THE SCARPA TABLES FOR IUAV

edited by Valeria Tatano

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Università Iuav di Venezia

The Scarpa tables for Iuav
edited by Valeria Tatano
ISBN 9791259530721

This book was published thanks to a university grant supporting research.

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Publisher
Anteferma Edizioni Srl
via Asolo 12, Conegliano, TV
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First edition: December 2024

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Teaching at the drafting table

I, who had him as a professor when there were still drafting tables in the Institute, remember him as a man of few words, ready to inspire with images, sketches, notes.

Scarpa had an almost religious respect for the drafting table, evidenced both in the "rule of life" underlying the care of his pencils and the choice of the most appropriate papers, and in his recommendation to work at the table and on drawings every day, recalling Leon Battista Alberti, according to whom "*nulla dies sine linea*".

With regard to drawing instruments, he urged the students to use objects of "the best quality because only then can you learn to draw well" and could even go so far as to give instructions on which brand of black graphite pencils to use. He always used wooden pencils because of the lightness of the object, which had to be forgotten in his hand as one forgets their vocal cords. So he always urged his students to use them, joking that they would remember him as "the one who taught them how to sharpen pencils".

For Scarpa, drawing has a precise role as a tool: "I want to see and therefore I draw; I can only see things if I draw them". So I think of his drawing as a slight screen for his design method: because what he says is for him the condition for doing.

Semi, F. (2010), A lezione con Carlo Scarpa, Cicero, Venice, p. 41.

The new Tables

In her book *I tavoli Scarpa per Iuav*, Valeria Tatano reports on a Venetian episode that goes beyond the design of a single design artefact, the drawing tables designed by Carlo Scarpa for the Venetian University Institute of Architecture, now Università Iuav di Venezia.

The tables have been designed and created since the 1970s for the historic venues of the former Tolentini Convent and Ca' Tron. These tables are a response to the practical needs of an academic environment, an affirmation of a way of designing, and also represent a modular and adaptable design project, reflecting a rationale on the use of space and working tools.

Scarpa's intention was to create a standard table for drawing on A0 size sheets that would be able to simultaneously accommodate three people, and this choice met a precise need for space and functionality. The structure of the tables is simple: with a length of 181 cm and a sturdy table top, the tables could also be positioned on the short side vertically, thus becoming a versatile support for hanging drawings. For generations of Iuav students, they have provided the decor and backdrop for the revision of projects, exams and theses. Given the structural stability that enables the tables to be stacked in a slightly staggered manner, resulting in a great saving of space, the tables display a great versatility that makes them valuable and part of the Iuav landscape to this day.

Scarpa's design revolutionised the way of designing, which had formerly been delegated to small technograph tables, where people drew while standing or sitting on high stools.

The Scarpa table extended the use of the parallel line to all Iuav architects.

The T-square of the English style, made of off-centred hammered wood, although very functional and balanced, is not well suited to the somewhat imperfect edges of the tables used by students.

In contrast, the Scarpa table permitted the use of portable parallel rulers and even the most advanced tools of the time, such as the fabled American parallel rulers, the Mayline Parallel Bars, equipped with ball bearings that meant that the Rapidograph ink did not smudge on the tracing paper.

Nowadays, with the arrival of digital technologies and the widespread use of devices such as computers and tablets, the interaction between architects and their workspace has

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1-2 The new format of Scarpa table measures 80 x 120 cm to accommodate two people, instead of three as in the original design, in a configuration that reflects the changing needs of the contemporary studio. Photos: Luca Pilot, Iuav.

changed profoundly. There is a clear indication that the A0 format sheets on which Scarpa's tables were sized are no longer used, while the adoption of digital formats considerably reduces the space needed for control and design.
This is why we changed the canonical size of the Scarpa table. To optimise space and adapt to the new way of working, the existing tables, commissioned from 2023, were redesigned, resized and adapted. The new proposals measure 80 x 120 cm to accommodate two people, instead of three as in the original design, in a configuration that reflects the changing needs of the contemporary studio.
Initially designed on a width of 101 cm, the A0 sheet is no longer necessary, and has been decreased to 80 cm – the maximum measurement of an extended arm – in order to reach the opposite edge of the table when seated, taking into account that the arm span of an average person according to Brugsch's brachial index is 82.9 cm.
The width of the tables ranges from 180, suitable for 3 persons, to 120, for 2 persons, based on a width of 60 cm per person.
The expansion of the Iuav University's study spaces and the ongoing adaptation of the working tables show how Scarpa's original approach is still relevant today, and not only confirm the far-sightedness of Scarpa's original design, but also underline its versatility.
The tables made from a system of iron tubes and okumé panels retain their primary function and still offer potential for transformation and reinterpretation of the format. Therefore, the Scarpa idea is resistant to time and the transformations of working techniques, adapting itself naturally to new demands, in a dialogue between past and future that is surprisingly topical and clearly marks the identity and spirit of Iuav.

Benno Albrecht
Rector of Università Iuav di Venezia

Introduction

This text was born out of a personal curiosity and developed through research that involved different interlocutors along the way, each of whom brought some original element into the work and contributed to the final result.
This is an open narrative to which other voices could be added, because the topic addressed, the table designed by Carlo Scarpa for Iuav University, still presents unknown aspects, the knowledge of which could contribute to a better understanding of the history of an object apparently far removed from the complexity of forms and relations between materials that characterise Scarpa's work, yet still able today to respond to the various and changing demands of its many users, resulting in its constant presence in the spaces of the Venetian university for over 50 years.
Born as a surface on which to draw freehand, the Scarpa table quickly became a work table, lectern and desk, expanding its functions over time and adapting to the changes in teaching and in the way of understanding and developing design, within a "university of design" that today articulates that term in architecture and city planning, fashion design and multimedia arts, industrial design, theatre and the performing arts. Distinguished by a formal, essential nature that balances the simplicity of the materials used with the craftsmanship employed to assemble them, it has increased in functionality, adapting itself to ex cathedra lessons and workshop classes, not to mention W.A.Ve., a form of teaching that involves a temporal and mental immersion in design, and that for weeks transforms that surface into an autonomous and self-sufficient boat that will land on the shore once the project is completed, becoming its exhibition backdrop.
The Scarpa table is a place of learning where the physical proximity between teacher and student creates the right distance to foster a system of relationships that underpin the pedagogy of design that has its moment of direct exchange "at the table". But it is also a place of social interaction where nearness nurtures sharing and the habit of teamwork, an operating method that students will put into practice once again in the working world.
It overcame the challenge of in-class and remote classes in this difficult period, connecting students in the classroom with distant classmates, but above all with its generous size it avoided

the loneliness of the forced distancing of the "individual workstation". With two modern materials such as steel and plywood, and an unusual dimensional choice for a table that was originally intended to fit into a university with limited space, as was the number of people attending, the Scarpa table has become a constant presence, offering itself to a variety of experiments of use that have almost always seen it as the winner, even though its durability has been severely tested.
This book tells the story of the tables and their long presence in the university through the voices, experiences and research of those who live and work at Iuav.
My opening text reconstructs the origin of the tables and their continuity over time, Massimiliano Condotta introduces us to the world of steel tubing and Rosaria Revellini to that of plywood, recounting the beginnings and fortunes of the two materials, while Margherita Ferrari takes us inside the artisanal realities that continue to make it possible to produce objects and projects that combine craftsmanship, design and architecture with traditional know-how.
Mauro Maiotti sketches a personal and operational account of the tables, and Umberto Ferro and Luca Pilot do the same through their eyes as photographers.
Finally, Enrico Calore, Marco Crosato and Eva Jervolino bring students' feelings and experiences to these pages, rendered in a visual narrative that becomes a journey recounting life with the Scarpa tables.

Valeria Tatano

THE SCARPA TABLES FOR IUAV

Valeria Tatano[1]

Artfully crafted

Those who have studied, taught or worked at the Iuav in recent decades, living in the spaces of the Venetian university, know that classrooms, studios and offices are almost always inhabited by "Scarpa tables", the name the Iuav community[1] has given to the tables with a steel tube structure and a wooden top of which there are numerous variants, differing in the colour of the supporting parts, the type of top and the dimensions, but always identified as "Scarpa tables".

As flexible as hardly any other piece of furniture has ever managed to be, they are the tables on which lectures are attended, drawings are made, models are produced and revisions are made among papers, books and computers, but they also serve as lecterns for lecturers and as surfaces for meetings, conferences, academic senates and any other kind of activity that can take place in a university. They are placed in professors' studies, in the workspaces of administrative and technical staff, in the offices of department, research and academic directors, where they replace the traditional desks and the hierarchical logics often implied by their diversity of size, materials and forms in workplaces.

They have encountered pencils, Indian ink pens for drawing on transparencies (the legendary Rapidographs), pins to anchor sheets of paper, portable parallelographs, not to mention cutters, awls and hammers.

They are table tops, and when turned on their sides they become walls for displaying project exhibits during graduation sessions, they are elements that can be used to construct exhibition routes for shows and workshops, and when stacked they become sculptural fans that free up space, creating new conformations.

1 Professor of Architectural Technology, Università Iuav di Venezia

In their formal simplicity, combined with a determined resistance to time and the unexpected, they have accompanied thousands of students throughout their studies and are an unequivocal testimony of how Carlo Scarpa is still a fundamental presence for Iuav and its community.

Yet there is no trace of the origin of the Scarpa tables.

In the archives of university projects and documents there is no hand drawing, not even a sketch or description, so much so as to cast doubt on the widespread certainty that links its genesis to an idea of the architect Carlo Scarpa, who was born in Venice on 2 June 1906, died in Sendai on 28 November 1978, and was a professor at the University Institute of Architecture in Venice, of which he was Director from 1971 to 1974.

This lack of authenticity, but certainly not of clues, was evident in 2020 when the need arose to acquire new tables for Ca' Tron, one of the Iuav campuses that houses classrooms, offices and research facilities.

The tables were needed for the new layout of the Sala Camino, a large room on the main floor overlooking the Grand Canal, long used as a classroom. With the redevelopment the building has been subjected to in recent years, in particular the refurbishment of the roof and façade, the former Aula A5 was converted from a teaching space to a conference room for meetings and seminars[2] [PHOTOS 30-35].

Specifically, the Venetian-style terrazzo floor was refurbished, employing ancient artisanal techniques involving a long sequence of operations necessary to heal the wounds inflicted over the years by extensive traffic, preparing it for future natural wear and tear. The work restored clarity to the design and colours of the floor, and prompted consideration of a layout that would allow an overall view of the room.

It was thus decided to opt for transparent tables made of glass or plastic that could be placed side-by-side to create a broad work surface, but the search turned out to be unsatisfactory, especially since transparent tables are often objects with a great formal "character", which are difficult to use in large numbers as we needed them for our function. It was thus almost natural to think of a variant of the Scarpa

table, maintaining its structure and replacing the wooden top with glass, studying a suitable solution for their connection, starting from the original drawings.

Yes, but how exactly are the Scarpa tables made? And who has the drawings?

Iuav's technical office does not have any project drawings, yet it acquires the new tables to replace the damaged ones, which are replaced only after they have undergone various maintenance operations involving repainting the frame or installing new wooden tops, ruined not only by the normal wear and tear of time but also by cutting/engraving/nailing/gluing and many other activities that the transformations of the university's curriculum have brought about, not only in its educational objectives but also in its spaces[3].

Yet while no original documentary material is available, the tables have been constantly present in the university, with a continuity that has alternated between replacements, maintenance and renovations, made possible by a knowledge handed down drawing on the one hand on the memory of the technical office staff, and on the other on that of the artisans who had followed their production since their conception. And it is precisely the constructive wisdom of the *craftsman*, he who "conducts a dialogue between concrete practices and thought"[4], that has kept alive the re-edition of an *artfully crafted* object.

Starting from these elements the history of the tables has been reconstructed, also relying on the memories of those who knew and worked with the professor, with accounts that in the case of Carlo Scarpa's life verge on the legendary because the more than 40 years that separate us from his death are rich in studies and research but also in anecdotes and stories linked to the desire of the many who knew and worked with him to keep his work alive[5].

This narrative has many gaps, which perhaps others will fill. Our intention is to leave a trace of the present of an "object" that for half a century has seen thousands of designers, professors and students use its surfaces for drawing, sketching and discussing, building a strong bond with the Iuav community.

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1-2 Architecture and lecture hall for lessons on theory at the campus of the Regio Istituto Superiore di Architettura at Ca' Giustinian, on the San Trovaso canal, in 1934. The photo belongs to an official collection of the Venetian photographer Giacomelli, who took pictures of the palace's rooms after the renovation work commissioned by Guido Cirilli, director of the Institute. In the album, now kept in the Iuav Project Archive, the rooms of the first campus of the Royal Institute are illustrated, with the classrooms set up for the various teaching functions. Source: Iuav Project Archive.

We do not have a firm date for the appearance of the Scarpa tables, but it can be assumed that they were designed at the beginning of the 1970s and that they replaced the previous tilted drafting tables, coinciding with a time line that saw the convergence of student protests in 1968, the university for the masses and a new project for academic reform.

The Graduate School of Architecture of Venice was established in 1926 on the initiative of Giovanni Bordiga, president of the Academy of Fine Arts[6]. At the campus of Ca' Giustinian, along the San Trovaso canal, lessons on theory were held in the tiered lecture hall set up with the long benches behind, those for drawing in the classroom with the plaster casts used for copying real objects, those for architecture in the classroom with the adjustable tables for architectural drawings[7] [PHOTOS 1-2]. Each class had its own dedicated space and equipment[8], a condition that would be put to the test by the growing number of students for whom the original location became too small, leading to the Institute's relocation to the former Tolentini Convent[9] in the early 1960s.

The process of identifying the location and finalising the transfer of activities was not a short one as the monastery complex required major works, entrusted to Daniele Calabi and Mario Bacci, which lasted until 1964, when all academic functions became operational in the new location. In addition to the restoration work on the convent and the reorganisation of the spaces, it was also necessary to think about new furnishings, and an initial commission was issued in 1962 to Franco Albini[10],who suggested the purchase of 300 tablet chairs, although some members of the board of directors asked for a more general plan for the furnishings so as to avoid separate supplies[11].

In 1963 Calabi and Bacci wrote to the director of the Iuav to inform him of the progress of the work and the expenditure to be made, making a specific request for the furnishings:

> [...] For the use of the premises themselves during the coming seminar periods, however, we consider it necessary to order the following equipment, which also requires the completion of some finishes and systems (lamps, etc.).

a) 300 or 400 drawing tables for students (in addition to the existing 130) with their stools;
b) 30 or 40 drawing holders, 14 drawers with their keys, Olivetti type or similar;
c) 200 or 300 chairs, possibly with tablets, for the classrooms;
d) some shelving, cabinets, coat racks and the like[12].

The sudden death of Daniele Calabi in November 1964 prevented the project from being completed, and it was taken over by Mario Bacci in collaboration with Egle Trincanato.

The situation that the archive photos show us regarding the organisation of the furniture in those years is very heterogeneous: adjustable trestles with wooden shelves occupied the dining hall, used as a drawing room [PHOTO 3], between 1965 and at least until the student protests of 1968[13], which became the great hall the following year, while the classrooms are furnished with metal chairs with tablets designed by Albini[14].

The years of protest, which at Iuav began in 1967 with an occupation that lasted 100 days[15], were animated by debates and discussions that remained respectful of the spaces and furnishings. When the occupation was over, "in the survey carried out to check the damage, everything appeared in order, the walls white, intact. There was a great respect for the place, not so much the dining hall as the great hall, the hub of university life. It is with this that the large banner interacts, cleverly arranged on the back wall, stretched between three ladders: an installation in which the quoted phrase takes on an assertive, almost axiomatic tone: 'Occupation is the only and current instrument of protest and research'. Among the architecture faculties, Iuav was the most open to teacher-student dialogue, an exemplary '*utopia*'. But after introductory seminars and theoretical co-management, occupation – denying a state of affairs, a system whose survival depends on and is identified with the place and the activities that take place there – remained the only viable path, the most current, the one cast in its own time, the most concrete"[16].

The student protest was interrupted but then resumed in 1977 with other political and social undercurrents.

In the meantime, the university had changed, even in its numbers: in the 1968-1969 academic year the number of students enrolled at the University Institute of Architecture in Venice was 1,447, with 248 freshmen. In 1970 the freshmen rose to 1,288 and then 1,400 in 1973, bringing the total number to 4,355 students[17]. The years of rapid growth were those in which Carlo Scarpa directed the I.U.A.V., dedicating himself to teaching but also to developing various projects for the Tolentini campus, such as the entrance, on which he had been working since 1966 and which would be completed posthumously, the study for the roofing of the terrace that opened onto the cloister, and the fitting out of the great hall for the 1975 celebrations for the 30th anniversary of the Liberation[18].

