

the *changing* city

flexibility and change of use of three industrial industrial structures in Carpi

▪ ▪ ▪
▪ ▪ ▪
▪ ▪ ▪
▪ ▪ ▪

▪ ▪ ▪ ▪ ▪
▪
▪ ▪ ▪ ▪ ▪
▪
▪ ▪ ▪ ▪ ▪

▪ ▪ ▪
▪ ▪ ▪
▪ ▪ ▪
▪ ▪ ▪ ▪ ▪



POLITECNICO DI MILANO - POLO TERRITORIALE DI MANTOVA

SCHOOL OF ARCHITECTURE URBAN PLANNING CONSTRUCTION AND ENGINEERING

MASTER OF SCIENCE IN ARCHITECTURAL DESIGN AND HISTORY
A.Y. 2021/2022 - DECEMBER SESSION

STUDENT: CARMINE RENALTO

SUPERVISOR: LUIGI MARIO LORENZO SPINELLI

CO-SUPERVISOR: MARCO PATRUNO

CONTENTS

FUN PALACE / Cedric Price
THE PLUG-IN CITY / Archigram
AGRONICA / Andrea Branzi & Archizoom
INDUSTRIAL DISUSE: *ARCHITECTURAL SKELETON*
ARCHITECTURAL TYPOLOGY
AREA OF INTERVENTION
INTERVENTION GUIDELINES
DOCUMENTATION
PHOTOGRAPHIC REPORT
DESIGN PROCESS
PROJECT
CONCLUSION
BIBLIOGRAPHY

FUN PALACE / CEDRIC PRICE

Cedric Price (1934-2003), born and raised in an area of the Staffordshire Midlands known as the Potteries (centre of the English pottery industry since the 17th century), was an English architect and town planner. His father Arthur is an architect and Price's interest in architecture can be traced back to his childhood: by the age of 9, his notebooks were full of sketches of local houses, building plans and village pictures. At the age of 17, Price begins to study at St. John's College in Cambridge, before graduating from the A.A. (Architectural Association) in London in 1957.

From 1960 onwards, he begins to establish himself as one of the main exponents of the so-called British avant-garde and, through his production, which includes writings, drawings and lectures, he questions the traditional vision of architecture, mainly linked to the act of building and, probably also in relation to its socio-political context (post-war Great Britain), to the use of buildings as a tool for institutions to consolidate their power.

Price is very severe towards his country, criticising its propensity to preserve and maintain buildings indefinitely, as well as the urban and spatial planning regulations that are, according to him, outdated.

Cedric Price's vision of architecture is based on the principle of indeterminacy.

He conceives architecture as a series of adaptable and temporary interventions, with an approach that is no longer based on the act of construction but rather on the concept of time, thus understood as a succes-

sion of events (and no longer of objects in space), which lose their physical, material dimension, but are instead ephemeral in nature, undefined, constantly changing, founded on the concepts of flexibility and adaptability, in which people - the users - are active characters and contribute to the definition of spaces and of architecture itself.

In 1961 he realizes the London Zoo aviary, one of Price's few projects actually built, with the help of engineer Frank Newby and photographer Lord Snowdon. The project consists of a three-dimensional metal structure (24m high x 45m long), consisting of four aluminium tetrahedrons and a network of steel cables, completely covered with aluminium mesh.

Of all his projects, the best known is surely the Fun Palace (1961).

A highly technological project, never realised but recognised as the manifesto of Cedric Price's Architecture. The greatest contribution we recognise in Price is mainly in the theoretical field as almost all of his projects remained utopias on paper, mostly ideas, to be studied, analysed and reworked, which nevertheless had a great influence on the new generations of architects, such as the Archigram collective and, more generally, on developments in contemporary architecture.

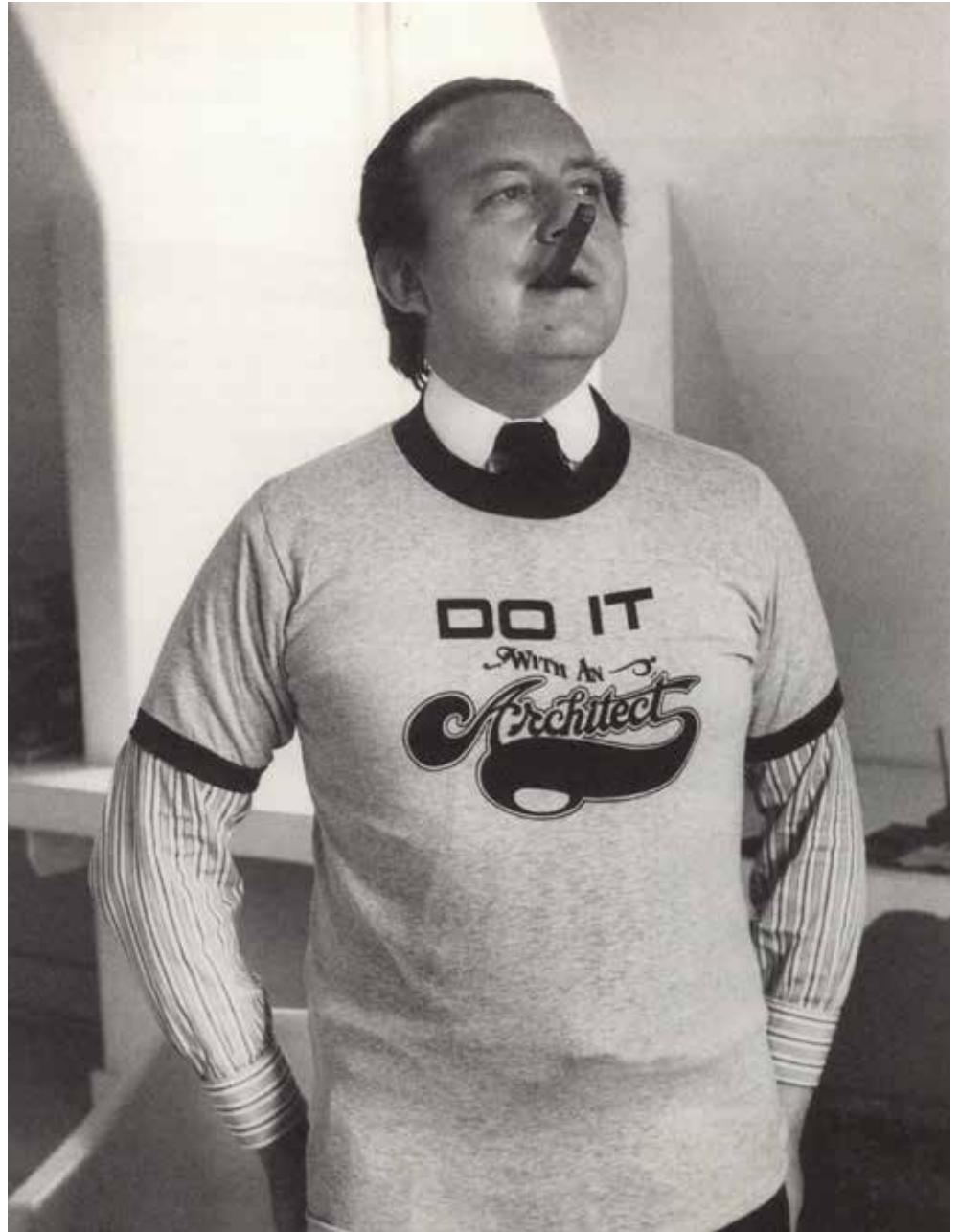


Fig.1 : Cedric Price

“We are building a short-term toy in which we can all realise the possibilities and pleasures that a 20th century urban environment owes us. It must last no longer than we need it to.”¹

[Cedric Price]

In 1962, the idea of the Fun Palace originates from the collaboration between the visionary theatre director Joan Littlewood, a cheeky and unbridled personality, and the so-called ‘anti-architect’ Cedric Price. Littlewood heads the company ‘Theatre Workshop’ and is the forerunner of new training and production methods, including audience participation, and succeeds with her methods in bringing plays to people from different places and social classes.

