticipate its images and the comprehension of its structure. We thus preferred the representation of moments and visual fragments of the concrete experience [of the city].⁵¹

Among the materials produced for the competition-call for tenders, one finds only one 'all-encompassing' axonometry, but numerous perspective drawings and urban scenes. Even Bellini's sketch can be understood as a demonstration of the spatial outcomes of the Venetian material culture: once again, the 'simple, diagrammatic relationship between the structure of buildings and space'.⁵²

6. CONCLUSION

In April 1984, the Venetian Department of Social Housing prepared the Relazione del programma definitivo per il Programma Straordinario di Edilizia Abitativa (Definitive programme note for the Extraordinary Housing Programme), which was then published on the public notices board on 3 May.⁵³

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After a 'strenuous analysis' of the four proposals and the subsequent private negotiations, the City Council selected the solution presented by the Polese company with architects Cappai, Mainardis and Pastor ('which involved the adoption of prefabrication systems') for the Chirignago, Zelarino and ex-Fregnan developments; and the solution presented by the Consorzio Imprese Veneziane Nuove (C.I.VE.N., based off Santa Croce, Venice) company with architect Vittorio Gregotti for the ex-Saffa development. The Cannaregio area, as the note explained, played 'an important role within the historical city centre', leading to the choice of the best design solution adopting 'traditional technologies'. In the definitive programme, the number of dwellings grew from 40 to 43 for the ex-Fregnan area, from 76 to 79 for Chirignago and from 50 to 51 for Zelarino. It diminished from 150 to 134 for the ex-Saffa area. The maximum construction cost allowed by the programme remained the same for the three Cappai, Mainardis and Pastor schemes, while it grew by around 40% for the ex-Saffa scheme.⁵⁴ On 7 May 1984, social housing councillor, Prof. Bruno Cassetti (P.C.I., Italian Communist Party), wrote a letter to the selected construction companies, attaching copies of two Municipal determinations dated 17 April 1984.⁵⁵ With those, the City Council approved the definitive programme and scheduled the issuing of the building concessions. The largest intervention for the ex-Saffa area was handed to Gregotti. However, Cappai, Mainardis and Pastor were given the opportunity to direct the executive design and construction of one of those 'inner outskirts' which constituted the field for Venice's public housing season of the 1980s – Sacca Fisola.⁵⁶ The design principles stated in the project bid note were translated into a fabric of reinforced concrete walls and industrialised façades in the first ex-Fregnan lot. In this sense, the ex-Fregnan scheme (and the Programma Straordinario products as a whole) should not be understood as relevant for urban planning, economic or political reasons only. In an essay entitled "Disegnare, pezzo a pezzo, il futuro. Nuovi progetti per la città storica," Marco De Michelis suggested how Venice's 'rejection' of the Wright's, Le Corbusier's and Kahn's extraordinary 'attempts to originally interpret the Venetian exceptionality' of the 1950s and 1960s could not be only interpreted as a 'simple renunciation of any sort of transformation'. 57 Hundreds of building extensions had been carried out within the historical centre islands during the post-war years: a praxis of 'normalisation' of the historical city. This highlighted a recurring inability to accept any greater attempt at conceiving 'modern representations of the Venetian unicity'. The construction of the ex-Fregnan scheme was part of the process which led to the end of a 'paralysing dilemma': the dispute between the radical preservation of the urban organism and the legitimacy of contemporary architecture to operate on the historical matter of the city.⁵⁸ In the same years when Venice became part of the Unesco World Heritage (1987), a recognition which explicitly

acknowledged the rare persistence and homogeneity of its historical image, the city was also continuously read, designed and built. Cities with relevant built heritage can indeed be transformed by contemporary architecture. Well beyond the design questions posed by the 1985 Biennale, which had 'fragile meanings', the 1980s housing developments aimed at finding answers for the ancient city's 'salvation' through its very transformation. In particular, they did so by retrieving the 'raison d'être' of its margins (Fig. 16).59 According to De Michelis, this process continued during Massimo Cacciari's mandates as mayor and with the design opportunities, either public, private or hybrid, of the 1990s. Examples are Cino Zucchi, Boris Podrecca, Bernard Huet and Luciano Parenti's buildings in the ex-Junghans area. The relevance of the 1980s and 1990s built projects is thus markedly cultural as well. Even though they were not part of a single, homogeneous development programme for Venice, they contributed to re-designing the historical city and its future, 'as tiny movements of form'. 60 Pastor had wished for a 'jumble [...] of many discourses revealing a shared linguistic structure' for Venice. 61 The jumble of 'modern representations' of the city, such as that proposed by Cappai, Mainardis and Pastor, contributed, 'piece by piece', to the material construction of contemporary Venice as well as of its architectural culture.62

FIGURES 16: A montage of four photographs, part of the Cappai Mainardis fonds, illustrates three of the 1980s Giudecca housing schemes: on the right, Gambirasio's; in the middle, Valle's; on the left, Cappai, Mainardis and Pastor's first ex-Fregnan lot. Source: AP Iuav, Cappai-Mainardis 4.Fotografie/39, Scatola 283 (NP071805).