In the photos of the arrangement of the former dining hall [PHOTO 4], the two red panels housing Emilio Vedova's large black and white work entitled *Scontro di situazione* conceal the wash house and form the backdrop to the mezzanine floor destined for the oratories, organised with tables made of simple trestles and wooden tops. Only in the pictures taken towards the end of the 1970s do the Scarpa tables appear in the same position [PHOTO 5], and they would remain there through new protests, assemblies, faculty councils even when the set-up was dismantled in 1996[19]. It would be Franca Pittaluga's project for the new library, realised between 2011 and 2014 in the east wing of the former convent, that would definitively replace them in the great hall with a long table equipped to manage the monitors and electrical connections, indispensable for the laptops and tablets that had once again changed the way of designing, but also of studying and "being" at the university.

That the tumultuous 1970s were the years of the new tables' debut is confirmed by a new source, not as far as the author is concerned, but in the form in which the clue came to us.

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3 The former dining hall of the Tolentini Convent was used as a drawing room in 1965, after restoration work was carried out to house the university campus designed by the architect Daniele Calabi. Source: Iuav Technical Office.

4 The former dining hall of the Tolentini Convent that has become the great hall, with Carlo Scarpa's 1975 layout. In the background are the two large red panels covering the washbasin on which Scarpa places the work by Emilio Vedova entitled Scontro di situazione. Source: Iuav Project Archive.

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5 Great hall of the Tolentini campus with Scarpa's layout photographed in the late 1970s. The photo includes the Scarpa tables on the mezzanine floor. The image is subsequent to the 1975 layout, in which the same tables were not present, as shown by the panel in the foreground (one of the three that Scarpa placed in the room, suspended in the air and connected by metal rods anchored to the walls) which bears the Gramsci quote "Get an education because we will need all your intelligence", in which the word "intelligence" was replaced with "aim" during the protests of the late 1970s. Source: Iuav Project Archive, from Cucciniello.

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6 Main floor of Ca' Tron, 1980s, arranged as a study space. Source: Iuav Photographic Laboratory.

7 Nardocci Classroom on the Tolentini campus (now home to the Cartography and GIS Laboratory cartography library), set up as a computer room in the 1990s. Source: Iuav Photographic Laboratory.

Giuseppe Davanzo, Carlo Scarpa's assistant from 1962 in the Interior Architecture and Architectural Composition course, later professor of Interior Architecture until 1991[20], ten years after retiring wrote a book set in the historical campus of the I.U.A.V. entitled *Quella notte ai Tolentini*[21]. It is a sort of mystery novel centred on the murder of Professor Rambaldo, a fictitious name given to Enzo Cucciniello, a professor of architectural technology engaged in research on accessibility issues who turns out to have been killed by a disabled student who held him responsible for his paralysis[22]. The story is an opportunity to recreate the small academic community of the institute at the time, with the power relations and inevitable tensions between the various characters, highlighting Cucciniello's efforts to get the planners, and above all his colleagues as teachers, to deal with the issues of overcoming architectural barriers. Among the many descriptions of the Tolentini campus given in the text, we find an indirect testimony for our research when one of the protagonists, Professor Serafi (Davanzo's fictional name), enters his office:

> He opens the door with difficulty. The key jams, as always because of the many copies made: one for each professor, assistant, expert, researcher who hangs around the office. The two grey tables that dominate the space are yet another edition derived from a 1970s design by Carlo Scarpa and freely adopted by the Institute's Technical Office, barbarised by the application of black or grey Formica to prevent the pornographic but always hilarious hieroglyphics left behind by generations of students as evidence of the boredom of many classes[23].

Davanzo's temporal location is reflected in the words of two Venetian craftsmen who worked with Scarpa for a long time and made the first tables for the university. They are Francesco and Paolo Zanon of Officina Zanon in Venice.

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8-9 International Design Seminar on the former Saffa area in Cannaregio, held at the Tolentini campus in the summer of 1978, with the Scarpa tables used horizontally to work on models and vertically to display the large drawings. Discussed by Franca Pittaluga, Raimund Abraham (8); Rafael Moneo, Gino Valle, Peter Eisenman and Carlo Aymonino (9). Source: Iuav Project Archive, from Pittaluga.

10-11 The 1990s on the Tolentini campus during the occupation of the "Panther" by the student movement, 1989-1990. Great hall set up for general meetings of the permanent assembly (10); Second floor: former C classrooms, set up for meetings and meeting spaces (11). Source: Iuav Photographic Laboratory.

In a 2010 interview, referring to a small wooden foot in the workshop, Francesco Zanon was asked whether it came from the Iuav tables.

> Yes, we made hundreds of these tables designed for the IUAV, even after the professor's death. We made a lot of them and the first ones had these wooden tops made by a carpenter-turner. When he died, we made them ourselves, still in wood. But they added significantly to the total cost of the table, so we remade them in Teflon, which is much cheaper. This [pointing] is the original foot, it was left here. Then came an item from the Olivetti shop that went under some shelves: it only came to me recently but it had been here among the professor's things for years. I went to the Olivetti shop recently because we have to fix it up, and I saw the shelf and thought of the little piece that went underneath it[24].

Hence if the clues lead to the artisans, it is from them that the testimony of that direct, continuous and untiring relationship between conception and production should be sought, typical of Carlo Scarpa's way of doing things, the Iuav tables being an example of constructive and functional consistency condensed into a single small object.

The tables were developed directly in the workshop, as recalled by Paolo and Francesco Zanon, who took over the shop inherited from their father, Gino Zanon[25], who worked with Scarpa from the 1950s, collaborating among many other works on the construction of the Olivetti store, the renovation of the Querini Stampalia Foundation and the Brion Tomb[26]. From the voices of the two blacksmiths, still in business today, and from their ancient manual skills, linked to gestures rooted in memory, we were able to listen to, and in the workshop observe in person, the operations that, starting from individual tubes cut to size, lead to the assembly and construction of the table's structure[27]. An example of craftsmanship that has survived the competition of large-scale mass production and which it is our responsibility to preserve, highlighting the peculiarities of a work that in each operation and in each step retains the sense of its making, in the meaning and necessity of the individual processes.

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12-14 Images of a small table with a metal frame and glass top designed by Carlo Scarpa, taken in the flat of Villa Valmarana ai Nani, in Vicenza, where the architect lived from 1972 until his death. The table is now owned by Tobia Scarpa. Photographs by G. Pietropoli.

Anatomy of a table

The Scarpa table for Iuav is a designer object, although it cannot be called a "design" object.

It is recognised for its value and quality as the result of a design that created a functional and "beautiful"[28] element, replicable – first and foremost by its trusted craftsmen – like a mass-produced product, validated over time by those who have used it, and which has moved beyond the confines of academic spaces also thanks to its evocative capacity to recall the school and the time spent at the university. It is otherwise impossible to explain the many copies found in endless variations in the workspaces and homes of former Iuav students [PHOTOS 36-45].

This is not one of the bespoke, one-off pieces of furniture that Scarpa designed for his architectures, nor of the designer objects conceived for industrial production[29], including a wide range of tables[30].For example, despite using the same materials, it has nothing in common with the Doge table, designed for Casa Zentner in Zurich and put into production for a wider market as early as 1968, replacing the original wood and marble top with glass[31]. The drawn and brushed metal bars, connected in the Doge table with burnished screws, as will be the case for the Sarpi table of 1974, possess a figurative strength that makes them absolute protagonists of the space, so much so that at Casa Zentner when not in use the chairs that go with the table are kept separate from it, placed against the side shelves to leave the pedestal and top clearly visible[32].

The Iuav table is essential and rigorous, its archetype possibly being traced back to a small table that Carlo Scarpa designed and had made for himself, depicted in the images of his home at Villa Valmarana ai Nani in Vicenza[33], where he lived from 1972 until his death [PHOTOS 12-14][34]. That same table is now owned by Tobia Scarpa, who remembers "always" seeing it in his father's house[35] [PHOTOS 15-19].

The professor had it made with "plumber's" pipes, using curved fittings to connect the glass top, lifting it from the base of the structure, a technology reminiscent of the chair that Mart Stam experimented

with in 1925 using gas pipes connected by flanges and that would lead to the definition of the S33 the following year, the tubular steel "cantilever" chair that would go on to join the furniture that at that time exploited the novelty of Mannesmann seamless tubing[36], giving rise to the great season of modernist design[37].

The small table is made up of a few standard pieces that manage to construct an object of great elegance distinguished by the succession of horizontal lines of the tops, interspersed by the shadow created by the gap between the structure and the glass plate.

A rigour in form that is found in the Iuav table[38], composed of two parts: a structure of welded steel tubes[39], and a plywood top[40], with a finished size of 181×101 cm, and 72 cm in height[41], although over the years the university has requested different sizes for specific needs[42].

The structure is manufactured using cold-formed welded steel tubes with a diameter of 33.7 mm and a thickness of 2.6 mm[43].

The tubes are cut to the required dimensions, milled to obtain the recess that connects the three corner pieces, then turned, assembled and finally welded to build the structure the wooden top will be anchored to by means of screws inserted into holes in the tubes. Thanks to the milling of the pieces, the angle determined by the connection between the two horizontal elements and the vertical leg gives the table a discreet elegance, a detail reinforced by the material and colour contrast between the metal and the wood.

Initially the tubes were treated with a red lead coat that gave the structure a typical orange colouring, but today that coating, made by mixing lead-based minium powder with baked linseed oil, is impossible to use due to the toxicity of the lead, and has been replaced first by a sandblasting treatment with subsequent powder coating, and later by an even simpler black paint.

The first tables were also complemented by turned wooden feet, 2 cm high, which were soon replaced by Teflon caps, which were cheaper than the earlier handmade versions.

The choice of a plywood top makes the table lightweight, facilitating their movement for interior layouts and continuous reorganisa-

tions that are increasingly frequent in the classrooms of a school of design that today offers a wide-ranging curriculum, demanding total flexibility of classroom spaces and their furnishings.

Classrooms that host architecture students, but also fashion, design and theatre students, who no longer open just rolls of drawings on the tables but also fabrics and clothes, mock-ups and set designs, working with computers, scissors and cutters.

Tables that are islands, on which one can spend entire days, alone or in groups.

Tables that can be joined, doubling in width or length, creating inhabited landscapes, silent for exhibitions, noisy and messy during workshops.

Tables that demonstrate how democratic design can not only combine beauty and functionality, but remind us that engagement and the sharing of ideas are nourished by well-designed objects and spaces.

Tables whose longevity certifies the good fortune of the "product" and the satisfaction of the customer, who has experimented with dozens of different seating solutions over the years, but who has not found a replacement for this "object" that can also act as a "space", part of the history and identity of our university.

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15-19 Coffee table owned by the architect Tobia Scarpa, from the family home in Vicenza. It is a small table designed by Carlo Scarpa, with a structure made from water pipes and a glass plate. A standard 90° curved fitting and flange was used to create the connection to the top. Photographs by V. Tatano, November 2020.

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In the workshop

Photographic sequence of some of the processes involved in building the structure of the Scarpa table.

The images depict a series of operations necessary for the construction of the frame and were taken at the Zanon workshop in Venice.

The structure is manufactured using cold-formed welded steel tubes with a diameter of 33.7 mm (equal to 1 gas inch for gas pipes) and a thickness of 2.6 mm. The tubes are cut to the required dimensions, milled, turned, assembled and finally welded to build the table structure. The milling creates the recess for connecting the horizontal tubes, which is indispensable for fastening the three pieces of the corner.

A series of holes are drilled into the tubes that form the base of the plywood surface to allow them to be subsequently attached using flat screws.

20 Steel tubes.

21 Cutting and turning the pieces that will make up the structure of the rectangular base and the four feet of the table.

22 Milling the pipes at the point where they will be connected with the other elements.

23 Detail of the pipes ready to be joined.

24 Detail of the table leg placed at the base structure.

25 Detail of welding performed followed by filing.

26 The different parts are pre-assembled on the work table.

27 Welding of the contact points of the various parts.

28 Detail of the joint from an overhead view.

29 The completed table structure.

Photographs by the Iuav Photographic Laboratory and V. Tatano, March 2020.

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At Ca' Tron

Photographic sequence of the assembly of the Scarpa tables for the Sala Camino at Ca' Tron.

Tops and frames were transported by boat, separately, and the assembly of the glass plates was done on site.

Unlike the structure of traditional models, where the tube hole is left open as it is covered by the plywood top, for this version a steel disc was placed to close it, which is necessary to allow the glass top to be secured.

30 Transport of the crystal tops.

31 Preparation of the steel structures.

32 Application of glue (UV adhesive) to the steel disc.

33 Placement of the glass plate on the frame and using a UV lamp to fix the adhesive.

34 Detail of the completed fixing, with the steel disc fully visible.

35 Corner detail with the plate slightly detached from the structure.

Photographs by V. Tatano, May 2020.

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Outside Iuav

Over the years many former Iuav students have had copies of Scarpa's tables made with different functions, replicating shapes and materials in a manner faithful to the original, or betraying some of its principles.

These re-editions demonstrate the evident quality of the object, but also testify to the persistence of a strong bond with the school, the table – re-edited with the customisations necessary to cope with new functions – providing a sort of affective continuity.

A brief survey identified a number of examples that can provide a picture of the heterogeneity of the solutions adopted.

36 Staging for the exhibition Carlo Scarpa. Venini 1932-1947, curated by Marino Barovier, 29 August 2012-6 January 2013, organised as part of Le stanze del vetro on the Island of San Giorgio, Venice. Some of the vases on display were placed on the faithful replicas of Scarpa's tables, with a choice that combined two distinct areas of the professor's work in terms of functionality and chronology.

37 Architectural firm. The tables reinterpret the Scarpa model, unaltered in its steel structure, but adopting a black laminate top with a wooden frame.

38-39 A photographer's studio. Space for archiving materials is never enough and thus the tables become storage "areas".

40-41 Small table for the spaces of the ENI Enrico Mattei Foundation at Ca' Tron. Built by Officina Zanon, the structure is based on the Iuav version for the Ca' Tron conference room, modifying the measurements, adapted to the function of a tabletop in a conversation area, and some of the materials (the crystal and the metal of the tabletop fastening disc). The detail of the connection between the vertical and horizontal element of the corner demonstrates the care taken in its production. Photographs by Iuav Photographic Laboratory, 2020.

42-45 Domestic versions, functioning as dining table and kitchen peninsula.

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Notes

1 From its founding to the present day, Iuav has changed its organisational structure and name from Scuola Superiore di Architettura di Venezia [Graduate School of Architecture of Venice], the name under which it was founded in 1926, to I.U.A.V., an acronym for Istituto Universitario di Architettura di Venezia [University Institute of Architecture of Venice], to Università Iuav di Venezia in 2001. In this text, the abbreviation Iuav will be used to identify the university when not necessary to place it temporally.

2 I followed the work on Ca' Tron as the Rector's delegate for building and real estate, a position assigned to me by Professor Alberto Ferlenga for the duration of his mandate (2015-2021).

3 Obviously all these operations could be carried out without "harming" the tables, allowing even the most "daring" workshop operations to combine practical experience with respect for the school's furnishings.

4 Richard Sennett explores the world of manual labour, focusing on the intimate connection between the hand and the head, in his 2008 book L'uomo artigiano, Feltrinelli, Milan.

5 With regard to Carlo Scarpa, there is not only a rich bibliography on his works of architecture, furniture and design, but also texts that convey the character of the professor himself, describing his lively and complex personality and how this characterised his relationships with his clients and the people he worked with. These include the books by Guido Pietropoli, first a student and later a co-worker of Scarpa, who wrote two books that are both personal and professional narratives: Pietropoli, G. (2020), Carlo Scarpa 1968-78. Quasi un racconto and A fianco di Carlo Scarpa, Amazon Fulfillment, and a series of lectures given at Iuav collected by Franca Semi, who was Scarpa's assistant in the Architectural Composition course and later in his professional activity: Semi, F. (2010), A lezione con Carlo Scarpa, Cicero, Venice.

6 For a history of Iuav from its inception until the 1980s see: Zucconi, G., Carraro, M. (eds.) (2011), Officina IUAV, 1925-1980. Saggi sulla scuola di architettura di Venezia, Marsilio, Venice. On the teaching organisation from its beginnings to 1963: Carullo, R. (2009), IUAV. Didattica dell'architettura dal 1926 al 1963, Polibrass, Bari.

7 The organisation of the classrooms and its furnishings was captured by the photographer Giacomelli in 1934 and the images are collected in an album entitled La sede del Regio Istituto Superiore di Architettura a San Trovaso, 1934 and today kept in the Iuav Project Archive.

8 To "breathe" the air of those years see Franco Mancuso's fine essay for the day of studies on Bruno Zevi: Mancuso F. (2019), "A Venezia, collegando lo scavo scientifico sull'antico al lavoro sui tavoli da disegno", in Rossi, P.O. (ed.), Bruno Zevi e la didattica dell'architettura, Quodlibet, Macerata, pp. 119-141.