The idea originates not so much as an attempt to replace the classical conception of theatre, but to find a way to rethink the learning and teaching methods of modern post-war society, which were considered obsolete, and how to combine aspects of culture and education with those of entertainment.

Conceived as a constantly changing organism with a variable and indefinite programme, the Fun Palace would become the theatre of human life, in which the public - the users - would be the actors themselves, within an interactive context and at the command of the users.

The multidisciplinary nature of the project highlights the very high level of complexity behind the Fun Palace concept.

In addition to the client and collaborator - Joan Littlewood - other figures were indispensable to the process of defining the Fun Palace: Tom Driberg, journalist and politician, took care of the promotional aspects; Gordon Pask and the members of the Cybernetics Committee were in charge of the ‘changeable’

aspects of the architecture, through algorithms and logic gateways.

A report, the date of which is not precisely known, by Littlewood and Price reveals what the objectives of the Fun Palace are:

“Each age projects its ideas in its architecture, sculpture, theatre, painting, literature and in apparently spontaneous expression in the streets, public houses and work places.

Leisure and freedom from war and want have been necessary for the development of civilised arts and crafts, and during such times man’s taste for danger and conflict has been channelled into art, science and sport.

We have entered now into an age of leisure and freedom from war without the equipment to enjoy it.

Much of the education still practised in schools and universities is obsolete and the majority have to find their own way of surviving the pleasures of planet dwelling.

One of the first needs is for areas in each city where we can learn to work and play.

Space is needed and good sites by rivers and water, where the background of movement and space can be enjoyed.

There should be allowance made for many forms of activity, which should not be dictated.”²

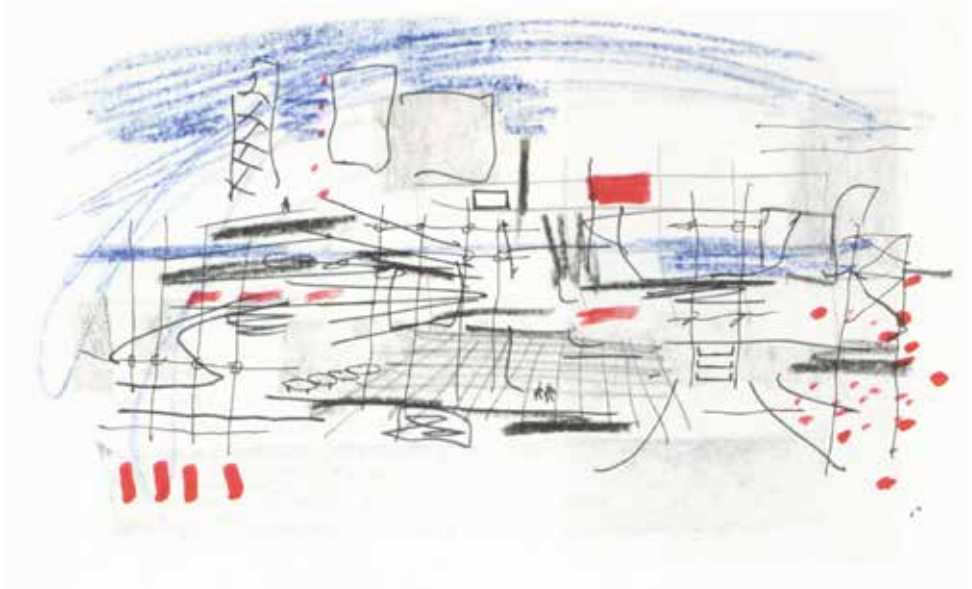
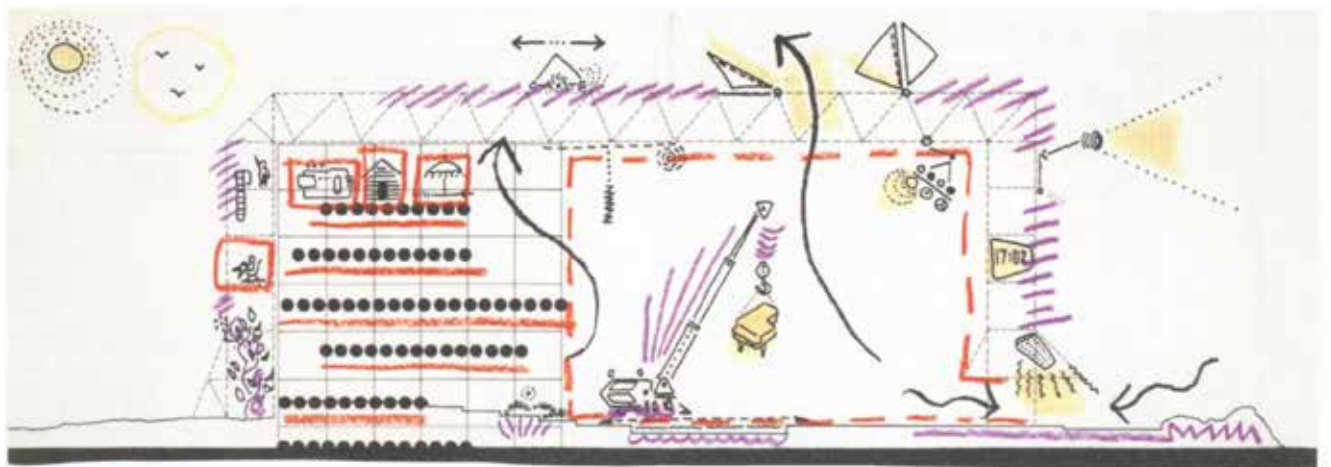