The debate on the dialectic between contemporary architecture and the historical city was critical in 1980s Venice as it is today. The current instability of the housing scenario in European cities, as well as the growing evidence of the economic, environmental and cultural value of working on existing built heritage, hint at the relevance of renewed reflections on this relationship.⁶³ A variety of architectural projects of the recent past, not unlike the one presented in this essay, aimed at finding answers to similar challenges. Their rigorous study may highlight the characteristics of their specific urban planning, housing policy, social and economic contexts. It may also reveal the rich complexity of possible approaches towards integrating new structures (for instance, housing schemes) into urban contexts with relevant historical fabric.

NOTES

- Manfredo Tafuri, Francesco Dal Co, Massimo Cacciari, "Il mito di Venezia," Rassegna VII, no. 22 (June 1985): 7-9; Manfredo Tafuri, Venezia e il Rinascimento. Religione, scienza, architettura (Torino: Einaudi, 1985); Paolo Maretto, La casa veneziana nella storia della città dalle origini all'Ottocento, with an essay by Gianfranco Caniggia (Venezia: Marsilio Editori, 1986).
- Elia Barbiani, "Case popolari tra industrializzazione e urbanizzazione," in Edilizia popolare a Venezia. Storia, politiche, realizzazioni dell'Istituto Autonomo per le Case Popolari della Provincia di Venezia, ed. Elia Barbiani (Milano: Electa, 1983), 11-34; Giandomenico Romanelli, "Dalle 'case dei poveri' ai quartieri degli anni Trenta. I residui del linguaggio," in Barbiani, Edilizia popolare a Venezia, 35-67. For a recent study on this topic, see: Alexander Fichte, Städtische Wohnquartiere in Venedig (1918-1939). Urbane Gestalt zwischen modernen Anforderungen und lokaler Bautradition (Berlin: Jovis Verlag, 2022).
- Romanelli, "Dalle 'case dei poveri' ai quartieri degli anni Trenta," 38-39.
- 4 Carlo Magnani, PierAntonio Val, "La misura del progetto," *Rassegna* VII, no. 22 (June 1985): 78-83. See also the "antiperiferia" (antiperiphery) concept in Franco Mancuso, *Venezia è una città* (Venezia: Corte del Fontego, 2009), 69; and Jacques Lucan's essay "Lezioni di Venezia," *Vesper. Rivista semestrale di arti e teoria* 8, no. 1 (Spring/Summer 2023): 98-99.
- 5 Lucan, "Lezioni di Venezia": 91.
- Barbiani, "Case popolari tra industrializzazione e urbanizzazione," 17. The mainland settlements had been characterised by a demographic boom in the first three decades of the 20th century, with the construction of the port and industrial areas in Marghera and residential areas in Mestre. Mestre then experienced another demographic growth between 1945 and 1975, rising from 82,620 inhabitants to 210,674: Romanelli, Rossi, *Mestre*, 36-39, 51-52.
- Giandomenico Romanelli, Guido Rossi, *Mestre. Storia territorio struttura della terraferma veneziana* (Venezia: Arsenale Cooperativa Editrice, 1977), 58-60. As Romanelli writes, the urban development of the Venetian mainland system can be read as dual to that of the island city, with housing both directly linking the mainland with the island and fueling an irreconcilable contrast between the two: Romanelli, Rossi, *Mestre*, 9.
- Nicola Sinopoli, Gian Franco Geron, "Case popolari e politica tecnica," in Barbiani, *Edilizia popolare a Venezia*, 141-156: 150-153. This also had to do with adopting new procedures for call for tenders through law no. 584/1977, which introduced the notion of the "most advantageous offer" and favoured building proposals involving shorter completion times and high-quality solutions. An example of this was the use of 'tunnel' construction systems for housing schemes in Favaro, Mirano and Chirignago around that same time.
- 9 Pierre-Alain Croset, Luka Skansi, *Gino Valle* (Milano: Electa, 2010), 214-223, 232-237. For a rich bibliography on this project, see page 223.
- The Programme was regulated by article 2 of Italian law no. 94/1982.
- 11 C.E.R. resolution, 19 May 1983. See: Venice, Archivio Progetti, Università