9 For a detailed history of the Tolentini campus see: Brodini, A. (2020), Lo Iuav ai Tolentini: Carlo Scarpa e gli altri. Storia e documenti, Firenze University Press, Florence.

10 Franco Albini arrived at Iuav in the 1949-1950 academic year as a professor of Interior Architecture, Furniture and Decoration and remained there until 1964.

11 Brodini, op. cit., p. 56.

12 Letter of 18 January 1963, [AD Iuav, S VI/1.1-6], quoted in Brodini, op. cit., p. 140.

13 On 1968 at Iuav: Carraro, M., Maguolo, M. (ed.) (2012), "Cronache dai Tolentini. Studenti, docenti, luoghi 1964-1975" in Giornale Iuav 110 and the monographic issue of the journal Engramma no. 156 May/June 2018, "Il 68 che verrà", Edizioni Engramma, in particular Maguolo, M., Masiero, R. (2018), "Iuav 68. Labirinto politico. Un saggio per immagini".

14 In 1958 Franco Albini designed a chair with a tablet made of painted iron tubing, with a seat and backrest in plywood, produced by the Poggi company for Iuav.

15 Maguolo, M. (2011), "Gli anni tempestosi", in Zucconi, Carraro, op. cit., pp. 177-188.

16 Maguolo, Masiero, op. cit.

17 Maguolo, op. cit., p. 185.

18 The design and construction phases of the great hall are well described in Brodini (2020), op. cit.

19 The date is given in Monaco Mazza, L., Reina, M.M. (2018), "Progetti per l'Istituto Universitario di Architettura nel convento dei Tolentini", in Ferrighi, A. (ed.), Venezia di carta, LetteraVentidue Edizioni, Siracusa, pp. 142-145.

20 Giuseppe Davanzo is the author of the project for the renovation of the Iuav Tolentini library between 1987 and 1988. He used a smaller than usual version of the Scarpa tables for the furnishings, with a black laminate top and wooden frame.

21 Davanzo, G. (2001), Quella notte ai Tolentini, Edimedia, Treviso.

22 Enzo Cucciniello (1933-2013) was a professor in Building Science and later in Architectural Technology, director of the Materials Testing Laboratory and author of the cultural project called Venezia per tutti, and of ArchEtica, an initiative inspired by the guiding principles outlined by the National University Conference of Delegates for Disability (CNUDD), launched in 2000.

23 Davanzo, op. cit., p. 13.

24 Video interview by Alba Di Lieto of Francesco and Paolo Zanon, at the Officina Zanon Gino di Paolo e Francesco Zanon in Venice, on 22 March 2010. The interview is available in its entirety on the Palladio Museum website, at the link: http://mediateca.palladiomuseum.org/scarpa/ web/videointervista.php?id=9 (last accessed: 4 April 2021).

25 In the documentary Un'ora con Carlo Scarpa, a Rai Incontri production, edited by Gastone Favero, directed by Maurizio Cascavilla, 1972, Gino Zanon describes his collaboration with the professor in these words "He always gives us very difficult jobs, but we agree on the way to build and finish them", while a very young Francesco Zanon enthusiastically recounts the experience of being able to produce a truly artisanal

work where each element "is designed and built" as if it were a "unique piece".

26 For Scarpa, work in the workshop, as it was for work in the carpentry workshops, was not simply an activity of supervision and verification, but an operational and creative interaction with the actual makers of his ideas, which took place directly on the drawings, inserting new explanations in the designs, or sketching new descriptions. It is therefore not surprising that a group of drawings by Carlo Scarpa from the Officine Zanon, the result of this collaboration, was acquired in 2004 by the Veneto Region for the collections of the Castelvecchio Museum, further expanding its already vast archive.

27 A visit to Officina Zanon Gino in Venice was organised on 4 March 2020, which was attended by staff from the Property Management Service and the Iuav Photographic Laboratory, as well as architect Margherita Ferrari and myself, during which we observed the processes employed to build the table structure.

28 In a brief telephone interview on 15 January 2021, Valeriano Pastor, a professor at Iuav, of which he was Rector from 1979 to 1982, recalls that the reception of the tables by his colleagues was a "pleasant surprise". With an "elementary" solution that was as obvious as it was right, Scarpa outlined a new way of standing at the drawing table.

29 Bassi, A. (2014), "Carlo Scarpa architetto e designer", in Bagnoli, S., Di Lieto, A. (eds.), Carlo Scarpa, Sandro Bagnoli: Il design per Dino Gavina / Design for Dino Gavina, Silvana Editoriale, Milan, pp. 21-53.

30 The tables designed by Scarpa are collected in the publication: Various authors (2009), I tavoli di Carlo Scarpa alla Fondazione Querini Stampalia a Venezia, printed by Grafiche Antiga, Estel-Simon.

31 On Casa Zentner and its furnishings, see: Fornari, D., Jean, G., Martinis, R. (2020), Carlo Scarpa. Casa Zentner a Zurigo: una villa italiana in Svizzera, Electa, Milan, in particular the essay by Fornari, D., "Arredi fissi e mobili: dal pezzo unico alla produzione seriale".

32 "The importance of the table – due to the formal complexity of the pedestal structure and the material richness of the top – is emphasised by the arrangement of the chairs in barocchetto style: turned towards the shelves, to leave the view of the table unobstructed, except at mealtimes". In Fornari et al., op. cit., p. 116.

33 The architect Guido Pietropoli made me aware of the existence of the coffee table and the photos showing its presence at Scarpa's home in Vicenza.

34 According to Philippe Duboÿ the tables were inspired by the counters of the Rialto market. Duboÿ, P. (2016), Carlo Scarpa. L'arte di esporre, Johan & Levi, Monza, p. 203.

35 The information on and images of the table were received during a meeting with Tobia Scarpa in November 2020.

36 The process of manufacturing seamless steel tubes, later known as "Mannesmann tubes", was invented in Germany in 1885 and was to form the basis of furniture design from the 1920s onwards, with some famous pieces such as Marcel Breur's Wassily armchair of 1925 and the Cantilever chairs by

Stam (S33, 1926), by Breuer (B32, 1929, with the artistic copyright of Mart Stam) and by Mies van der Rohe (S533, known as "free swing", 1927), all produced by the company founded by Michael Thonet, who switched from using curved wood to curved tubular steel. See: Sala, N., Sala, M. (2005), Geometrie del design. Forme e materiali per il progetto, Franco Angeli, Milan.

37 Bradbury, D. (2019), Modernismo. Arredi, design e grafica 1920-1950, Electa, Milan.

38 The description of the production of the Scarpa table is taken from the documentation in the archives of the Iuav's Property Management Service and from discussions with the artisans Paolo and Francesco Zanon.

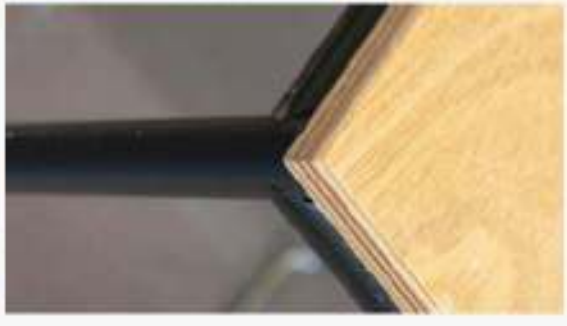
39 The description of the production of the Scarpa table is taken from the documentation in the archives of the Iuav's Property Management Service and from discussions with the artisans Paolo and Francesco Zanon.

40 Scarpa's material of choice was originally a blockboard known commercially as "Moralt", which was followed by plywood.

41 The indicated size corresponds to the dimensions of the frame and the dimensions of the panel, although in newer tables the measurements of the top have "increased" to 182×102 cm. As to the reason for the size of the tables, there are two versions: according to some it is related to the size of the plywood sheet used, which was produced in double the size of the table, allowing two tops to be made from each panel, without any scrap. For others, they were related to the size of the Schoeller card stock, which was very popular with the professor, so that two students could work on each table facing each other.

42 In 1992 the then Rector Marino Folin requested a quote for "the supply of 17 'Scarpa model' tables measuring 1.50×0.75 m and 5 tables measuring 0.75×0.45 m. These tables will consist of a metal frame painted matt black and a 20 mm poplar wood top covered in black laminate". Iuav archive document, ADIuav VI/4.1-2. The previous year, the university had purchased 40 "Scarpa-type" tables measuring 102×182×72 in height, with a black-coated metal frame and tops made of 19 mm okoum planking (Iuav archive document 21.03.1991).

43 The size of 33.7 mm corresponds to one gas inch, a conventional measurement invented to classify the diameter of pipes for the passage of fluids, different from the standard inch equal to 25.4 millimetres.



PORTRAITS

Massimiliano Condotta[1]

The steel tube

An ancient Chinese tale describes the life of a man of letters who chose to isolate himself on a mountain and build a garden

> [...] with his own secret place, a small bamboo grove that he could go to on his own. In the middle of the grove, next to a spring, lived the first bamboo he had planted, and over the years he had developed a strong attachment to that plant. He played the zither and conversed with the bamboo as it grew towards the light, learning the secrets of nature from it. But a terrible drought hit the country and one morning the man went to the bamboo with a sad face. The bamboo asked why and he explained that the only way to alleviate the drought that was killing everyone, humans and plants, was to get water from the spring across the ravine. But there was only one way to get there, only the bamboo had the necessary length to cross it. The bamboo thought about its long life, thought about the fact that it was the man who had planted it and cared for it all those years, and decided to sacrifice itself, transforming and continuing its life in another form[1].

The story underscores how the importance of tubular shapes has always been clear to man throughout the centuries, and in my view poses a relevant question: is it possible to consider the tube as an "artefact" resultingfrom the transformative processes of human activity or is it a "tool" to be used in production and artisanal processes?

There is no doubt that human beings throughout history have made use of pipes and tubes, at first finding it in nature, already shaped and

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immediately available in the form of bamboo, marsh reeds, branches or hollow tree trunks. In this condition, we can think of it as a tool, one that man uses, for example to convey water from one place to another, or as an instrument to produce sound, or even as a construction material used in the building of small shelters.

Subsequently, man began to handcraft pipes out of different materials, first out of clay and wood, and then into metal pipes and tubes.

The first metal pipes were made of lead. In Roman times, the *plumbari* (craftsmen who worked with lead [*piombo* in Italian], still today in the English language the plumber) started from sheets as long as the size of the finished product and rounded them around a cylindrical wooden core. To close and seal the gap that inevitably remained at the junction of the longitudinal joints molten lead or an alloy of lead and tin was poured.

An evolution of this technique consisted in casting the molten lead into a mould in which a cylindrical metal core was inserted to produce the desired diameter. This resulted in seamless pipes, obviously not perfectly circular, elliptical in shape, but still more regular than tubes made from hand-pieced sheets wrapped around a core.

From this moment in history, the pipe was no longer or was not merely a gift of nature to be selected according to size, length, and strength requirements, but a product of human activity, manufactured in various combinations of shapes and sizes, each designed for a specific purpose. Hence, the pipe could no longer be considered just a multifunctional tool, useful for multiple occasions and purposes, but for all intents and purposes became an artefact.

The industrial production of metal pipes would start much later, at the beginning of the 19th century, initially produced in cast iron and then in steel, in different sizes, diameters and thicknesses, and with different alloy qualities. A further breakthrough came in 1886, when the German brothers Reinhard and Max Mannesmann registered the world's first patent for the invention of a process to produce steel pipes and tubes using a wire-drawing process, not by bending, thus obtaining so-called seamless tubes. The process consists of transforming

a billet through the Mannesmann rolling mill into a hollow shell of limited length and high thickness. Subsequently, further stretching processes reduce the thickness while simultaneously increasing the length of the tube.

Modern production processes have introduced other methods and variants for the production of seamless pipes and tubes. Nevertheless, many of the production techniques currently in use are still derived from this original system. The hollow shell, still commonly produced using Mannesmann-type rolling mills, is processed while hot with a rolling-stretching mill (including the pilger mill) whereas the final dimensions are achieved with further processing (hot or cold) by means of a continuous mill or by means of a reducing and stretching mill.

From a performance point of view, seamless tubes and pipes have no localised weak points and are therefore highly resistant, making them ideal both for conveying liquids and gases at high pressures and for structural use. Industrially manufactured pipes and tubes therefore have a variety of uses. These obviously range from the plumbing and chemical industries to the use of tubes and pipes in the construction world, both as an element for erecting scaffolding and temporary structures in preparation for the construction of buildings, and as a constituent part of the building itself.

In this changed scenario, characterised by the industrial production of tubes and pipes, it is undeniable that they must be considered manufactured products.

Due to its construction characteristics, the seamless tube is also particularly suitable for bending. Its use has therefore spread to other sectors. "It was used as early as 1890 for hospital furniture, from 1919 for car seats of the Czech manufacturer Tatra, and in the Fokker workshops for aircraft seats from 1924"[2]. It was in this renewed context that Marcel Breuer, "then director of the wood workshop at the Bauhaus in Dessau, came up with the idea of using steel tubing for furniture construction, enthusiastically inspired by the solidity of his new Adler bicycle"[3].

In 1925 Breuer designed the Wassily chair, which went into production in 1926. It was precisely Mannesmann, after Adler's refusal, that supplied and bent the steel tubing used for the chair's construction. "The artisanal technique of bending tubular steel was [in fact] shortly afterwards revolutionised by the Mannesmann cold-bending process, which, using a series of solutions, avoided the flattening of the circular section during bending"[4].

At the same time, other experiments and chair designs were developed based on the use of bent steel tubing, exploiting its structural capacities of durability and at the same time elasticity. Thus were born the cantilever models, such as the *Kragstuhl* by Mart Stam, a cantilever chair known as the "cubic chair", or the *Weissenhof* chair (also called MR10 and MR20) of 1927 by Ludwig Mies van der Rohe and designer Lilly Reich, or such as the B64 *Cesca* of 1928 also by Breuer.

The steel pipe therefore entered the home:"Breuer thus initiated an aesthetic breakthrough in furniture construction, and invented a significant new branch of the industry"[5].

The economic and aesthetic model of this new sector was therefore industrial production: the seamless steel tube, manufactured in the desired size, length and diameter, curved to measure according to the designer's drawings, in painted, chromium-plated or stainless steel, became a refined industrial product and the protagonist of the design of the modern movement down to the design of the 1960s. Pipes and tubes thus had a new vocation alongside its original nature as a tool to support artisanal activities, a nature that nevertheless remained strong in the world of widespread architecture, in the hands of masons and plumbers. Where construction is still carried out in the tradition of local craftsmen, the steel tube is still an indispensable multifunctional tool in the hands of the artisan in adaptation and repair work.

This connection between the tube and craftsman-builder, and transitively between pipe and building and between pipe and city, is so strong and ingrained in popular culture that one could imagine pipes and tubes alone being used to configure an entire city. One thinks of Armilla, the city conceived by Calvino "which has no walls, no ceil-

ings, no floors: it has nothing to make it look like a city except for the water pipes, which go up vertically where there should be houses and branch off where there should be floors: a forest of pipes that end in taps, showers, drains, overflows"[6].

In depicting this city, like many other artists who have modelled it over time through paintings and sculptures, I imagine pipes branching off into space between straight stretches and curves to form loops, corners, narrowings and widenings, thus configuring formally different spaces where each one becomes an environment with a distinctive value: a use that is not improvised, but tailored to the specific need.

In the same year that Calvino published *Le Città invisibili*, in 1972, in their book *Adhocism* Charles Jencks and Nathan Silver theorise about this concept of adapting in a constructive and non-improvised manner. Adhocism "can also be applied to many human endeavours, denoting a principle of action having speed or economy and purpose or utility. Basically it involves using an available system or dealing with an existing situation in a new way to solve a problem quickly and efficiently. It is a method of creation relying particularly on resources which are already at hand"[7].

Only a year later, in 1973, musician Mike Oldfield released an album entitled *Tubular Bells*. It is a musical work (an LP, as vinyl recordings were called at the time) whose title and certain melodic parts of the composition were inspired by a handcrafted instrument in the recording room, tubular bells: an idiophonic instrument composed of a series of brass metal tubes of different diameters and lengths cut to the precise size necessary so that when struck and made to vibrate they produce exactly the frequency of the note intended.

Interestingly, *Tubular Bells* was the first album released by Virgin Records – now one of the world's major music labels – which was founded by Richard Branson specifically to release the Oldfield record that no record company wanted to produce. It all started with a recording studio put together in an "artisanal" manner, thus founding what we can consider the first "independent label" in history.

These were the early 1970s, a decade that expressed the need to integrate the consumerist model and industrial production with a reform of social culture and personal relationships. This context led to the reaffirmation of popular culture, of art as social commitment, of work culture. These concepts of the artisan are traits that we can synthesise and make our own:"the craftsman represents the special human condition of being engaged"[8].