Fig.2: early conceptual perspective sketch for Fun Palace, c 1963

Fig.3 : cross-section showing potential uses of interior spaces



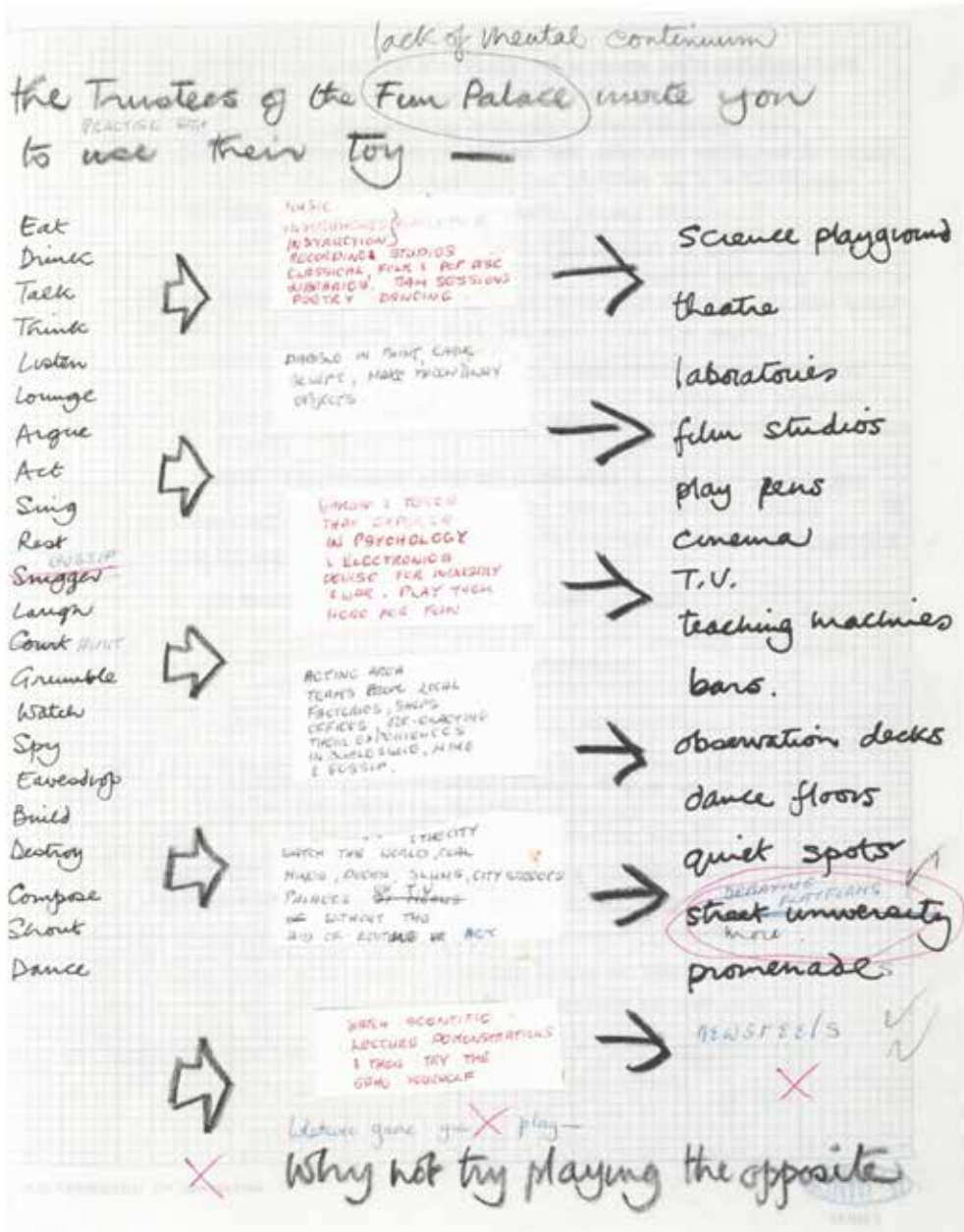


Fig.4: draft layout of a page from a Fun Palace promotional pamphlet outlining some of its possible uses, c 1963

51#

FUN PALACE FILM

SUGGESTED MODEL SEQUENCE

COMMENTARY	VISUALS
1.	FLAT WHITE HOUSING. 3 CLOWNS - VICTOR SPINETTI, BARBARA WINDSOR, BRIAN MURPHY, - HEARD SHOUTING OFF SCREEN.
2.	GLENGALL SEQUENCE FINISHING IN ON BLACK CASE
3. Cockney Voice: What the hell's that? Vic: It's a bit of a tangle, isn't it?	<u>STUDIO OVER SHOULDER SHOT.</u> 3 CLOWNS WATCHING AS MODEL EMERGES. A JUNGLE OF STRUCTURES - SOME TOPPLED OVER, SOME TANGLED.
4.	3 CLOWNS SORTING BITS.
5. Architect:	CLOWNS ARRANGE BITS AS HE TALKS

A framework of structural towers services the adjacent volumes, providing power, heat, light, water waste disposal, goods and means of escape - in effect a 'plug-in' service grid.

The smaller volumes contain things like restaurants, workshops, bars; forklifted into position on the variable decks.

The larger volumes contain temporary enclosures for such large-scale activities as concerts, theatre and rallies.

These enclosures are suspended at various levels above the ground from the high level frame, and are built and moved with the aid of the travelling gantry crane spanning the structure.

The structure is large but the scale is

Fig.5: page from the Fun Palace film script written by Cedric Price and Joan Littlewood, 1963 or 1964

“ARRIVE AND DEPART by train, monorail bus, hovercraft, car, underground or on foot at any time YOU wish - or just take a look as you pass by. Information screens will show you what is happening. No need to look for an entrance - you can walk in from anywhere. No doors, entrance halls, queues or attendants - it is up to you to decide how to use it. Look around - take a lift, an escalator to anywhere or to anything that looks interesting.

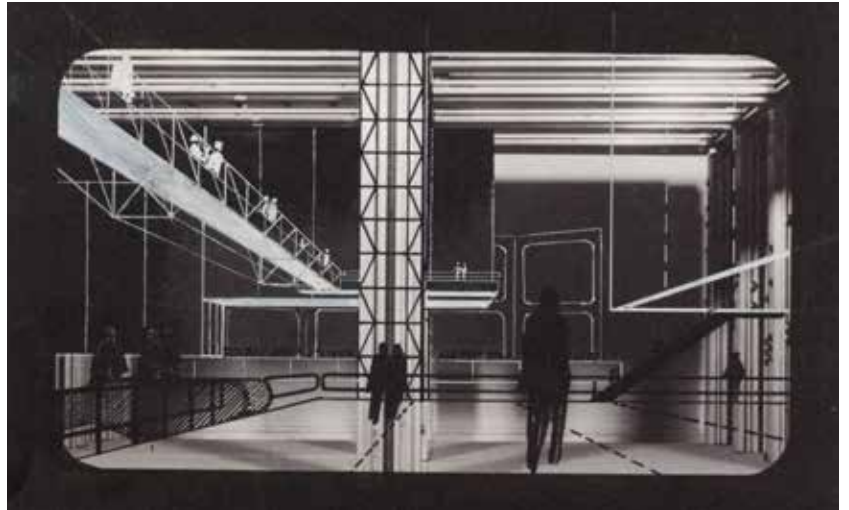
CHOOSE what you want to do - or watch someone else do it. Learn how to handle tools, paint, children, machines, or just listen to your favourite song. Dance, talk or get lifted up to see how others make things work. Sit with a drink in your hand watching the space and tune in to what is happening somewhere else in the city. Try to raise a ruckus or start a painting - or just lie on the ground and look at the sky.