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- For details concerning dwelling types, see: Costa, *Disciplinare tecnico*, 13.
- The executive project was to be completed within 75 days after the negotiation. AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083): Programma straordinario di edilizia abitativa. Foglio condizioni, eds. Franco Costa, Vittorino Favaretto, Maria Maddalena Morino (Venezia: Comune di Venezia. Assessorato all'Edilizia Convenzionata, 1983), 5-10 [henceforth Foglio condizioni].
- Tullio Campostrini, "Dalla GESCAL agli anni della riforma incompiuta," in *Costruire a Venezia. Trent'anni di edilizia residenziale pubblica*, ed. Tullio Campostrini (Venezia: il Cardo, 1993), 22.
 - Valeriano Pastor, "Progetti e costruzioni a Venezia nel dopoguerra. Il contributo dell'esperienza veneziana alla soluzione dei problemi della casa", in Campostrini, *Costruire a Venezia*, 45. Special law no. 171/1973, and law no. 25/1980, were particularly relevant in this sense.
- Manuela Pivato, "Colloquio con Gregotti sulle case popolari. Questa città
 'intoccabile'," La Nuova. Cronaca di Venezia, Thursday, 23 February, 1989, 15;
 Manuela Pivato, "Le case popolari "firme" d'autore. Quando Gino Valle ideò
 l'area Trevisan," La Nuova. Cronaca di Venezia, Friday, 24 February, 1989, 15;
 Manuela Pivato, "Gli alloggi popolari 'firme' d'autore. Mazzorbo in azzurro
 secondo De Carlo," La Nuova. Cronaca di Venezia, Saturday, 25 February,
 1989, 16; Manuela Pivato, "Gambirasio e la cura dei dettagli. Quarantaquattro
 appartamenti realizzati con Gianfranco Brusati," La Nuova. Cronaca di Venezia,
 Sunday, 26 February, 1989, 15; Manuela Pivato, "Concentrazione di case
 d'autore. Roma studia le 'firme' I.A.C.P.," La Nuova Venezia, Wednesday, 1
 March, 1989, [x].
- Marco De Michelis, "Nuovi progetti alla Giudecca. Tipi di edificazione e morfologia dell'isola," *Lotus international* 51, no. 3 (1986): 84.
- Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 48.
- Disciplinare tecnico, 6-7. A central role for this publicly funded housing season (operated by the first Venetian left-wing City Councils after a decade of Christian Democracy administration) was played by the 1979 flooding and by the challenges it posed to the 'rotational dwellings' programme. See: Carlo Cappai, Maria Alessandra Segantini, "La cultura materiale nella costruzione della casa a Venezia," in Valeriano Pastor, Edilizia residenziale pubblica. Ristrutturazioni a Venezia, eds. Maura Manzelle, Mario Spinelli (Venezia: Il Cardo, 1996), 95-96.
- 20 AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 164 (NP070083): Atti notarili per compravendita ex-Fregnan.
- 21 Respectively, by decree no. 2929, 13 June 1978, of the Veneto Region President; and by decree of the Italian Republic President, 17 December 1962. See: *Disciplinare tecnico*, 8-12.

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29 Manoscritto relazione, 17. 30 Contenuto dell'offerta - Fregnan, 4. 31 Cappai, Segantini, "La cultura materiale nella costruzione della casa a Venezia," 93, 101-103. 32 Tiziana Quaglia, "Iginio Cappai e Pietro Mainardis. Il lavoro a due mani per una sola architettura," Edilizia popolare 212, no. 1 (January/June 1990): 48-53; see also: Iginio Cappai, Pietro Mainardis, Architetture e trasformazioni urbane, exhibition catalogue (Cadoneghe, Ca' Ghedini, 11 - 18 October, 2002), with essays by Guglielmo Monti, Francesco Tentori, Adriano Cornoldi (Rubano: Turato, 2002), 20-21; Renato Morganti, "Iginio Cappai e Pietro Mainardis. Edilizia residenziale pubblica a Venezia," Industria delle costruzioni 255, no. 1 (January 1993): 4-7; Massimiliano Casavecchia, "L'architettura di Cappai e Mainardis," Parametro 147, no. 5 (June 1986): 12. 33 Manoscritto relazione, 4. 34 Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 59. The traditional 'casa popolare' (people's dwelling) term had been formally abandoned with law no. 865/1971, which substituted it with the 'edilizia residenziale pubblica' (publicly funded housing) term. Pastor highlighted how the 'popolare' notion had apparently gained a negative meaning. The change was also tied to how the housing problem now concerned a structurally and culturally dynamic variety of social classes. See: Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 44. 35 Cappai, Segantini, "La cultura materiale nella costruzione della casa a Venezia," 88, 90-91, 95-96. The notion of a material culture underlying design processes was splendidly expressed by Giancarlo De Carlo in the Parametro issue dedicated to Cappai and Mainardis: '[...] they love to work within their territory, because they believe architecture must be first and foremost specific to have an intense meaning; it needs to respond to nature's rhythms, to cultural traditions, to the temperament of its inhabitants and place. [...] they consider the architectural event as a context of details which all need to be wisely solved to reach a unitary whole. But the destiny of this whole is to be itself a detail within the broader environmental context it takes part in. [...] they accept the

Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 31.

AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162

(NP070083): Contenuto dell'offerta - Fregnan, 1 [henceforth Contenuto

La Nuova, "Ecco le case Fregnan, ci sarà la cavana," La Nuova. Cronaca di

AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162

AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), *Manoscritto relazione*, 4 [henceforth *Manoscritto relazione*].

Disciplinare tecnico, 18-19; Foglio condizioni, 2-10.

dell'offerta – Fregnan].

Venezia, Friday, September 24, 1984, 9.

Contenuto dell'offerta – Fregnan, 3.

(NP070083), Plico di appunti B.

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rules of the architectural profession as self-discipline; they consider facts, needs, the programme, deadlines and so on as concrete measures and inputs for the architectural practice: they take all the ingredients in their possession as they are and, at the same time, as they will be when composed together at the right moment and in the most proper of ways. Indeed, if one makes them explain how they design, they may quote Carlo Emilio Gadda as he tells how a *risotto alla milanese* should be prepared – how there is no other way to prepare it'. Giancarlo De Carlo, "Per giudicare l'architettura," *Parametro* 147, no. 5 (June 1986): 6.

Cappai, Segantini, "La cultura materiale nella costruzione della casa a Venezia,"

AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), *Plico di appunti A*.
 Vedi anche AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), *Plico di appunti B*.

38 Contenuto dell'offerta – Fregnan, 6.

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AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), Contenuto dell'offerta – Saffa, 22-23 [henceforth Contenuto dell'offerta – Saffa]. As Pastor wrote in 1993, this 'pure technicity' opposed the character of most contemporary housing in Venice, particularly Sacca Fisola. More than half of Sacca Fisola, managed by other associations and private groups, was characterised by linguistic chaos and formal 'commonplaces'. Pastor partly excluded Duilio Torres' 1940s I.A.C.P. scheme from this critique. The project allegedly tried to interpret the traditional architectural language as a form of popular culture and the notion of 'modern Venetian-ness' as a 'principle which aimed at constituting both proximity to and distance from history', in opposition to a complete immersion within it. See: Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 31-37.

40 Manoscritto relazione, 2.

41 The concrete for these walls was poured in situ. AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), Relazione tecnica, 8-9 [henceforth Relazione tecnica]. The façade elements would be assembled on site, with an extruded polystyrene film separating them from the concrete structure. The Cappai Mainardis fonds contain a dossier which apparently came from architect Gian Paolo Mar's atelier. Within it, one finds technological details for a housing scheme with a constructional system which is analogous to that adopted by Cappai, Mainardis and Pastor: reinforced concrete walls and prefabricated concrete façade panels similar to those adopted by the three architects except for the indentations under the windowsills. In a cross-section, a graphite drawing, possibly by Cappai, Mainardis or Pastor, transformed Mar's cornice solution, which did not feature the prefabricated gutter, into the more complex one designed by the three architects. See: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), Fascicolo "Studio architetto Mar. Tipologie edilizie".

42 Contenuto dell'offerta – Saffa, 24, 30.

The P71 system granted water and air tightness in all vertical joints. It was made of three PVC elements: two 'gouttière' profiles embedded in the panels, functioning as tracks, and a 'clé' profile which provided water tightness and was