The outcome of one's work should therefore be understood according to the meaning of the word "craft", a manual work, the result of a trade learned through practice, but not for this reason trivial or of little value. In this changed cultural landscape, tubes and pipes once again take on the value of a tool. Therefore not a tool custom-designed to perform a specific function to perfection, but rather a kind of flexible tool adaptable to multiple uses and for this very reason "creative": "getting better at using tools comes to us, in part, when the tools challenge us, and this challenge often occurs justbecause the tools are not fit-for-purpose"[9].

This way the tool contributes to the designer's creative process. "In both creation and repair, the challenge can be met by adapting the form of a tool, or improvising with it as it is, using it in ways it was not meant for. However we come to use it, the very incompleteness of the tool has taught us something"[10].

It was in this period and in this cultural landscape that Carlo Scarpa conceived the table design for Iuav, probably, according to a hypothesis described in the first essay "Artfully crafted" (Valeria Tatano), starting with the creation of an artisanal prototype whose frame was made from bent plumber's pipes, welded together, and elbow fittings. In the final version, the tubular steel structure of the table is even simpler: the tube is of the welded type, there are no curved parts, no fittings, just straight sections of steel tubing with a nominal diameter[11] of one inch, an external diameter of 33.7 mm and a thickness of 2.6 mm. The only "special" machining is reserved for the horizontal cross-pieces, which are milled in such a way that they can be connected and subsequently welded onto the four uprights (the table legs).

A simple but by no means trivial technological solution with contributions of the cultural temperament, the technological question and the tool-industrial product relationship. The use of welded tubing, which is more eco-friendly than Mannesmann-type tubing, was in fact a significant choice that influenced the simple and essential design of the frame, further reducing the production costs of a table that must indiscriminately support the work of students, lecturers and scholars and therefore be produced in large quantities. The technological solution adopted is thus the outcome of a process of simplification that took place creatively within moments of "artisanal problem solving", where the adaptation of the imperfect tool-industrial product – the welded steel tube – led to the production of a complete object that responds to functional, cultural and social needs: in practice, an "artfully crafted" object.

Notes

1 Excerpt from: Corrado, M. (2020), Architetture del dopo. Costruire con le piante, DeriveApprodi, Rome, p. 133.

2 Von Vegesack, A., Dunas, P., Schwartz-Clauss, M. (eds.) (1998), 100 capolavori dellacollezione del Vitra Design Museum, Skira edizioni, Milan-Geneva, p. 212.

3 Von Vegesack, Dunas, Schwartz-Clauss, op. cit., p. 212.

4 Ferrara, M. (2005), *Acciaio.Materiali per il design*, Lupetti editore, Bologna, vol.1, p. 70.

5 Von Vegesack, Dunas, Schwartz-Clauss, op. cit., p. 212.

6 Calvino, I. (1972), *Le città invisibili*, Einaudi, Turin.

7 Jencks, C., Silver, N. (1972), Adochism.The Case for Improvisation, MIT Press, Cambridge, MA, p. 9.

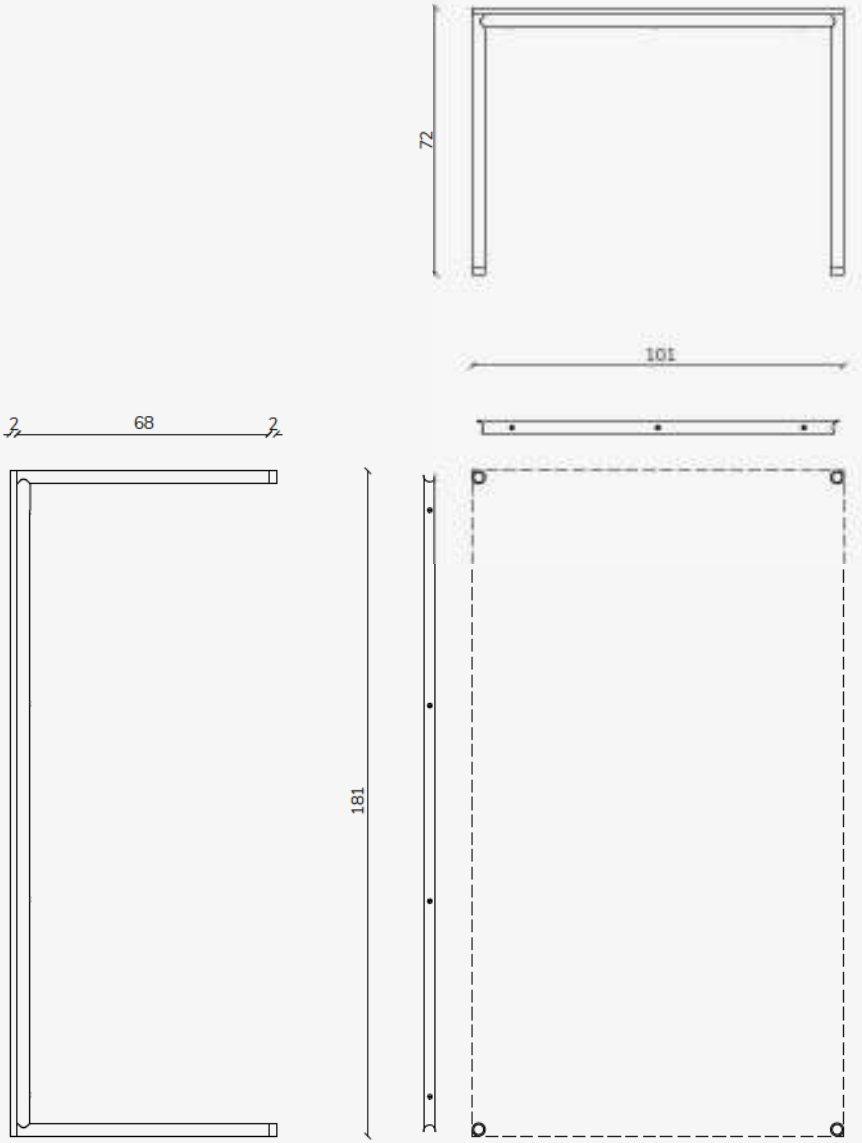
8 Sennett, R. (2008), The Craftsman, Yale University Press New Haven &London, p. 20.

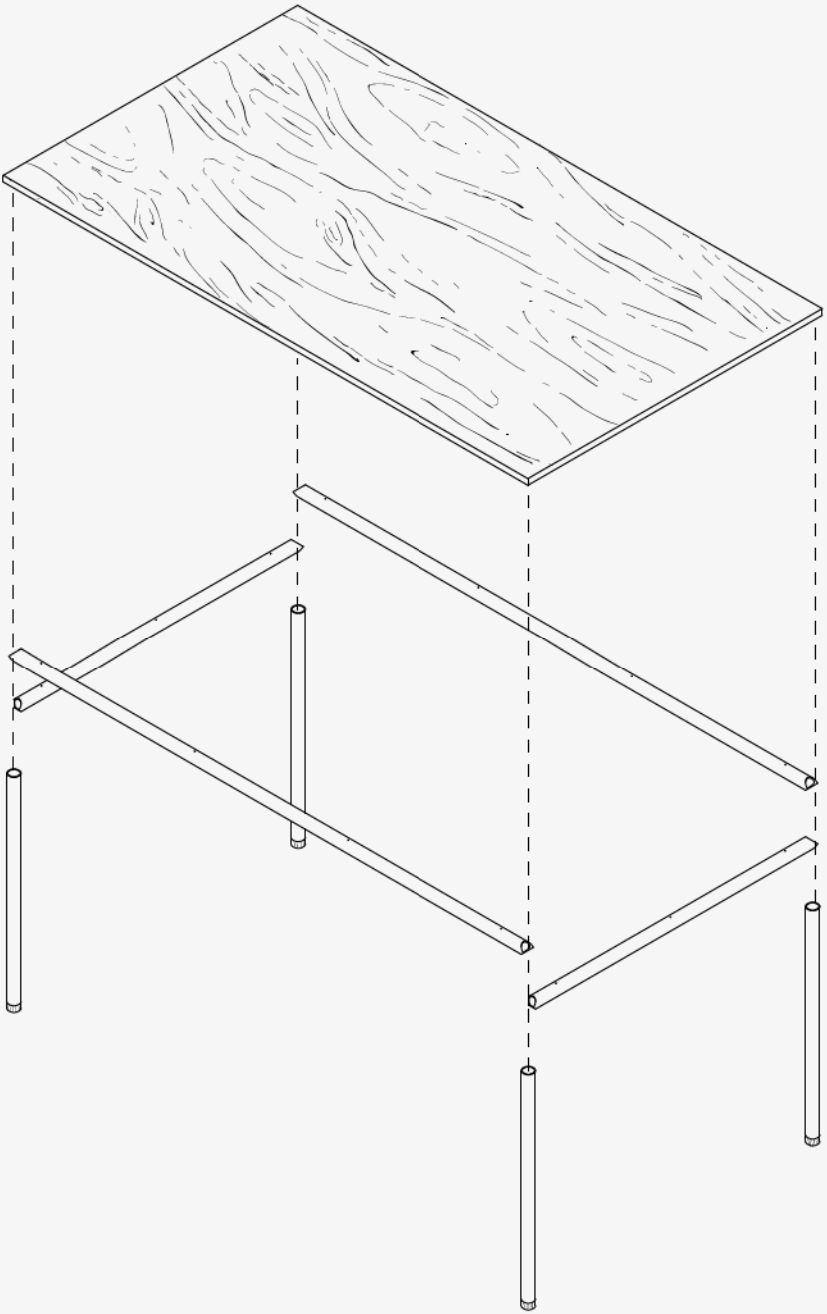
9 Ivi, p. 194.

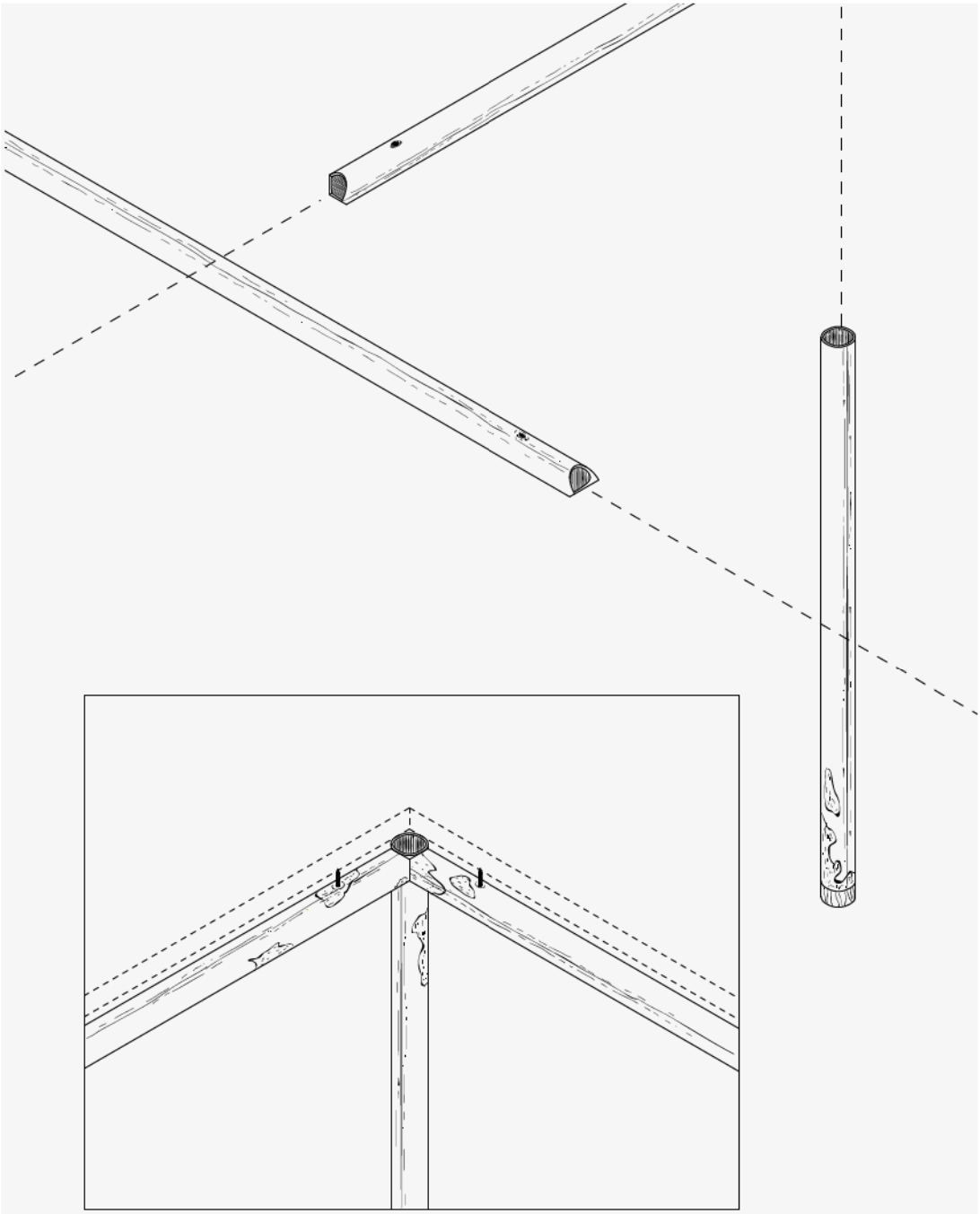
10 *Ibidem*.

11 The nominal diameter is a dimensionless indicator that, although expressed in millimetres or inches, does not indicate the external or internal diameter of the tube (and therefore this value is not used for plumbing calculations) but rather serves as a reference to identify the size of the elements that can be coupled in a steel pipe (such as flanges, valves, special pieces, etc.).

SURVEYS







Rosaria Revellini[1]

Wood-based

The top of the "Scarpa table" consists of a simple wood-based panel, which is a support, a "place" of learning and experimentation for several generations, as the signs of time often show throughthe slightly rounded corners or the grooves caused by the cuts.

It is difficult to pinpoint a precise date or specific work that identifies when Carlo Scarpa first started using this type of panel, but he would sooner or later employ such "modern" materials because he was a skilled researcher[1]. In fact, while wood-based products have a rather ancient history, it was only during the 19th century that they were increasingly used in furniture and architecture, but also in the naval, aeronautical and automotive sectors, thanks to the introduction of glues and industrial production.

The following paragraphs will explore the history of plywood, the material used to make the tops of the Scarpa table today.

From veneers to plywood: a brief history of compensato

Plywood belongs to the veneer family and is manufactured by overlapping several veneers that have been dried, sanded and cut in standard formats, of an odd number (minimum three) to ensure the symmetry of the panel and with a thickness varying between 1.5 and 4.5 mm, placed orthogonally to each other, glued and pressed. The Italian meaning of the term *compensato* derives precisely from its ability to

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"compensate" the tensions. In fact, such layering gives the panel excellent properties in terms of shrinkage and swelling as well as mechanical strength[2]. More specific performance is provided by structural plywood, although it is little used due to its high cost, and "marine" plywood, which was created for the nautical sector and is particularly resistant to humidity[3].

The sale and use of plywood in Italy is regulated by UNI 636:2015 and is classified according to wood species (generally spruce, Douglas fir, poplar, birch, beech, walnut, oak, rosewood, or teak and okoumè for marine plywood) and their respective durability, the type of adhesive (urea, phenolic, resorcinol glues), the type of use (structural or otherwise), the surface appearance and its composition.

Among the wood-based panels, mention must also be made of blockboards such as laminboard and Moralt[4]. Unlike plywood, these have a core composed of glued strips arranged edge to edge and sandwiched between two veneers. Such panels have considerable stability and rigidity and are very light. Strips of various sizes and generally of lesser wood species can be used for their construction, while birch or poplar wood is usually used for the veneers.

Until the second half of the 19th century, the most common term for plywood, or rather its "precursor", was *veneered* or *veneers*, thus defining the veneers used to cover furniture elements often made from less valuable woods – a practice in use since Ancient Egypt – or in any case to emphasise its nature as a material "derived" from solid wood[5]. It was not until the turn of the century that the term *three-ply*, *plywood panel* and *plywood* began to be used[6], the term by which plywood is universally identified today, although for a long time *veneer* and *plywood* were used synonymously.

Between the 18th and 19th centuries plywood was widely used for making furniture, especially in France and England and later in the rest of Europe and America. Thanks to the mechanisation of veneer cutting, an innovation introduced in the second half of the 1800s, there was a sharp increase in the plywood market.

These two centuries saw the first patents, the first in 1793 by the

English engineer Samuel Bentham from which we have an initial definition of plywood, i.e. a product obtained by laminating several veneers then glued together to form a thicker panel. Then there are the patents of the American John K. Mayo of 1865, according to which "The invention consists in cementing or otherwise fastening together a number of these scales of sheets"[7] arranged with grains running crosswise in order to achieve greater strength, and that of Gardner & Company of New York of 1872 for perforated plywood panels to be used for seating in railways and stations. America pioneered the production and use of plywood with the birth of the plywood associations. Here in 1905 the first example of a "prefabricated" plywood panel was presented at the Lewis and Clark Exposition in Portland, and in the same year the material began to spread worldwide as an industrial product. In spite of this American supremacy, in the late 19th and early 20th century it was the Russian company Luther that was the top producer of standard-size panels (482 mm × 482 mm and 482 mm × 610 mm) and curved and exterior panels using a "waterproof" adhesive.