WHAT TIME IS IT? Whatever time of day or night, winter or summer - it really doesn't matter. If it rains, that roof will stop the rain but not the light. The artificial cloud will keep you cool or draw rainbows for you. Your feet will be warm as you gaze at the stars - the atmosphere clear as you join the choir. Why not enjoy your favourite meal up there where you can watch the storm?

WHY ALL THIS? “If any nation will be lost or saved by the character of its great cities, that nation is ours.”³

[Cedric Price]

Fig.6-7: illustration
of the interior spaces
of the Fun Palace



The image is that of an enormous scaffolding, as if it were a building being completed or under continuous construction, close therefore to the aesthetics of the machine, characterised by prefabricated structures, cranes moving mobile elements, temporary structures that can be easily assembled and disassembled, like a kit of pieces to be assembled, available for users to learn and have fun with, to 'break' with seriality and the monotony of everyday life.

Influenced by the social context of the time, Price elaborates a project that goes beyond the usual conception of architecture and tries to take in, like an organism, information and elements from different fields, such as the emerging sciences of the time, e.g. cybernetics and computer science, passing through game theory to theatrical situationism.

During the 1950s and 1960s, themes related to the concepts of indeterminacy and improvisation became increasingly popular in various fields, from music to art.

One considers John Cage's randomised music rather than the artist Gustav Metzger who invited visitors to witness the self-destruction of his acid-painted works in London galleries.

In addition, both Price and Littlewood were acquainted with the poet Alexander Tracchi, a famous situationist, from whom they acquired the concepts of *dérive* and *détournement*: the former concerns strategies of creative urban wandering without a specific goal; the latter involves the insertion of random events into ordinary situations.

The Fun Palace is conceived as a place of social aggregation rather than a real 'palace', in which to carry out ever-changing activities, such as learning to cook, paint, play music, attending cultural exhibitions, shows, practising sports: the architecture, therefore, coincides with the (variable) programme, giving a three-dimensional spatial-temporal quality to the project and going beyond the classical conception of architecture as a mere construction act, as events in time and not as

objects in space.

Price, in this sense, revolutionises the role of the architect as a simple builder, which now more clearly acquires that of a spatial agent, coining the term "anticipatory architecture", thus applying an approach that is not based on the idea of solving a problem but rather of defining a question since, according to Price, "architecture is too slow to solve problems", thus producing an architecture capable of modifying itself and adapting to the continuous changes suggested by society.

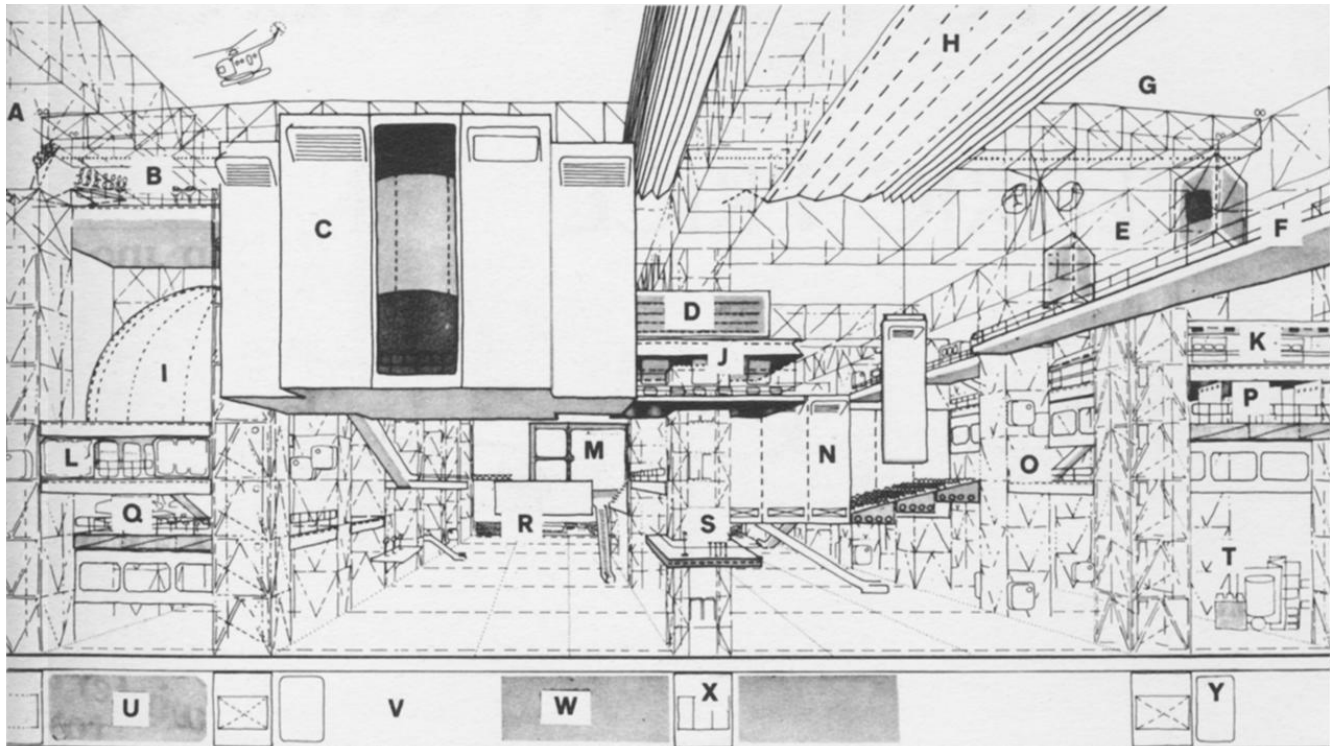
During the search for possible locations for the project, abandoned industrial sites are selected, which best lend themselves to temporary re-functionalisation, due to their spatial characteristics and the freedom of 'movement' they offer.

Price and his collaborators, after several searches, manage to obtain a free area on which to build the Fun Palace, but due to various bureaucratic problems, partly related to the complexity of the project itself, the project will never be realised.

Despite this, the Fun Palace remains Price's best known and most studied work, a 'heroic act' considering its context, an innovative thrust for future generations (considered the father of the Centre Pompidou). It is no coincidence that contemporary interest in his work has increased, as in all of his production - particularly in the Fun Palace - there are highly topical themes that our society must prepare itself to face, concerning new ways of thinking about housing, education, technology and the environment.