	assembled during construction. With this system one could avoid the use of in $situ$ sealing.
44	AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), <i>Relazione tecnica</i> , 8-9.
45	Contenuto dell'offerta – Saffa, 24.
46	Contenuto dell'offerta – Fregnan, 4. '[] with a technical-constructional purpose, the joints marking the daily layers of plastering, were framed with Istrian limestone bands or, even more simply, with plaster of different colour'. See: AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165, (NP070083), Corpo 30.
47	'Or, to put it simply: what is achieved here is a direct assonance between architectural forms produced by a dry constructional <i>ratio</i> – a prefabricated system of industrial production – and the forms of the Venetian tradition []'. Pastor, "Costruire a Venezia," 59.
48	The need for flexibility was satisfied on three levels: dwellings could be personalised as they were inhabited; the percentages of unit types could be changed as time went on or during the private negotiation, without needing to transform the overall structural and formal outline. See: <i>Contenuto dell'offerta</i> – <i>Saffa</i> , 28-29.
49	Manoscritto relazione, 27.
50	Manoscritto relazione, 27.
51	AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 164 (NP070083), loose sheet.
52	Manoscritto relazione, 5.
53	AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083), <i>Relazione del programma definitivo per il Programma Straordinario di Edilizia Abitativa</i> , Assessorato all'Edilizia Convenzionata del Comune di Venezia (Venezia: 1984).
54	The fact that Cappai, Mainardis and Pastor's project did not exceed the maximum construction cost allowed demonstrates the quality of the competition brief indications, which had encouraged the adoption of building industrialisation systems. Gregotti's 'technologically traditional' scheme also adopted prefabricated elements, although these were more conventional from a constructional and formal point of view. See: Cappai, Segantini, "La cultura materiale nella costruzione della casa a Venezia," 98-100.
55	Venetian City Council deliberations no. 1507 and 1508, 17 April, 1984. AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 162 (NP070083).
56	With engineers Franco Geron, Walter Gobbetto, Aldo Fanchiotti and Roberto Drigo. AP Iuav, Cappai-Mainardis 2. Attività professionale/1/095, Busta 165 (NP070083), <i>Corpo 30</i> .

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(Fondazione Giorgio Cini, Venice, 26 March - 13 June, 1999), ed. Marco De Michelis (Milano: Skira; Venezia: IUAV, 1999), 31. 58 De Michelis, "Disegnare, pezzo a pezzo, il futuro," 35. 59 De Michelis, "Disegnare, pezzo a pezzo, il futuro," 39-41. 60 De Michelis, "Disegnare, pezzo a pezzo, il futuro," 42. 61 And by Giuseppe Samonà before him. See: Pastor, "Progetti e costruzioni a Venezia nel dopoguerra," 37. Massimo Cacciari, "Introduzione," in De Michelis, Venezia. La nuova 62 architettura, 8. 63 European Parliament. "Decent and affordable housing for all. European Parliament resolution of 21 January on access to decent and affordable housing for all," Official journal of the European Union 64, C456 (10 November 2021): 145-160. See also: Federica Fava, Laura Fregolent, "Report dal fronte casa. Storie, quantità e prospettive della residenza pubblica a Venezia," Archivio di studi urbani e regionali XLX, no. 125 (August 2019): 95, 97-98.

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ABSTRACTS: SERBIAN

ČITANJE I IZGRADNJA VENECIJE, 1984. KAPAIJEV, MAINARDISOV I PASTOROV CASE POPOLARIKAO MATERIJALNA KULTURA.

Francesco Maranelli

Osamdesetih godina prošlog veka Venecija je predstavljala jedinstvenu laboratoriju za proučavanje odnosa savremene arhitekture i istorijskog grada, što i danas predstavlja kritičnu tačku. Arhitektonski projekti ovog perioda su dragocena svedočanstva o načinima čitanja istorijskog konteksta i građenja u njemu. U februaru 1984. četiri arhitektonske firme dostavile su dokumentaciju traženu na konkursu za vanredni stambeni program Venecijanske opštine, a koji se tiče izgradnje četiri stambena projekta na teritoriji Venecije. Ovi planovi su bili među prvima koji su se nakon Drugog svetskog rata ticali stambene izgradnje, a da je njima upravljala opština. Na osnovu analize arhivskih dokumenata, ova studija se fokusira na projekat arhitekata Kapaija, Mainardisa i Pastora, koji je predložio čitanje grada i njihovu interpretaciju stanovanja kao izraza "materijalne kulture". Osim formalnih analogija, odlučili su da strukturiraju svoj projekat oko uporne materijalne kulture koja je u osnovi stambene izgradnje u istorijskoj i savremenoj Veneciji. Shvatajući materijalnu kulturu svog vremena kao neodvojivu od građevinskog tržišta, usvojili su moderne tehnike industrijalizacije zgrada. Pošto je grupa izabrana da izgradi tri šeme, njihov teorijski napor je na kraju usklađen sa epizodom stvarne prefabrikacije unutar istorijskog centra ostrva.

KLJUČNE REČI: VENECIJA, ISTORIJSKI GRADOVI, NASLEĐE, SOCIJALNO STANOVANJE, MATERIJALNA KULTURA, INDUSTRIJALIZACIJA, PREFABRIKACIJA