Plywood architectures

During the 20th century plywood was used in the field of architecture for "its cheapness, its uniformity [...] and the fact that it was factory-produced in modular sizes"[8] for the construction of temporary, prefabricated and "decomposable" buildings, both for exhibition and residential use.

While research in this direction advanced, the interiors of public buildings, shops, offices were often clad with plywood panels, such as the famous office of E. J. Knauffman in Pittsburgh designed by F. L. Wright between 1935 and 1937.

The years between 1939 and 1940 were significant for the widespread use of plywood in the two expositions in San Francisco and New York[9]. In the Californian city 57 buildings were constructed to-

tally or partly with plywood panels. During the New York World's Fair the House of Plywood built by the Douglas Fir Plywood Association was presented, which was a house with a wooden frame structure and plywood cladding, while the Finnish pavilion – designed by Alvar and Aino Aalto – was made with curved plywood cladding panels arranged on three levels in vertical succession.

Even today, plywood is commonly used for temporary works, as in the case of the Ice skating shelters in Siberia (Patkau Architects, 2011) or the Wander Wood Pavilion in Vancouver (University of British Columbia workshop, 2018). With regard to experimentation in prefabricated housing, the first steps were taken in 1890 by the Portable House Company based in Grand Rapids, Michigan, with the production of small structures using three-ply plywood panels. In the early 1900s this type of structure also became popular in Europe, for example with the American Red Cross buildings in France made with double walls of plywood and cork insulation, or with the *Plattenhäuser* (panel houses) produced in Dresden in response to the demand for low-cost housing.

During the American Great Depression, research conducted between 1932 and 1935 by the US Forest Products Laboratory was aimed at stimulating the mass production of housing: three-ply panels were produced with standard dimensions of 4 ft × 8 ft (1.22 × 2.44 m) for vertical enclosures and 4 ft × 8-14 ft (1.22 × 2.44-4.27 m) for horizontal enclosures, which were glued to the solid wood structural frame during assembly.

Other experiments sought to achieve greater freedom in floor plans, as in the case of the Packaged House System devised by Walter Gropius and Konrad Wachsmann, a system patented in 1942[10] that allowed the construction of dwellings with innumerable architectural and structural arrangements thanks to the Y-shaped steel connection system between standardised elements. However, these houses never reached the market and only prototypes were produced[11].

To this day, experimentation continues, stimulated by the use of numerically controlled machines that allow the cutting and shaping of panels as designed in 3D as well as the need to build houses quickly

and at low cost, especially in emergency situations. One example is the work of the British company Facit Homes, which makes homes by snapping together plywood cassette elements. Another example is the WikiHouse[12] open-source project,which provides two- and three-dimensional drawings to be "printed" on structural plywood panels and then assembled/constructed on site, even with unskilled labour.

Experimentation with furniture

Plywood has been used to make furnishing elements since ancient Egypt. In the history of modern and contemporary design, however, this material has only slowly "shown its face"[13], sometimes concealed by colour textures thanks to designers who have enhanced its "nature". In fact, the 20th century was an important turning point for experimentation and large-scale production of plywood furnishing elements, especially for seating.

The *Red-Blue chair* designed by Gerrit Rietveld between 1917 and 1918 was the first example of a modern seat made of two plywood panels for the back and seat, connected by 15 beech strips. Here the structure is concealed behind coloured finishes that clearly recall the De Stijl movement, while the "naked" prototype – made a few years earlier by the architect – reveals its real composition.

Inspired by Rietveld's work on wooden furniture, Marcel Breuer was the first in the Bauhaus to use industrially produced plywood panels rather than artisanal versions[14], especially for the mass production of tables and chairs designed between 1922 and 1924, which are fitted with padding on the seat and headrest to provide greater comfort. However, it was undoubtedly Alvar Aalto who exploited the full potential of plywood, first with the *Armchair 41*[15] (1930-1931), composed of a seat made of very thin curved plywood and two laminated wood armrests forming its structure, and later with the *Stool 60* (1933) made of strips of plywood coupled with solid wood to obtain the L-shaped curvature of the three legs.

The search for greater comfort was the basis for the work conducted by Charles Eames and Eero Saarineen[16] with the *Organic armchair* and the *Conversation chair* (1940-1941) and the conception of a three-dimensionally moulded plywood shell, an ergonomic form that did not require the addition of padding to be comfortable. In the 1940s Charles Eames continued experimenting in this direction with his wife Ray, and in 1946 the *Dining Chair Wood* was born, whose backrest and seat again exploited the three-dimensional modelling of plywood to "adapt" to the human body. The following year, the *Dining Chair Metal* was produced, which differed from its predecessor by having tubular steel legs, thus representing "a return to the modernist distinction between supporting and supported elements"[17].

Throughout history, this material has been the foundation for numerous other projects by designers and architects who have tried to make the most of its characteristics, but it also fostered the start of the do-it-yourself movement that spread in the 1950s and 1960s in the USA with actual kits for assembling furniture and small boats. Later in the 2000s, thanks to the availability of this material as well as the advancement of digital fabrication and the possibilities offered by computer numerical control (CNC) machines, designs to be "printed" on plywood panels for low-cost self-building of furniture were born.

Abbott Miller was among the first to do so, and in 2009 he produced a plywood chair whose parts are cut entirely by CNC machines. Opendesk[18] works in a similar fashion, providing a digital platform that offers free furniture designs (such as the *Edie* stool or the *Lean Desk* from 2013) in digital format, to be configured on one's own CNC and produced locally by cutting plywood panels.

Plywood in the works of Carlo Scarpa

"Scarpa designed the house, the library, the exhibition...the restoration of the old country house, a chair, a table, a spoon"[19], working at all scales in a similar manner, from conception to construction.

In his works he used different materials, often combining them in original ways. Among these, wood was masterfully used in its simplicity and fully exploited in its properties. Scarpa's drawings teem with notes, measurements, underlinings, corrections – and sometimes even the occasional expletive – in order to best express his will and "simplify" the work of the craftsmen[20] during the production or assembly stages.

It is precisely in the drawing of a table for his home dated 1936-1937[21] that yellow underlining appears, defining how to use the chosen material and diagrams concerning its layering. The table is made entirely of plywood, and its veneers are highlighted (with yellow lines) to be left visible. The yellow marking, identifying the plywood veneer, will characterise other furniture designs where Scarpa uses this material[22].

For the design of the Manlio Capitolo courtroom at the Venice Rialto courthouse (1955-1957), Scarpa used only wood, except for a few details in metal: the entrance portal to the courtroom, the wall cladding, the platform and all the furniture elements were in fact made of solid wood and plywood. More specifically, the panelling is made of 8-10 mm thick makoré mahogany veneer fixed to the fir sub-frame with brass screws. The stalls for the public, consisting of two shells and a seat, are also made of plywood, here hot bent poplar wood veneered in makoré mahogany on all surfaces[23].

For outdoor spaces Scarpa also experimented with the use of plywood. This was the case with the Water Pavilion at Brion Tomb in San Vito d'Altivole (1970-1978)[24], composed of different wooden elements, namely green marine plywood panels for the lower canopies, while larch slats without additional treatment are used for the upper part and Moralt for the gilded panels arranged inside[25].

There remains a lively and still evolving interest in wood-based products, which have been used throughout history in the world of architecture and beyond, having proven to be both versatile and "modern" thanks to their simplicity and workability as well as their mechanical properties. An interest that is destined to continue in the future thanks to new experiments in design and technology.

Notes

1 The definition attributed to plywood in particular is taken from the title of the exhibition Plywood:Material of the Modern World hosted in 2017 at the Victoria and Albert Museum in London, for the preparation of which extensive research was carried out. The results were published in the volume Wilk, C. (2017), Plywood.A Material Story, Thames&Hudson and V&A, London.

2 Mazzucchelli, E.S. (2016), Sistemi costruttivi in legno.Tecnologie, soluzioni e strategie progettuali verso edifici zero energy, Maggioli, Santarcangelo di Romagna.

3 Giachino, D.M. (2013), Legno. Manuale per progettare in Italia, Utet, Turin.

4 Moralt is the trade name by which such wood-based panels are identified. More specifically, the term is derived from the name of Moralt August, a carpenter who founded the Hausham company in 1900. From unwritten sources, it seems that Carlo Scarpa made use of this material several times and that it was initially chosen for the luav tables (as stated by the Zanon smiths during the interview in February 2021).

5 For this reason, the terms veneered and veneers were often used in a derogatory manner, especially in light of the 19th- and 20th-century debate solid v veneer.

6 The term plywood appeared in the early 1900s and was widely used after the First World War in all English-speaking countries.

7 Perry, T. D. (1942), Modern plywood, Pitman Publishing Corporation, New York & Chicago, p. 26.

8 Wilk, op. cit., p. 105.

9 These were respectively the San Francisco Golden Gate Exposition (1939-1940) and the New York World's Fair (1939).

10 This was followed by the founding of the General Panel Corporation.

11 Although it is nota prototype, plywood houses also include the Plywood House designed by Herzog & de Meuron in Bottmingen, Switzerland (1984-1985). The building,a garden pavilion designed as a light box in addition to a traditional house, consists of a balloon frame structure covered with plywood panels both internally and externally. Further reading: https://www.atlasofplaces.com/architecture/plywood-house/?/Plywood-House-Herzog-de-Meuron (last accessed: 3 June2024).

12 The platform was created in 2005 by the London-based design studio Architecture 00. Further reading: https://www.wikihouse.cc/ (last accessed: 3 June 2024).

13 Expression taken from "Plywood shows its face", the title of chapter 6 in Wilk, op.cit.

14 Wilk, C. (1981), Marcel Breuer. Furniture and interiors, The Museum of Modern Art, New York, p. 26.

15 Designed together with his wife Aino and also known as the "Paimo Armchair". It was mass-produced by the Artek company starting in 1932.

16 They were awarded first prize in the Organic Design in Home Furnishings competition, whose jury included Marcel Breuer and Alvar Aalto, among others.

17 Wilk (2017), op. cit., p. 160.

18 https://www.opendesk.cc/about (last accessed: 3 June 2024).

19 Various authors (1984), Carlo Scarpa designer, Biblioteca dell'immagine, Pordenone, p. 22.

20 In the Venetian works, Scarpa relied on the Anfodillo and Capovilla carpentries for the wooden elements.

21 Various authors (1984), op. cit., p. 23.

22 Others include the Quatuor table (1972) or the "1934 series" table and chairs (1976).

23 Codello, R. (2000), Il restauro dell'architettura contemporanea.Carlo Scarpa, Aula ManlioCapitolo, Electa, Milan.

24 On the Brion Tomb, see: Zanchettin, V. (2005), Carlo Scarpa. Il complesso monumentale Brion, Regione del Veneto, Marsilio, Venice.

25 Ferrari, M. (2020), "Il tempo del legno nel padiglione di Carlo Scarpa", in Techne. Journal of Technology for Architecture and Environment, no. 20, Tempo e Architettura, pp. 247-254.

SOLITUDE

Margherita Ferrari[1]

Artisanal solidity

One day Carlo Scarpa showed up at Gino Zanon's workshop in Venice with an elephant tusk. He had an assignment for the artisans: to make a detail on the crucifix to give to Onorina Brion, a copy of the one placed in the funeral chapel in San Vito d'Altivole. Not having found an ivory billiard ball, he had looked for an alternative[1]. This episode probably took place in the 1970s, so the collaboration between the smiths Paolo and Francesco Zanon with the professor had already been ongoing for decades[2]. The gesture itself may seem bizarre, and the image of Carlo Scarpa strolling through the streets of Venice with a tusk under his arm may raise eyebrows – even though in those days the ivory trade was legal[3], so it was actually not so unusual! – however, when you consider the relationship Scarpa had established with the professionals around him, this gesture takes on a different value.

There are numerous testimonies of people who knew him directly, just as there are many publications dedicated to him that draw from a rich national and international bibliography, offering interesting points of view[4] that constantly drive the debate on Scarpa's works as well as on his person as a teacher and as a professional. Probably one of the common factors that most identifies him is precisely his attention to materials and details, an attention – one could almost say – that was universally recognised. Behind every detail there was in fact always a path dictated by the desire to define the shape of the material and thus the architecture of the element, whether it was a glass vase, a wooden door or a metal frame. It is also well known how many drawings Carlo Scarpa made to express his reasoning and reflections, it

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was the only way for him to be able to proceed and achieve a result and the definition of a design.

Faced with this multitude of drawings, it is perhaps superfluous to explain the reasons for so much research, whether it was purposeful craftsmanship or constant uncertainty[5], though it is certain that he was not alone in these pursuits. This is in no way intended to cast doubt on the authenticity of his designs. On the contrary, the intent is to appreciate even more the design process that led to the definition of each work, a process that was particularly characterised by discussions with craftsmen such as metalworkers, carpenters and painters.

The starting point for any design process was in fact "constant fidelity to tradition"[6], which implied an accurate knowledge of the materials and techniques developed over time. This knowledge constituted a fundamental point of the design process, and technique was nothing more than a way of knowing the material, so the form could be imbued with meaning and express the intention of the project[7]. This interest matured over time, and was further invigorated by the context in which Carlo Scarpa grew up and was educated, the city of Venice[8]. In this same city he would meet the craftsmen and professionals he would collaborate with for decades, for works not only in Venice. Among the best known are Eugenio De Luigi for plaster, Luciano Zennaro for stone, the metalworkers Francesco and Paolo of the Zanon Gino workshop, the Anfodillo carpentry shop with Angelo and Saverio, and the Augusto Capovilla carpentry shop with Gianni Capovilla and Iginio Dainese[9]. These were the artisans he established a working relationship and trust with, which he took with him even after his move from Venice to Asolo.

In itself, the collaboration with artisans can be considered a practice peculiar to architects, who through professional affinity solidify their relationships over time. However this collaboration should be contextualised geographically and temporally. Indeed, beyond Scarpa's own desire to get to know the techniques and materials in order to experiment with formal solutions in his designs, these were craftsmen who distinguished themselves in a city as special as Venice and at

a time when technology was not only advancing, but doing so rapidly. Working in Venice meant – and still means today – managing higher costs compared to similar companies based on the mainland due for example to the transport and storage of materials and tools, thus impacting the companies' competitiveness[10]. In the meantime, from the 1960s onwards mechanisation of manufacturing grew rapidly, driven in particular by the automotive[11] and metalworking industries. This change brought about by the use of automatic machines would boost mass production, and thus the production of identical parts in less time, even drastically, compared to similar manual processes. Thus industrial elements and products were being introduced into the building and furnishing sectors, gradually replacing even those pieces that were usually custom-made by artisans.

Machine tools became indispensable for keeping up with the times, and thus also with the competition. For the workshops on the Venetian islands, it meant not only having space to house them, but also the possibility of maintaining and sheltering them from the typical dangers of the lagoon, such as high water. At the time, the Anfodillo and Capovilla carpentry workshops, as well as the Zanon workshop, were also distinguished by this service, i.e. having machine tools that allowed them to perform different processes, an aspect that was much appreciated – and sought after – by Carlo Scarpa himself, as the Zanon smiths, Angelo Anfodillo and Iginio Dainese[12] who worked together with him also recall.

The Capovilla carpentry workshop moved from Rio de Ca' Foscari to Rio Marin in 1938, while the Zanon workshop and the Anfodillo carpentry workshop were located in Cannaregio, Rio de la Sensa. The latter had a total area of over 2,000 square metres, divided into work space, storage and offices[13]. The Anfodillo carpentry shop constituted one of the largest workshops in the city of Venice, stretching from Rio de la Sensa with the access from the foundation, to Sant'Alvise, with the water gate. In the same building, with an entrance from Calle dei Riformati, was the Gino Zanon workshop, then run by his sons Francesco and Paolo, who were also the same artisans Scarpa collab-

orated with directly for many of his works, starting with the Olivetti shop in the 1950s. The first works were generally metal accessories for carpentry products, but in a few years the workshop's activity grew, and Paolo and Francesco Zanon contributed to the creation of artistic installations and elements with an increasingly refined workmanship, including those of the Brion Tomb in San Vito d'Altivole, probably among their most elaborate.

However, craftsmanship and design insight are not only evident in an object's degree of complexity, but rather in the attention to detail. In fact, value does not derive from the nature of a material, but rather from its quality and the production technique employed. Thus over time Scarpa, thanks also to constant interactions with artisans, taught a "method" on the use of materials, namely "that of searching for and recognising the well-made"[14].