- | | |
|-------------------------------------------|----------------------------------|
| A. High-level sight lighting | N. Auditorium-under construction |
| B. Long-distance observation deck | O. Observation |
| C. Circular theatre-part enclosed | P. Open exhibition |
| D. News panel | Q. Eating and drinking |
| E. Long-distance information screens | R. River-craft access |
| F. Moving catwalk | S. Rally platform |
| G. Gantry crane | T. Children's town |
| H. Adjustable 'sky' blind over rally area | U. Sewage purification plant |
| I. Inflatable conference hall | V. Service |
| J. Public observation and control | W. Storage |
| K. Restaurant | X. Vertical Service |
| L. Workshops, etc. | Y. Heating and ventilating |
| M. Open 6-screen cinema | |

Fig.8: interior composition of the Fun Palace



THE PLUG-IN CITY / ARCHIGRAM

London. 1960s.

The Archigram collective can be considered the leading architectural avant-garde of its time.

Born as a magazine of student projects, it soon became the benchmark of London architectural research in those years.

Between 1961 and 1970 they publish nine issues and, starting with the third issue (1963), six students unite under the official name Archigram.

The choice of the name derives from the desire to present and establish itself as a fast communication tool, reminiscent of the idea of the telegram, the aerogram, and the magazine is the medium through which ideas and concepts can be “liberated”.

Consisting of six members belonging to two different architectural firms, Peter Cook, Dennis Crompton and Warren Chalk on the one hand and David Greene, Ron Herron and Michael Weeb on the other, it is inspired by technology and its potential to produce a new world, a new reality represented through evocative and modern images, often extravagant and bordering on utopia, of hypothetical projects that have never been realised.

Archigram was born in a context in which modern ideas were gaining ground and stood as an alternative to, if not a break with, the ideas of thought according to which architecture was idealised and its images made static.

The avant-garde group led to a re-evaluation of the three fundamentals of classical Vitruvian and static ar-

chitecture: firmitas (solidity), utilitas (utility), venustas (beauty).

The Archigrams believe that firmitas is not indispensable to the attainment of utilitas and venustas, thus overturning what are the architectural dogmas on which the entire classical tradition is based and which were later recovered by modern architecture: the concepts of staticity and monumentality belong to the past, modernity is dynamic, complex, changeable, and this is how architecture must be, as a mirror of society and its time.

Thanks to this group, all the elements that until now had been ‘discarded’ by architecture - tensile structures, caravans, tents... - take on a new value and become useful in the definition of a new language able to keep up with the main technological, cultural and artistic trends of the time, with particular attention to ‘pop’ influences.

“...somebody once said to me, ‘Don’t you want to see it built, don’t you want to be an architect?’ To my mind, the assumptions behind these questions betray a misunderstanding as to what the work of Archigram represents. A misreading of it as a set of proposals, a set of windows through which to see a ‘new world’, is only a rather pathetic regurgitation of the dogma which asserts that architectural drawings are representations of something that wishes to become.”⁴

[David Green]

Fig.9: from left to right: David Greene, Warren Chalk, Peter Cook, Michael Webb, Ron Herron, Dennis Crompton



ARCHIGRAM
PAPER ONE

you can roll out steel any length
you can blow up a balloon any size
you can mould plastic any shape
Bridges that hold the earth together
THEY BUILD ROADS
you can roll out paper any length
take children's dictionary THAT'S LONG

you can build concrete any height
ROCKS resist fire or heat or one
fire or not fire
you can weave straw any mesh
THEY THIS TABLE prove got a top there
top and four legs
you sit IS it you sit ON it, or UNDER
it or half under

THESE ARE THE ARCHITECTS in a moment of the spirit of the
new generation of architecture - future papers will try to
Project further the ethics of this generation
In this paper David Green and
Peter Cook present for Archigram
the new architecture as they
see it

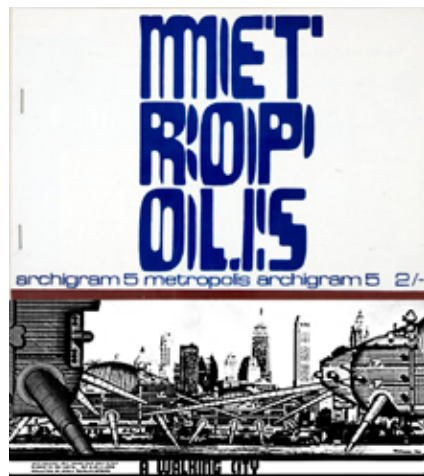
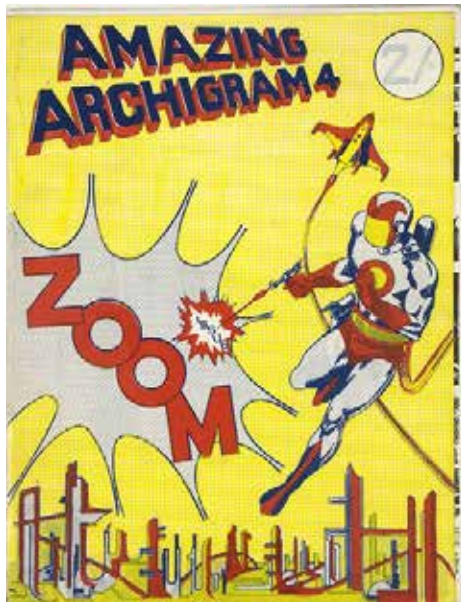
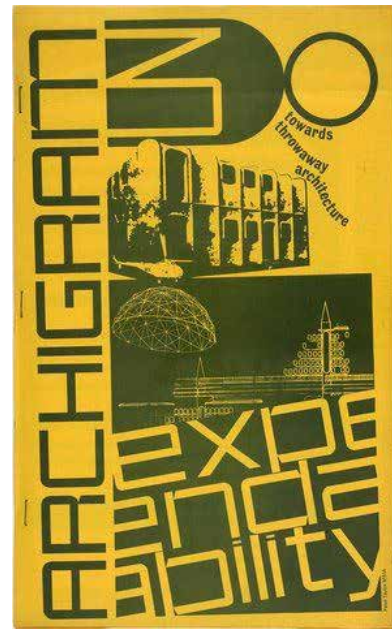
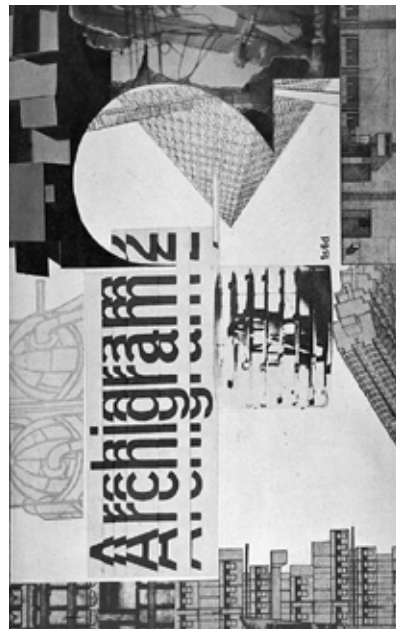
AND FURTHER COMES
1957
the concept
shaped technology from
architects' reports
1958 Hoover Hall was the
outstanding work
"PROGRESSIVE MANUFACTURING
ASSOCIATION" scheme of
PETER R. SCHUBERT
Further the ideas
termed "domestic"
FROM JACQUES
defined buildings
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050

The love is gone
The poetry in bricks is lost
We want to drag into building
sons of the poetry of countdown,
orbital helmets, Discard of
mechanical baby transportation
and its walking
Love gone

apostrophe design and layout
idea and structure and construction
and that building the heavy on the heavy
At ground level, however, there are the
flavor around with like and structure
and construction and planned build of
lost

our fascinating intricate
message are trapped in surface
rows, points all hidden in
art and front, so how do love

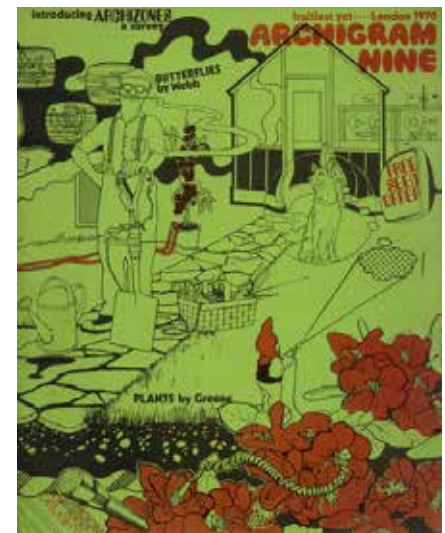
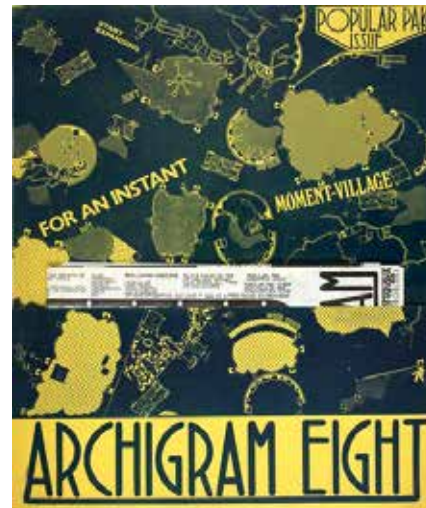
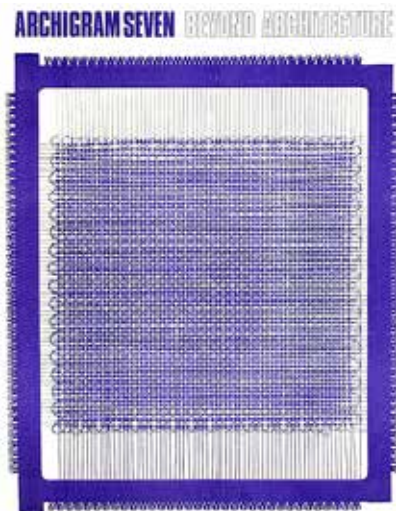
A new generation of architecture must arise
with forms and spaces which seek to reject
the concepts of "orders" yet in their
retail store concepts, it may indeed be
to-lead the increasing modern world
as an arena to reorganize.



«It isn't necessary to be dreary to make a point, or to be profound to have something to say; some of the greatest insights in the world accompany a joke. And many of the mind-blowing ideas about futures in never-neverlands have originated off the pages of comic books and science fiction picture backs. Cartoons help discover the hidden realities of life, where straighter communications may fail»⁵

[Warren Chalk]

Fig.10-18: from top left to bottom right, the covers of the 9 issues of Archigram magazine



Their designs are conceived as ‘kits of parts’ produced by industry, mobile elements that can be replaced, disassembled and easily reassembled, based on the concept of indeterminacy, with the aim of uniting space and, at the same time, freeing movement, dematerialising the envelope.

We can therefore speak of ‘assembled architecture’ that includes elements from several fields, even those not strictly related to the world of architecture, but nevertheless part of the modern trends of the 1960s: from technology to electronics, from pop-art to science fiction to military apparatuses or biology. This complex and heterogeneous imagery would later serve as inspiration for the High-Tech architectural movement, eventually inspiring all the various post-modern trends of the following decades.

The main ‘actors’ of Archigram’s (hypothetical) architectures are therefore no longer those ‘heroic’ technological beauties that the Modern Movement current looked up to, such as silos, ships, planes, etc... Now, all those apparently worthless and hidden elements/objects acquire greater importance, but which best represent what was the technological development of the late 20th century: televisions, air-conditioners, electric cables, seals, plastic objects. Through what is to all intents and purposes a celebration of the technology and disorder that dominates cities, Archigram’s ‘construction kit’ expands and updates and, through the infinite compositional possibilities of these elements, the group proposes picturesque, luminous, moving images.

The best known image of Archigram is surely the eccentric and singular Walking City, by Ron Herron (1964). In this work, the city changes into a kind of large spaceship, equipped with telescopic ‘legs’ that, thanks to their extension, allow the movement and displacement of the object, which resembles a machine but, at the same time, a living organism. The city, according to Archigram, must constantly

change, together with its inhabitants.

The vision arises in the aftermath of a possible nuclear devastation that has hit the world, so that people find themselves obliged to seek refuge away from the now-destroyed surface.

Another important project from Archigram’s production is the Plug-in City, by Peter Cook, in the same year as the Walking City.

Cook proposes an idea of a city characterised by the absence of buildings, contained in a megastructure in which everything is interconnected and wired by means of circulation and communication systems, in which we find all the essential human services and spaces and dwellings are assembled with the help of cranes placed on tracks.

The city is thus understood as a set of functions, and is manifested in the continuous exchange that takes place between man and the machine that houses him.

Cook’s aim with this project is to realise a city based, first and foremost, on the principle of collectivity and equipped with interchangeable housing units and connection and transport systems, thus guaranteeing the vitality of the city in an era characterised by sudden and continuous change.

This project, in particular, represents a useful reference later in the development of the design proposal of this thesis.

“The fundamental characteristics of futuristic architecture will be expendability and transience. Our house will last less time than we do, every generation must make its own city”⁶

[Archigram Group]