It was in this same workshop that the Iuav table also took shape, consisting of a metal tube frame and a wooden top (first Moralt panels and later plywood), in the first series also equipped with wooden caps turned on the lathe and placed on the table's feet, elements that were later produced in Teflon due to their excessive cost. Such furniture may seem extremely simple compared to other objects designed by Scarpa, obtained by assembling a few standard elements such as panels and tubes. However, the latter required two further steps: machining the pipe tops at the connection points and joining them together. For the first series of tables this was done with a blowtorch and borax, which, dripped along the joints of the juxtaposed elements, joined the tubes without compromising their shape. Today, this technology, still in use for jewellery work, has been replaced by electric soldering, which is less expensive but requires a final filing to obtain a finish that is as close as possible to the look achieved with a blowtorch. This furnishing was designed to be a "fixed purpose object"[15], and therefore to be mass-produced, not so much industrially as in artisans' workshops, because it was complicated to mechanically reproduce the joint, which was designed to be done manually.

Research into materials and above all production techniques are at the heart of every Carlo Scarpa project, whether it be artistic works such as glass vases, furniture elements or temporary installations for exhibitions, keeping in mind the intended use and purpose of each object: "While the search for form in glass objects is almost completely free [...], solidity for a table, for example, becomes essential, and often Scarpa, pointing out that the slightest rocking is annoying, would invite people not to be influenced only by the novelty of the form or its elegance"[16].

The interest in materials is a curiosity that always accompanied Scarpa on his travels, such work trips becoming an opportunity to collect materials or products that could not be found elsewhere, but also to get to know new ones, as the Zanon smiths and Saverio Anfodillo recall[17]. However, this research was not always successful so he was forced to seek out alternative solutions, such as the time he had to use an elephant tusk instead of a billiard ball to obtain the ivory for the detail on the crucifix.

It is therefore clear how the bond built over time between Carlo Scarpa as a designer, in the broadest sense, and the craftsmen who were experts in materials and processes, was aimed at the goal of producing with care, and sometimes even with daring, while also going along with the "natural" evolution of techniques and work tools, such as the introduction of machine tools in craft workshops.

The ability to use tools in the most appropriate manner does not derive solely from technical skill, but is the result of a profound knowledge of the materials these tools act on. A knowledge capable of exalting the intrinsic properties of the material, even able to overcome the nostalgia associated with the techniques of the past[18] that can sometimes hold back a natural evolution of craftsmanship, and thus of its very meaning.

Notes

1 Paolo Zanon recalls this episode during an interview conducted by Alba Di Lieto in 2010 for CISA Palladio Museum. The interview with the Zanon brothers is part of a project that collects the testimonies of professionals who collaborated with Carlo Scarpa. These interviews have been transcribed and are available at the following web address: http://mediateca.palladiomuseum.org/scarpa/web/videointerview.php?valo=i_6 (last accessed: 4 April 2021).

2 The collaborators and craftsmen who worked with Carlo Scarpa, some for a few years and others for decades, continue to refer to him as "professor".

3 As of 6 February 1976, the CITES Convention regulates the trade in ivory obtained from the tusks of African and Asian elephants in Italy.

4 B. Albertini and S. Bagnoli offered an exhaustive observation regarding the writings dedicated to Carlo Scarpa, especially those in architectural journals: "Everyone believes that they alone discerned his [Carlo Scarpa's] true identity, that they alone understood his world". Albertini, B., Bagnoli, S. (1968), Carlo Scarpa, L'architettura nel dettaglio, Jaka Book, Milan, p. 20.

5 There are multiple subjective statements on this subject. Some believe that his research was driven by passion and insatiable curiosity, others by constant uncertainty and insecurity, as stated by ManlioBrusantin, who claimed it was driven by "a bitter melancholy...no artisanal pleasure of the 'thing' but rather a moral resentment of his own inadequacy even to conceive 'forms'". Brusantin, M. (1972), "Carlo Scarpa architetto veneziano", in Controspazio, vol. 3/4, p. 4.

6 Albertini, Bagnoli, op. cit., p. 39.

7 For more information seealso the chapter "Il significato dei materiali" in Los, S. (1967), Carlo Scarpa Architetto Poeta, Cluva, Venice.

8 The "Venetian" character is often extolled by the international press, which tends to associate the attention to materials with an attitude typical of the designer trained at the IUAV Architectural Institute. Recall for example the article published in Architectural Review in December 1973, in which this aspect was emphasised: "He is a Venetian to the core, cultivates the local dialect in his speech and reveals in his work that feeling for materials and textures which, as Adrian Stokes has so brilliantly observed (Venice, An Aspect of Art), is a marked characteristic of Venetian building". Various authors (1973), "Carlo Scarpa", in "Architectural Review", vol. 154, p. 393.

9 Today the Zanon workshop with Francesco and Paolo and the Capovilla carpentry workshop with Carlo Capovilla and Luigi Pruneri follow the restoration and maintenance of Carlo Scarpa's works, including the restoration of the Brion Tomb, which began in 2016, directed by architect Guido Pietropoli and promoted by Ennio Brion.

10 On the craft trades of the time see the essay by Dell'Oro Giuseppe (1960), "Nel mondo dei mestieri artigiani di Venezia ieri e oggi", in Ateneo Veneto: Atti e memorie

dell'Ateneo Veneto, no. 1, pp. 63-70. Recently, research based on data from Confartigianato Venezia was also published, which compares the various product sectors and the change related to customers: Vettore, E. (ed.), (2019), Ariffaraffa. Venezia, quel che resta del Centro storico e del suo Artigianato, La Toletta Edizioni, Venice.

11 FIAT, Fabbrica Italiana Automobili Torino, was founded in Turin in 1899. In 1973 it founded COMAU, the Consorzio Macchine Utensili, i.e. autonomous companies specialising in the manufacture of machines for industry. Today COMAU is one of the world's leading players in industrial robotics research and development.

12 The interviews were conducted separately in 2016.

13 The CISA Palladio photo library holds photos taken by Guido Guidi inside the Anfodillo carpentry shop depicting the workshop in its final years of operation. The images show large rooms and the presence of machine tools such as planing machines and tables with band saws. Some elements designed by Scarpa are also recognisable in some shots.

14 Los, op. cit., p. 26.

15 Manlio Brusantin in Controspazio (1972) states how Scarpa was firmly against the industrial production of "objects with a fixed purpose": "...to see a product slip through the cracks or worse to it hand over spontaneously, for a fee, to industry means not so much losing one's autonomy as a designer, but the time needed for each and every thing, which is what Scarpa cares most about while also doing so much to promote good design. His rare products in this sense, made directly or indirectly under the stimulus of his son Tobia and the Gavina industry, always tend towards one-off pieces, are authentic and costly (unfortunately for industry) divertissements and slip away from the serious as well as intransigent calculation for mass market production precisely because of the author's intention and will". Brusantin, op. cit., p. 11.

16 Albertini, Bagnoli, op. cit., p. 40.

17 Cascavilla, M. (1974), "Un'ora con Carlo Scarpa", in Favero G. (ed.) RAI Incontri.

18 At the FABRICATE conference (Stuttgart, 2017) dedicated to robotics and automation in the field of architecture and design, professor and historian Antoine Picon gave a lecture on the value of nostalgia for the past, how humanity must look to the future by remembering what once was: nostalgia plays an important role in learning as long as it does not hinder confidence in the future. For more information, seealsohisarticle: Picon, A. (1998), "Il gesto produttivo e l'architettura nel secolo dei Lumi", in Casabella 542-543, pp. 20-23.

TRANSPARENCIES

Mauro Maiotti[1]

From the classic model to special formats

This short text of mine is meant to be a testimony of the life of the Scarpa tables over the last 40 years, from the beginning of the 1980s to the present day, from the point of view of those who bought those tables, maintained them, and managed their movements and placement.

At the beginning of the 1980s the classrooms were equipped with Scarpa tables in the classic (historic, certainly the original) 181×101 cm size, with adjustable-height stools for seating. At that time, the campuses in operation were Tolentini and Villa Franchetti in San Trovaso (Treviso).

The Scarpa tables were located in classrooms and some teachers' offices, while the administrative offices were equipped with the famous 1963 Olivetti Sintesis BBPR model, and later supplemented and/or replaced with the 1970 Series 45 model, which were so angular that every time you sat down you were sure to bump your legs or knees on the edges, uprights or drawers, resulting in bruising.

The "classic" Scarpa table was being used; we could even call it "the original" if only we could find a drawing, a sketch, a description by Professor Carlo Scarpa. In any case there was only one model with dimensions of 181×101 cm, a smooth one-inch tubular iron frame treated with red lead rustproofing in the classic orange colour, with a fir plank top and wooden feet (called caps), usually oak.

When I arrived at the technical office in the early 1980s, one of the first jobs I took on was to purchase the Scarpa tables for the classrooms in Palazzo Tron and Palazzo Badoer, which were coming into use as restoration work had been completed.

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> The first question I asked was: "Who do we buy the Scarpa tables from?". The answer was: "We don't buy them, they're built". And who builds them?
> "Just call Zanon in Cannaregio".

Yes, that's right, Professor Scarpa, who collaborated with the Zanon workshop to create his iron works, seems to have sketched (it is said by sketching on a table top in the workshop) the design of what would from then on become the table used by all IUAV students for their studies.

Starting in the 1980s, in a continuous crescendo for the university, departments (six) were established and a large number of technical-administrative staff and faculty was hired. The campuses increased in number and thus also the number of classrooms and labs. The central library was reorganised and decentralised libraries were opened, and so on. At the same time, the demand for tables increased exponentially.

From then on, the Scarpa table proved to be absolutely versatile. All sorts of colours and sizes were produced, which the internal staff (technical department) defined as follows.

The "classic" or "normal" format (181×101 cm) was sometimes simplified to 100×180, and especially in the 1990s there was a rush to cover the top with a laminate (black, grey, white), the frame started to become black with some variations (grey, orange and even white...fortunately only a few) and for the feet wood gave way to Teflon (white or black).

The "large" formats, those that exceeded the standard size: not many were ordered and in some cases they were used for conference rooms. There was also one in the Council Chamber, now the offices of the Rectorate, 300 cm long (perhaps the largest one commissioned), very difficult to move and with a structure that is too weak for its size. In fact after a while it began to dip in the middle and was demolished.

The "keyboard" format: small tables built for typewriters (still in great demand today, but obviously for other uses).

The "small" formats: those smaller than the classic version, and here there are countless sizes (at least 30 or so, some differing by just a few centimetres).

The "odd" formats: those that were 72-73 cm or less in height. They were usually requested as stands for projectors or other multimedia equipment, or for some particular activity, such as an information desk for example.

The "special" formats: these differed in structure as well as size, and some were requested with luminous glass tops for slides, others with double frames with one or more removable surfaces to hold equipment, and in some cases with reinforced frames to support particularly heavy machinery.

What is the life of the Scarpa table?

The Scarpa tables have always been at the forefront of IUAV's history, they have played leading roles in the studies of thousands of students, they have stood up to the student miners who, with passion and tenacity, dug grooves and tunnels into the surfaces, the students with engraving and painting skills, and those who discovered themselves to be poets and writers, both of the noble art of poetry and the less noble art of vulgarity, all with the carefree lifestyle that is said to be typical of university students.

Sometimes, when replacing table tops (especially the older ones), if one pauses to look at them one realises how the new generations have changed: now the tops are still marred by many engravings, usually the result of cut-outs from models and various activities, but the traces of poetic writing skills have almost disappeared, probably transferred to smartphones. In any case, one thing has not changed over the generations: the multitude wads of chewing gum stuck under the tables.

The Scarpa tables have been protagonists in the lives of all components of the Iuav: faculty, students and technical-administrative staff. From the student occupations of 1968 onwards they were used as beds

by students spending the night inside the university, as a dining table most often transported to the gardens and cloisters of the campuses, as a conference table in the Campazzo dei Tolentini during assemblies, as a stage for musical and theatrical performances especially in the Tron campus, used for lavish buffets, and for all occasions where a surface was needed for placing things. Several tables turned vertically and bound together acted as a partition wall and display panel, especially during examinations (as is still done today). Many were loaned out and not all of them came back. You could say they were in great demand.

In conclusion

A solution that exemplified constructive simplicity, as well as versatility, adaptation and surely also convenience. You can sit in any position, and standing you can reach every point on the surface, a table with no sharp edges, and if you bump it with your legs you don't get hurt since the structure is made with a round tube.

A table that's almost indestructible, if a leg breaks all it takes is a couple welds and then back to the classroom, a coat of paint on the frame, a new top and it's as good as new.

It was and is the right table in the right place, always finding the right moment to be used, and thus transforming from a simple table into an icon of the Iuav community.

Having arrived at this point, one consideration must be made: all this has been possible thanks to the work of an artisan who has preserved the uniqueness and characteristics of the original artefact. Carlo Scarpa's idea was made real thanks to the craftsmanship and mastery of the Zanon workshop, establishing a partnership that has made it possible to achieve a quality that has remained unchanged and constant over time.

What can we wish for such a table?
Given its iron-clad health...to live more than 100 years.


Per funzioni multiple
Per rompere
Per fissare

Umberto Ferro, Luca Pilot[1]

Photography as a witness to the changes at Iuav

The Scarpa table is an artefact without technical drawings but with thousands of representations. In fact, in many "design and survey" courses the first exercise was to measure and draw the Scarpa table, simple but not trivial.

There are testimonies of those who have built hundreds of them, and of those who have studied and worked on them, as this text has highlighted.

And there are photographs.

Images that fix memories make it easier for us to retrace them, sometimes deluding ourselves into believing that nothing in our memory will be lost.

It is precisely the pictures in this book that show how the Scarpa table has often played the role of supporting actor in many Iuav events, also helping us to reconstruct their history.

For the past 40 years the role of visual witness of the life at Iuav has been played by the Photographic Laboratory, a structure established in 1980 on the initiative of Professor Luciano Semerani, then director of the Institute of Theory and Technique of Architectural Design, who had understood that the presence of a structure dedicated to photography was essential in a university dealing with architecture. In fact, since its origins photography has had a very close relationship with this science that is at the same time art. It is safe to say that the oldest photograph in history is an image of architecture that was taken by Joseph Nicéphore Niépce in 1826.

And ever since the experiences of the first photographers, a language of architectural photography has developed, defining codes and

1 Photographic laboratory, Università Iuav di Venezia.

design paths, rules and constraints that are still valid today, which have characterised the numerous photographic campaigns of the Laboratory.

But the Laboratory with its images has not only looked at architecture, it has documented diplomas, events, exhibitions, transformations of the campuses, and many events that have marked the history of the Iuav.

Photographers, with the product of their gaze, have always offered a testimony of the events they have witnessed. They inform, evoke, preserve objects, people and moments from the past, allowing one to see things that would otherwise be forever barred to many. In recent years we have witnessed a technological revolution that has made access to image production a kind of game for everyone, and the spread of smartphones has added to this with a proliferation of good photos for every occasion.

But as Johann Wolfgang von Goethe teaches us, "The eye sees what the mind knows", and therefore behind every photographic reportage there must be preparation, knowledge of the subject one is going to photograph, quickness in grasping the fraction of a second in which everything is condensed, as well as an obvious technical ability that leads to concrete operational precision.

Among the most important events immortalised over the years that we can recall and retrieve in the archives, whether on film or digital, are the Permanent Assembly of 1986, the occupation that took place in 1990, the International Photography Conference hosted in 1984, the funeral of Professor Astengo in the Tolentini courtyard (the coffin was placed on a Scarpa table), and of Professor Salzano in 2019 at Ca' Tron, Occhetto's visit in 1989, the honorary degree given to President Dubček in 1989, the inaugurations of the academic years, and the many lectures given in the great hall by international architects and artists.

The various transformations and new layouts in our campuses have all been documented, that of the central library designed by Giuseppe Davanzo at the end of the 1980s, the demolition of the former Magazzini Frigoriferi, the Magazzini Ligabue before its restoration and

conversion to university campus, Francesco Venezia's Material Testing Laboratory on the mainland, the restoration in the mid-2000s for the expansion of the Tolentini library by Franca Pittaluga, and the recent restoration work at Ca' Tron and Badoer.

And there are the big and small everyday stories about our students, their work, often represented by project models or drawings. A count has never been made, but there are certainly thousands of models and other works by teachers and students that have been photographed, archived and memorialised by the images taken in the Laboratory. By the way, the studio equipment consists of camera, tripod and lights of course, but also of a Scarpa table covered with a black cloth, on which the models are placed and photographed. And then we find images of design workshops, seminars, fashion, architecture.

Moreover, since 2002 the university has established the W.A.Ve., summer architectural design workshops that bring a rich selection of architects from all over the world to Venice, hundreds of students working together in the space of three weeks, tackling the most topical issues of the city and the region. Three weeks of designs, models to be built, spaces to be set up, collective experiences, presentations, competitions culminating in the final awards evening. Everything or almost everything is documented, creating a shared daily diary and a memory of texts and images later collected in a printed publication.