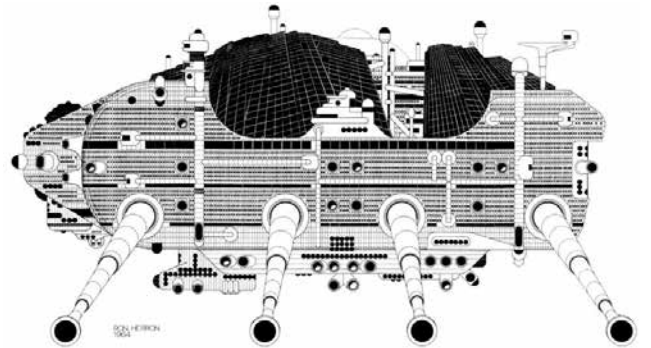


Fig.19: Ron Herron, Walking City, 1964

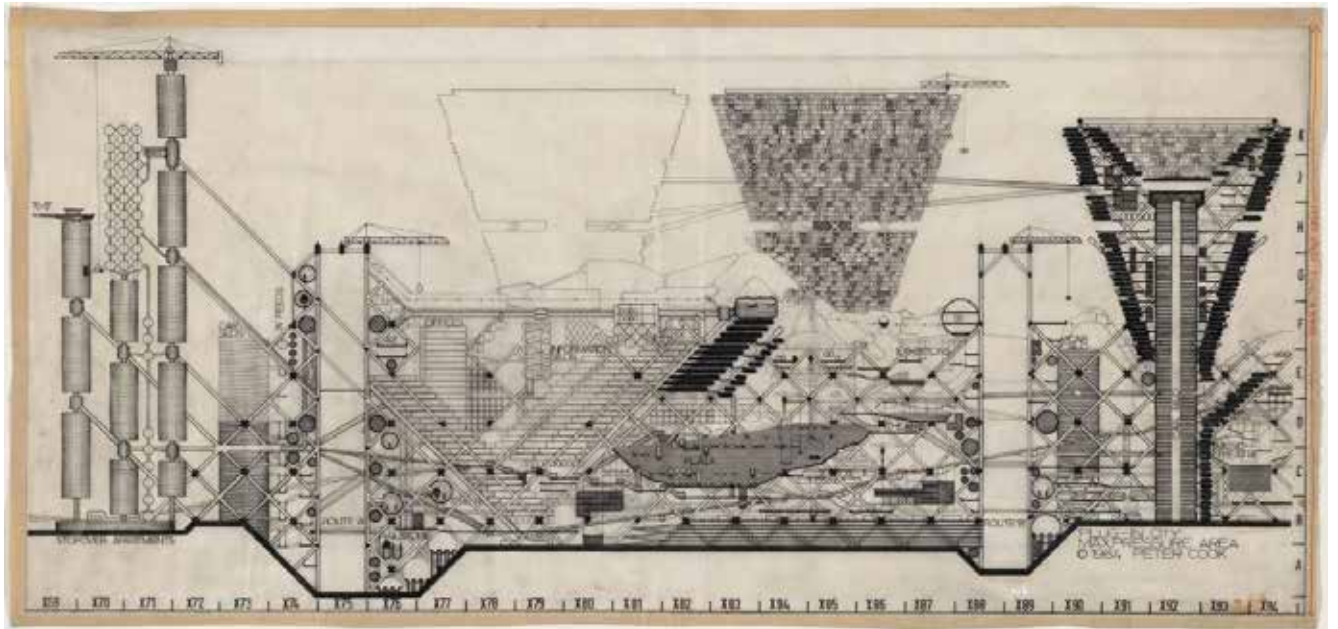


Fig.20: Peter Cook, The Plug-In City, 1964

“The fundamental characteristics of futuristic architecture will be expendability and transience. Our house will last less time than we do, every generation must make its own city”⁷

[Archigram Group]

[Warren Chalk]

“The happenings within spaces in the city, the transient throw-away objects, the passing presence of cars and people are as important, possibly more important in determining our whole future attitude to the visualization and realization of city”⁸

[Warren Chalk]

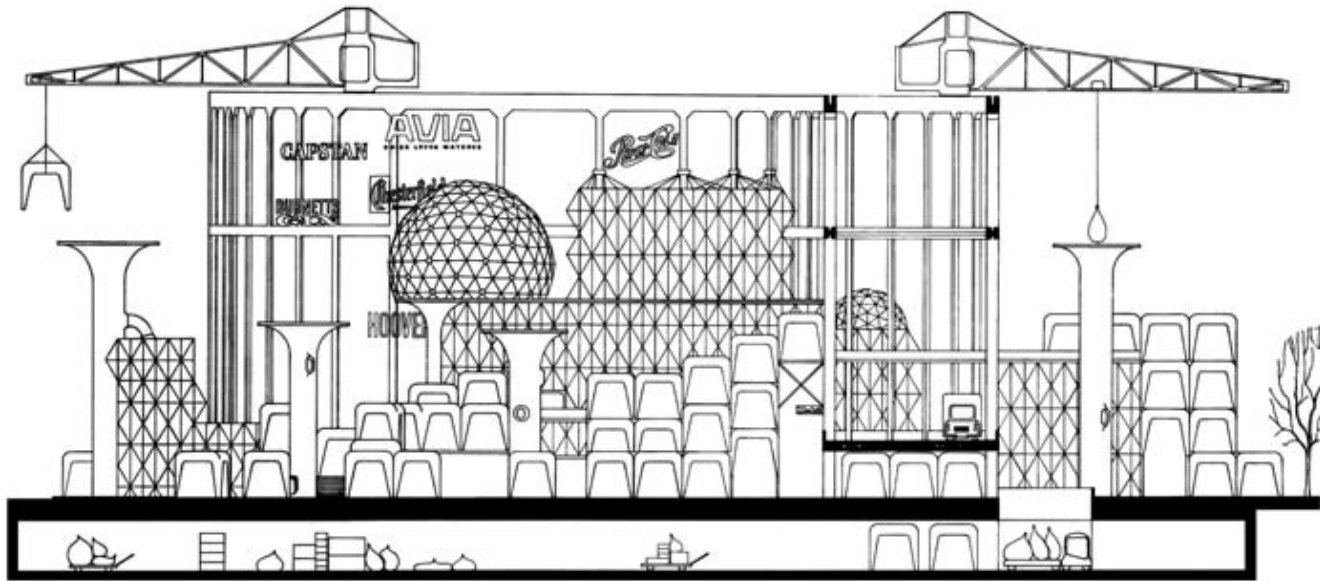


Fig.21: Peter Cook and David Greene, Nottingham Craneway (Shopping Viaduct) project, section, 1962

AGRONICA / ANDREA BRANZI & ARCHIZOOM

The Archizoom group is founded in Florence in the late 1960s, more precisely in December 1966, in the aftermath of a course on the space of involvement. Among the participants are Andrea Branzi, Gilberto Corretti, Paolo Deganello and Massimo Morozzi, and it is from these four newly graduated architects from the University of Florence that the first formation of the Archizoom originates, which, two years later, will also be joined by designers Dario and Lucia Bartolini.

The course in which they participate and where they meet is important for understanding the environment and context in which the Archizoom collective is born and develops.

The professors of this particular course were Ugo la Pietra (1938 -), an artist, architect and designer, and Ettore Sottsass Jr. (1917 - 2007), an architect, photographer and one of the most important figures in design, who soon became the patron of the emerging young group and their close friend.

This seminar lays the foundations of radical architecture, the school of thought to which the Archizooms adhere and of which they become the main spokesperson.

The name Archizoom originates from the union of the radical collective Archigram, to emphasise that they share the same ideals as their British colleagues, and from the word “zoom”, which recalls a magazine of the time, the “image magazine”, and it is precisely images, rather than technical drawings, that will become Archigram’s favourite communicative tool to give free

rein to their revolutionary ideas.

Also in 1966, after meeting each other, Archizoom and Superstudio, then under the solitary leadership of Adolfo Natalini, set up the exhibition called ‘Super architettura’, the manifesto par excellence of Italian radical architecture.

The exhibition, which takes place in Pistoia and features ideas and objects personally produced by the members of the two radical architecture studios, aims to revolutionise the Italian architecture and design of those years, considered by Archizoom to be weak and sterile of innovative ideas.