The 2020 W.A.Ve. with the theme "Post-Covid Scenarios" had to be held remotely due to the pandemic, but together with photographers from other countries the Laboratory contributed with a selection of images from the photo campaign carried out at that time in Venice and included in a web presentation entitled "*Post-Covid World Observatory*".

Technological innovations over the past decades have revolutionised the photographic medium from analogue to digital, from black and white to colour, from film to sensor, from darkroom to digital development software, and looking at the images in this publication with curiosity one can see how many things have changed even at Iuav.

But what never seems to change or age is the Scarpa table.

IN EXHIBITION

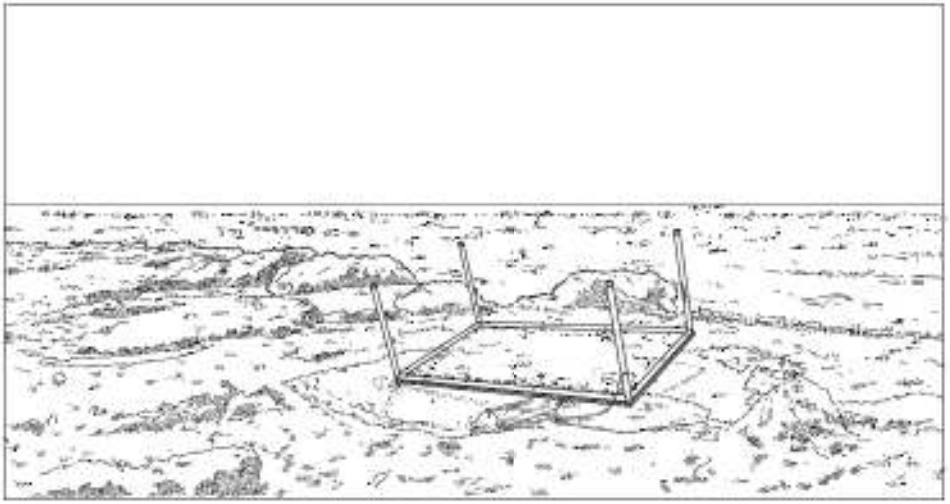
Eva Jervolino, Enrico Calore, Marco Crosato[1]

On the tables

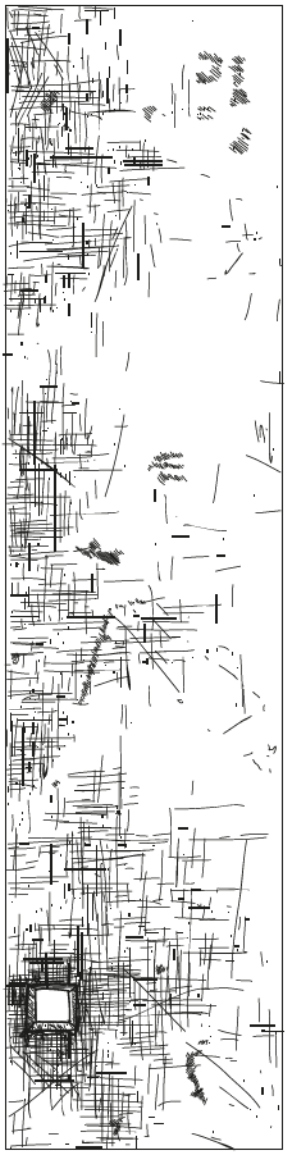
In Ancient Greece, at the roots of our culture, the table was defined by two words: ἄβαξ [*ábax*] (*abacus* [-ακος], rectangular tablet used to perform calculations) and τράπεζα [*tràpeza*] (*trapeze* [ἡ], banquet table, but also bar hung from two parallel ropes used by acrobats for their performances). The first word emphasises an aspect purely related to the τέχνη [*téchne*], a term that characterises architecture itself in its absolute pairing with the ἀρχή [*archè*], i.e. the organisation and plastic impression of man on the natural world. The second word, linked for us today to the world of the circus, emphasises the idea of versatility and mobility of the table object. These two "eyes" through which a table sees reality are both kept wide open through Carlo Scarpa's solution, and indeed this is the premise that makes it not only an object to be used as a "table form", but a multifunctional and multidisciplinary expedient, to the point of becoming a room, wall and staircase. For architecture students in particular, it represents the main support on/with which to experience the first years of design. Ever since the use of the most famous drawing tables – usually tilted and equipped with a parallelograph – began to diminish with the development of more technologically sophisticated designs, the Scarpa table is credited with being not only a worthy substitute to work on, but a true polymorphous tool that leaves room for infinite reinterpretations.

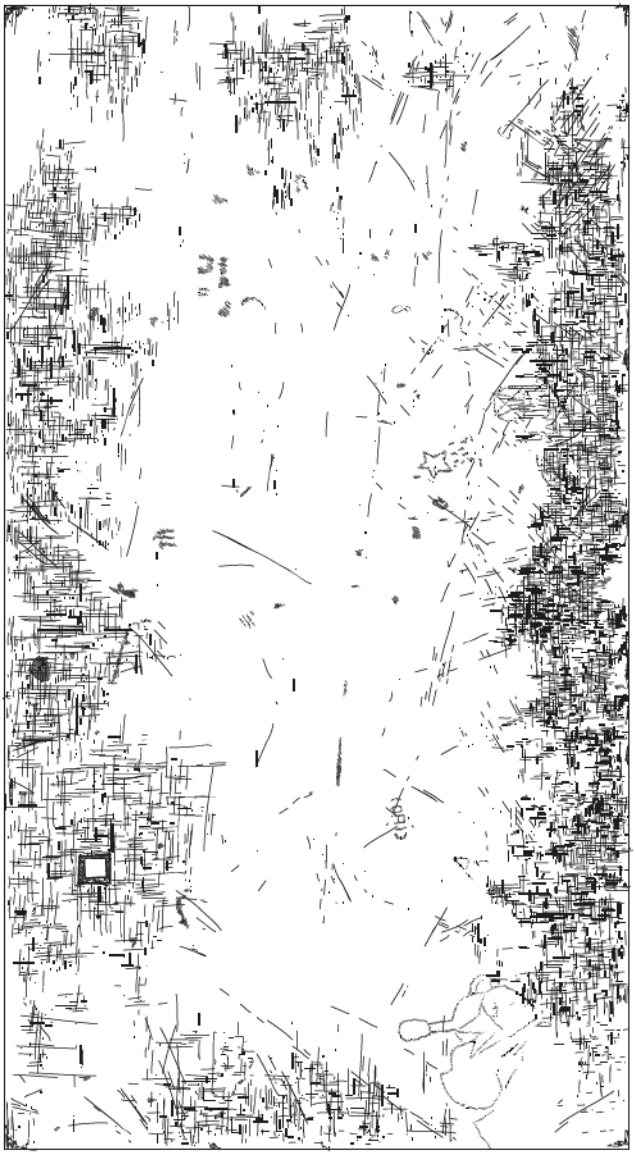
Thus, like a boat, it finds itself repeatedly docking, setting sail, sailing out to sea, displaced by the dreams of the many travelling scholars who lead it to new shores.

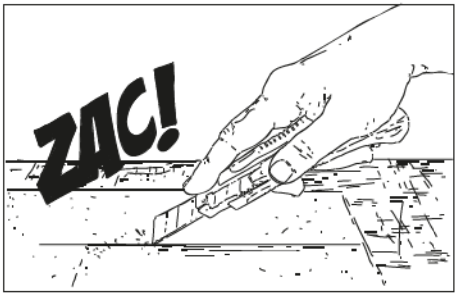
1 Students of the Master of Science in Architecture degree programme, Università Iuav di Venezia.

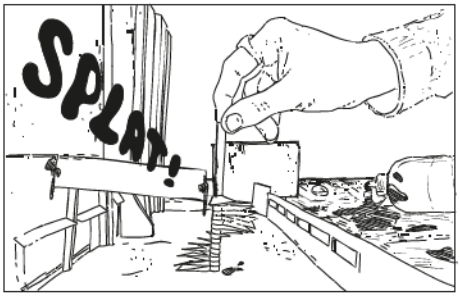


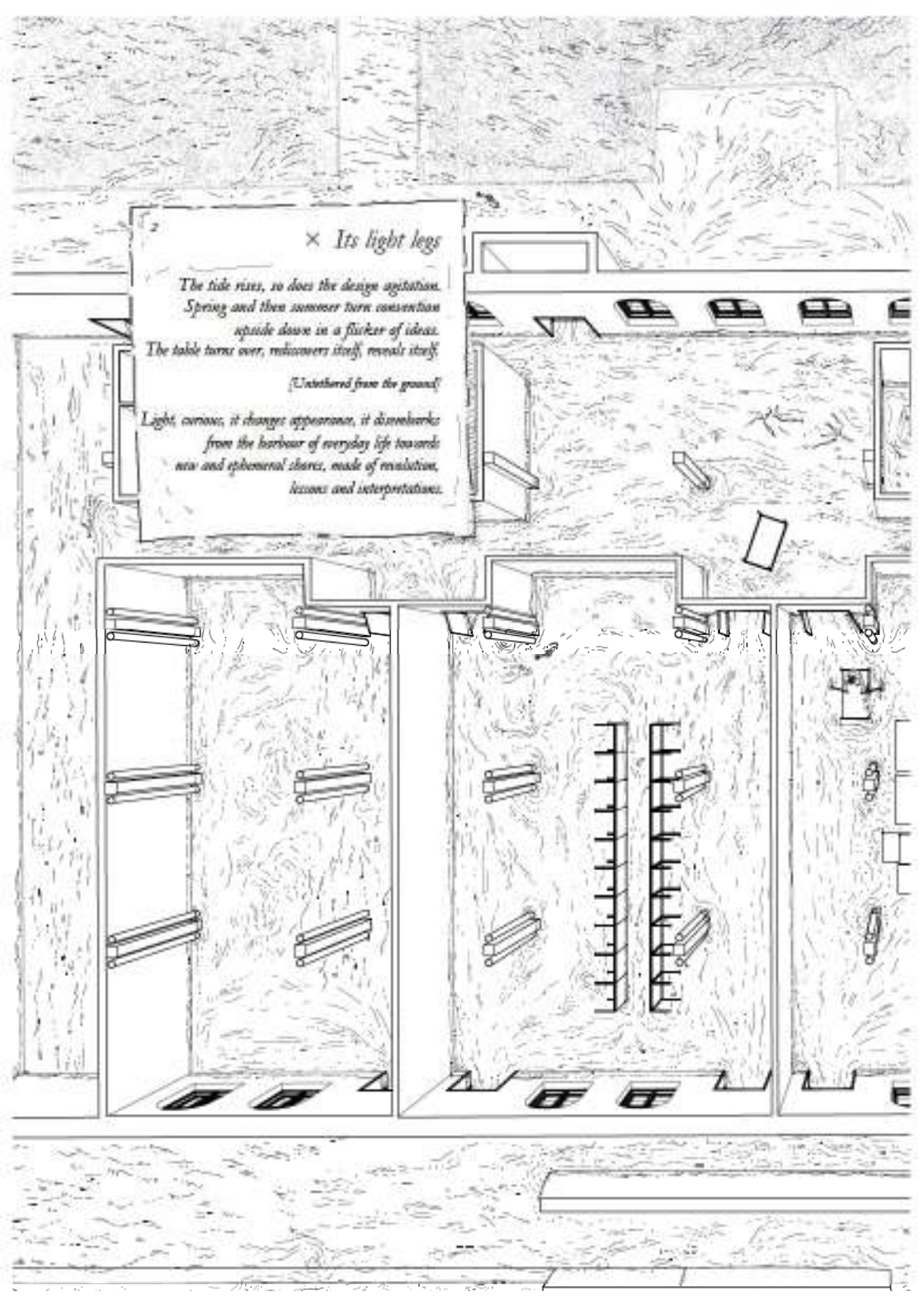

× A table alone
=> A boat stranded for months.
It stands still and thus becomes part of one
big mechanism, the school.
[Bound to the ground]
Heavy on its legs, caressed, engraved,
tickled by a sharp cutter.
We work on it,
we study on it,
we cheat on it.

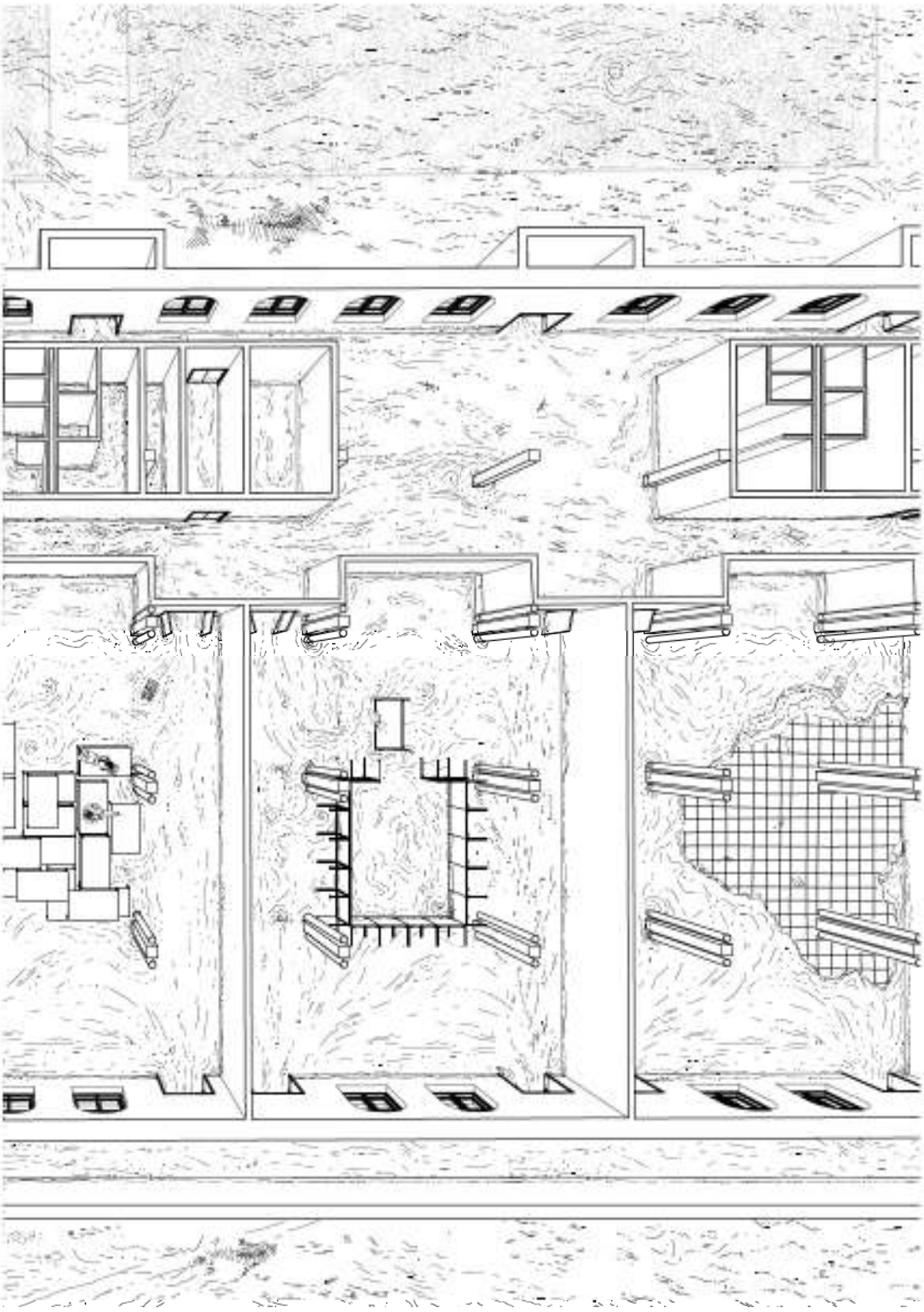


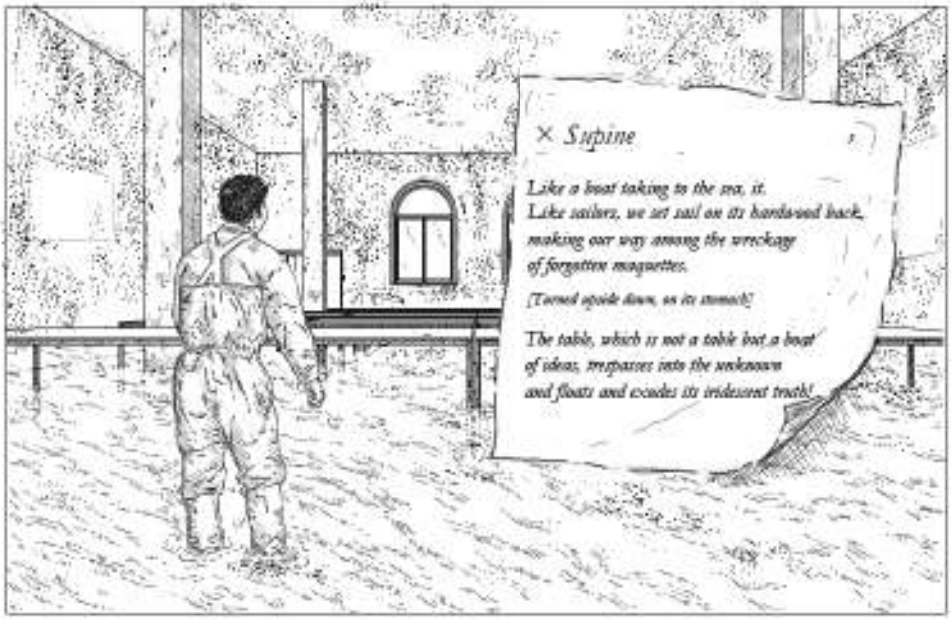


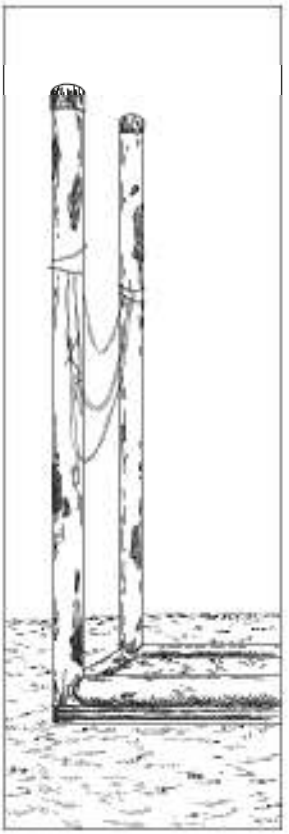

ZAC!

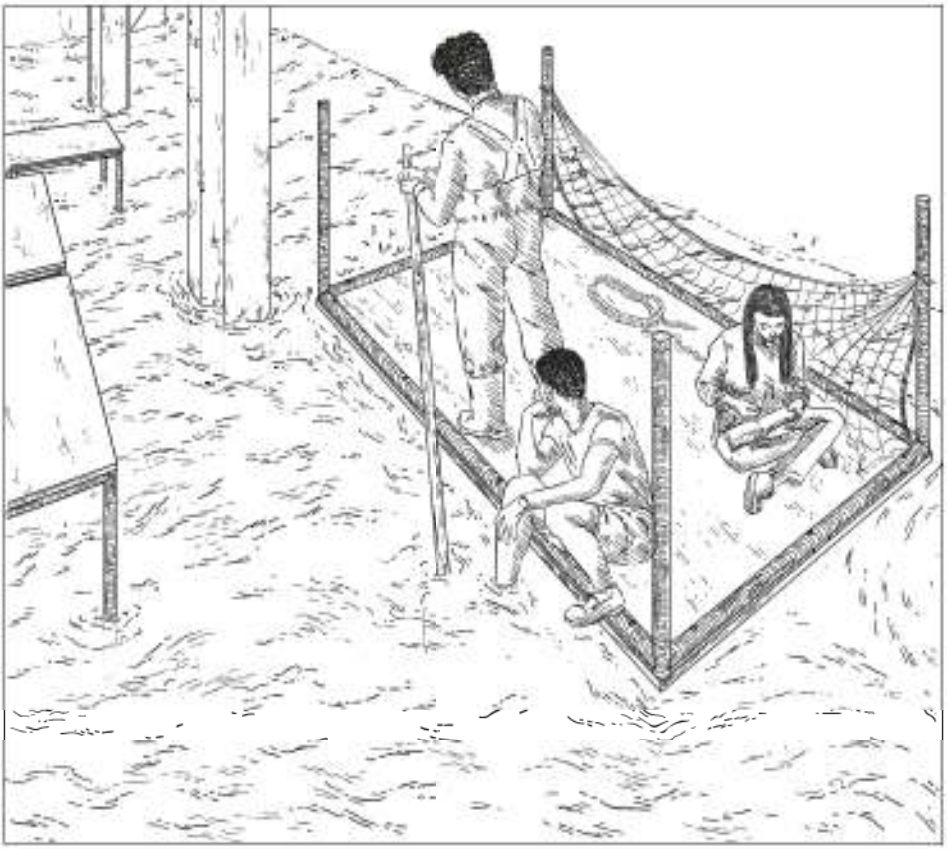

SPLAT!

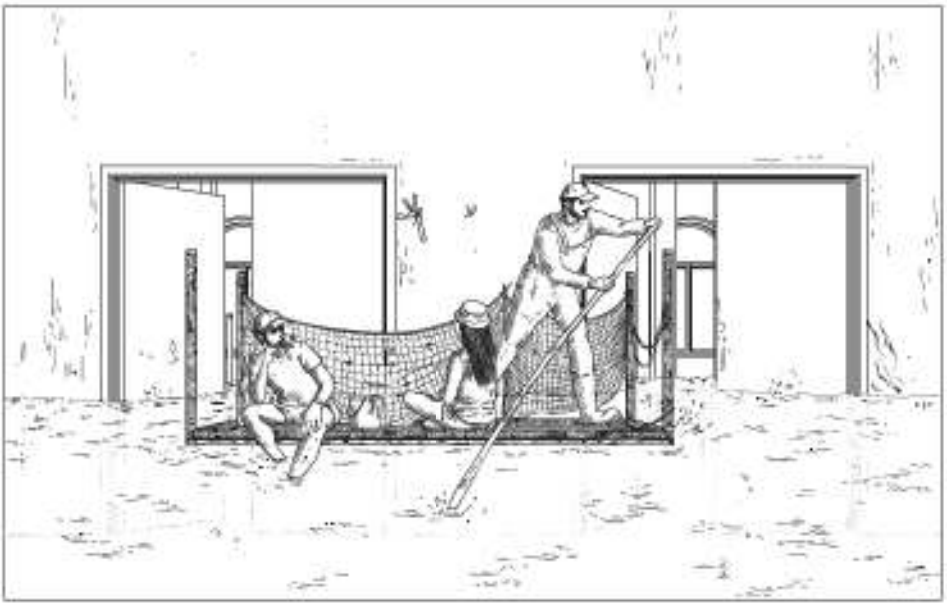

2
× Its light legs
The tide rises, so does the design agitation.
Spring and then summer turn convention
upside down in a flicker of ideas.
The table turns over, rediscovers itself, reveals itself.
[Untethered from the ground]
Light, curious, it changes appearance, it disembarks
from the harbour of everyday life towards
new and ephemeral shores, made of revolution,
lessons and interpretations.

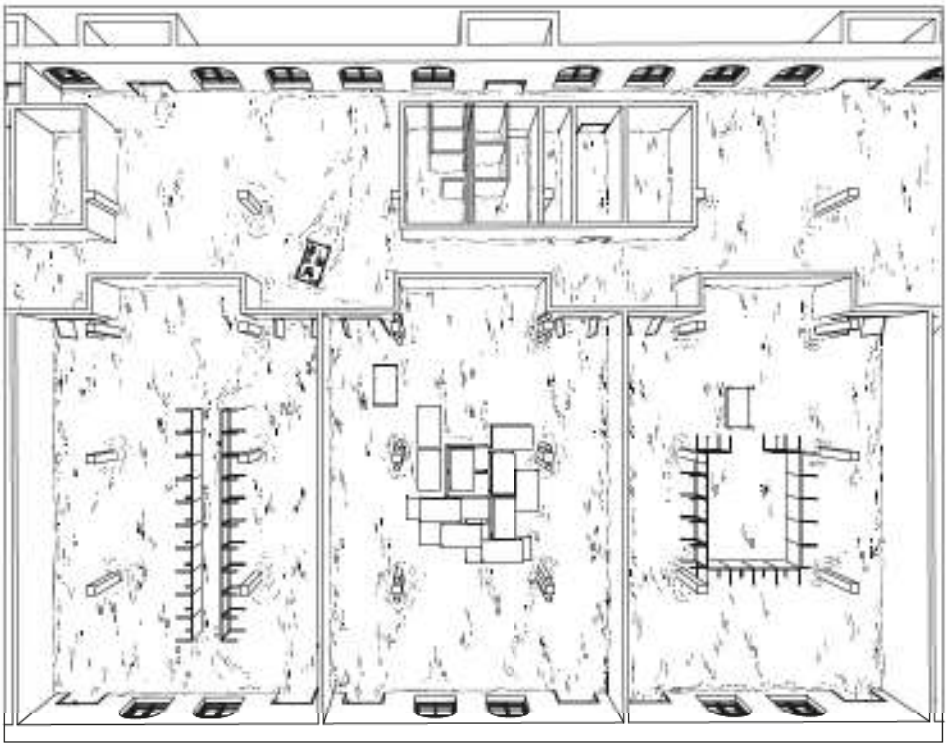


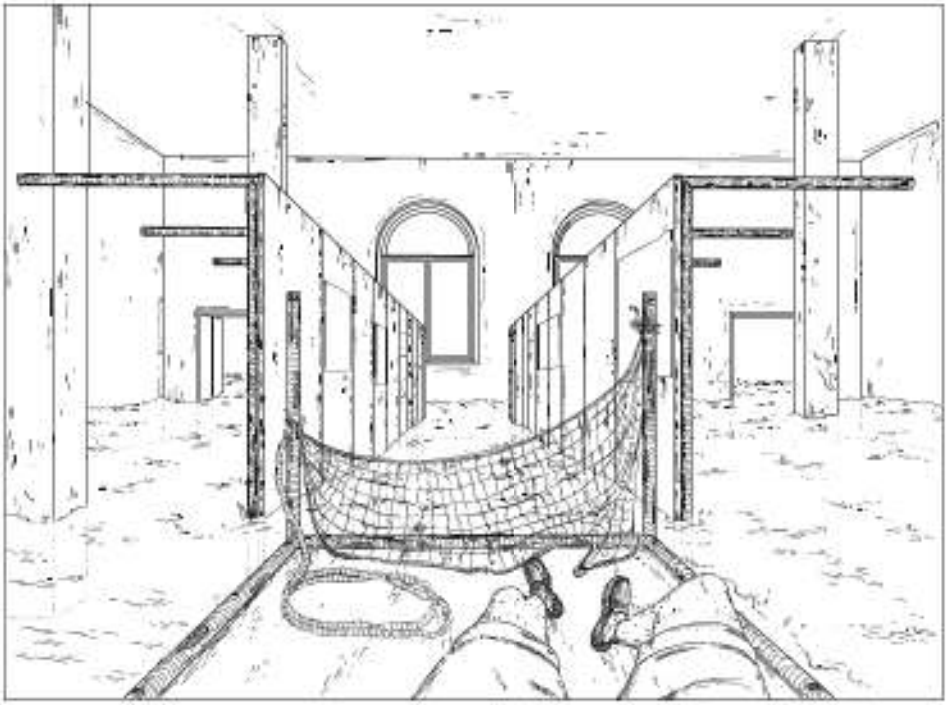

× Supine
Like a boat taking to the sea, it.
Like sailors, we set sail on its hardwood back,
making our way among the wreckage
of forgotten magazines.
[Turned upside down, on its stomach]
The table, which is not a table but a boat
of ideas, trespasses into the unknown
and floats and exudes its iridescent truth!







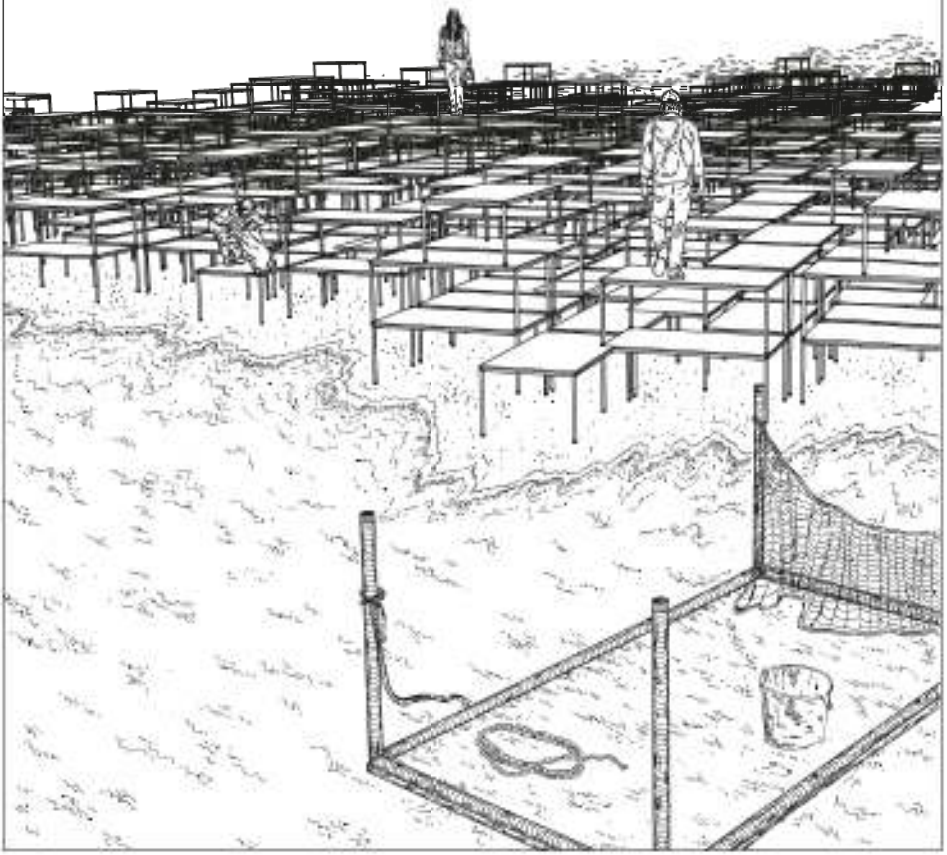




o *Storage*

A turbulent journey.
Numb from the long whirlwind of desires,
it finally unites with its peers, all the same
but never identical.
[Unity is sought]

=> *New lands are then reached.*
Tables meet, dialogue, join in celebration and
that become mountains, corridors,
rooms within rooms, high walls and
still naive projects.



Captions

pages 48–49

PORTRAITS Old and new tables.

pages 59–61

SURVEYS Designs of the tables, by Enrico Calore and Eva Jervolino.

pages 73–75

SOLITUDE Layout in Warehouses 6 and Santa Marta.

"Mezzi Scarpa" tables at Palazzo Badoer. The new format, created starting from 2020, measures 181 x 50 cm, and allows to be used for ex cathedra lessons and, by combining two tables, to restore the original format.

pages 84–87

TRANSPARENCIES Former Classroom A5 at Ca' Tron, before and after floor restoration work.

The new conference room at Ca' Tron.

pages 93–95

ACTION Spaces and tables make it possible to set up rooms for seminars, workshops, labs, W.A.Ve., exams.

pages 100–105

IN EXHIBITION The front and back of the tables build a multitude of possible spaces and experiences.

The photographs were taken by the Iuav Photographic Laboratory.

Acknowledgements

The research that led to this book was a journey shared by a heterogeneous group of people united by their connection to Iuav. My thanks to everyone for their active and enthusiastic support.
The staff of the Property Management Service of the Università Iuav di Venezia was involved, in particular Mauro Maiotti, Silvia Mander and Nereo Fabris, who together with other co-workers take care of the university's campuses by maintaining efficient spaces, equipment and furnishings. It is to them that we owe the care of our places of work and study, and of course the tables, the proper management and maintenance of which ensures classrooms conducive to learning.
The Photographic Laboratory comprised of Umberto Ferro and Luca Pilot contributed to this project. They are committed to taking photographic images that are indispensable for the faculty's research and teaching, as well as providing a record of everyday life at the university.
Important support came from the University Archives, and in particular from Chiara Cabbia, whom I thank for helping me with archive research that doesn't always lead to the hoped-for destination, but (happily) leads one astray into other Iuav stories.
Thanks to Riccardo Domenichini of the Iuav Project Archive, and to Laura Moglia of the Iuav Events Technical Service, who turned the reduction in in-person events due to the pandemic into an opportunity for all of us, dedicating herself to the graphic design of the book.
The availability of Francesco and Paolo Zanon was crucial, welcoming us into their workshop in Venice, allowing us to witness their laborious work and to take a series of photographs and videos, for which I thank Carlo Ferro of the LAR, the project's support laboratory, for the initial editing. The memories of Guido Pietropoli, Franco Mancuso and Valeriano Pastor were indispensable, as were those of Tobia Scarpa, who allowed me to trace the small family table, probably the precursor of ours, dedicating an intense day of affectionate chats.
Thanks to MariaAntonia Barucco, Guido Guidi, Giovanni Leone, Marco Mulazzani, Stefano Munarin and Maria Chiara Tosi for sharing their domestic "snapshots" and above all for experiencing the versatility of the Scarpa tables with novel functions.

December 2024
printed by Digital Team, Fano

**Tables that demonstrate how democratic design can not only combine beauty and functionality,
but remind us that engagement and the sharing of ideas are nourished by well-designed objects and spaces.**