It is on this occasion that some of the icons designed by Archizoom are born, such as the ‘dream bed’ (1967), a chaise longue reminiscent of exotic settings with exaggerated opulence, aimed at the bourgeois target group of the time, exaggerating the kitsch and languages that were fashionable at the time. The same ‘Mies chair’ (1969) is intended to make fun of the modernist and minimalist lines, referring precisely to the German architect, while the pony pad is a reference to Le Corbusier.

Archizoom’s work starts from the idea of inserting the dimension of research in a more massive form within architecture, which in those years was much more tied to the concreteness of the profession rather than to experimentation.

'Good guys, bad enough not to be inhibited by old speeches'⁹
[Ettore Sottsass]

"Someone always has to panic if the meaning of things is to be continually revealed, and also if the organisms of power are to be broken up and reshuffled a bit"¹⁰

[Archizoom Associati]

Fig.22: Archizoom, 1968. From left, Andrea Branzi, Gilberto Corretti, Paolo Deganello, Massimo Morozzi, Dario and Lucia Bartolini.



The group's main production is therefore centred around drawings and collages, which often represent utopian scenarios, far from reality, in which architectural and technological elements are mixed with pop art with the principles of mass consumerism, inspired by the architectural and graphic language of the British group Archigram, acquiring a fantastic dimension in which creativity generates a fluidity between several artistic and expressive languages.

In these years, therefore, we no longer see static, solid, concrete design; with the Radicals we see a transposition of these concepts into utopian, hypothetical, abstract images that speak of an imaginary future, or of a reality far removed from that time. Their production is also characterised by an exasperation of reality, through which they aim to highlight the problems of society and cities, made evident through the use of imaginative storyboards, collages of different elements, visual materials, to add emotional depth to the project.

The most important research project produced by the group is the 'No-stop City' (1970), with which they hypothesise a new way of making and inhabiting the city: a continuous and indeterminate space, devoid of architecture, or rather, in which architecture and countryside merge into an indefinite, indistinguishable continuum, devoid of separations between inside and outside.

The research is developed in a series of homogeneous diagrams representing non-figurative architectural scenarios, ideal cities devoid of architecture but endowed with the main services necessary for human beings, for a comfortable life, distributed within the fluidity of a standardised space, potentially repeatable ad infinitum, like a lymphatic system.

In this work there is the concept of homologation, of the "tabula rasa", in opposition to the alienation and individualism that characterised the society of those years, and to make the idea of inexpressiveness even stronger, the initial diagrams are even typed, to then

turn into actual drawings but with an artistic rather than technical meaning.

Between 1971 and 1973, Archizoom's production and interest also shifted to 'dressing design', starting from the single element to the finished garment, and expanding the concept to the surrounding environment (from home furnishings to urban planning) so that it would be consistent with the design of their clothing.

During the 1970s, the universities are brought back into line, there is no room for utopia, the architects to be trained must be concrete professionals, not dreamers, and the new recruits are suppressed. Thus, in 1974, the collective split up, but some of its members continue to collaborate with other radical groups, to leave a legacy of all the ideas that characterised their research.

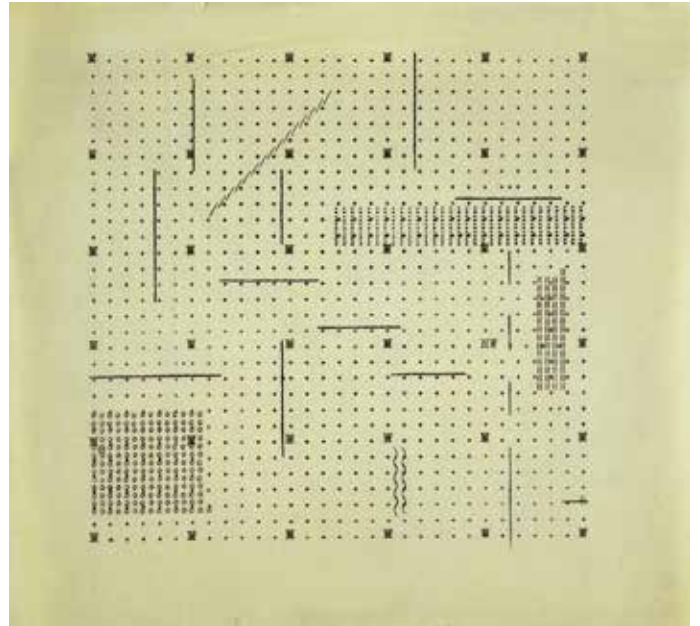


Fig.23: No-stop City, diagram

Fig.24: Superonda, modular sofa, 1967



The research and production of Andrea Branzi, a member of the Archizoom collective, is particularly interesting with regard to the concept of weak urbanisation, a concept found first in the No-stop City and later in his vision of Agronica.

Inspired by Hilberseimer's theories, including in particular the New Regional Pattern, Branzi narrates the city not as a collection of elements but rather as a continuous system of forces and relationships.

This project was commissioned by Philips Electronics in 1993-34, in collaboration with the municipality of Eindhoven, and is characterised by a horizontal spread over an area with a low settlement density - according to the principle of weak urbanisation - with one of its main objectives being to explore the possible relationships between agricultural and energy production. The concept of weak urbanisation refers, in turn, to that of reversibility, typical of the agrarian field, in which architecture loses its classic static and fixed connotation, becoming a free series of components, like a construction kit.

The approach Branzi uses is an experimental one, involving the arrangement of different activities and volumes on the territory that can change over time, with destinations that are not defined a priori but vary according to changing demands, as happens in agriculture.

The reference to rural agriculture is important because it offers a response in opposition to the rapid growth of 20th century cities and their suffocating density: by merging agricultural concepts with those of the industrial and technological world, the result should have been an integrated agricultural park, a system of rotational work in which factory and farm work were alternately mixed, with the addition of services, improving the social and cultural conditions of the city.

The design envisages the creation of a regular mesh of cycle, pedestrian and tram routes, defining a homogeneous network of light distribution, allowing for the total permeability of the area.

The area is also covered by a diffuse punctiform structure (originating from the agricultural world using the piling system) on which beams rest and run, allowing the movement of roofs and suspended squares.

Within this regular mesh, services, lighting systems, and gardens are arranged in an autonomous manner, like a superimposition of different layers, independent but relating to each other: an urban mix in which there are indistinctly dwellings, places for research, artistic, cultural, and technological laboratories, services for commerce, spaces for leisure, and productive, agricultural and industrial areas.

Agronica's ultimate goal, therefore, is to devise a product that is appropriate to the time of 21st modernity, characterised by incomplete, elastic and diffuse sub-systems, in contrast to the concepts of definitive and static, inherent in classical modernity to which radical groups were opposed.

“Abandoned industrial areas, transformed into leisure and creative facilities, museums, car parks. Abandoned tertiary areas turned into hotels, schools, housing. Churches transformed into offices, galleries, theatres. Villas turned into computer centres, study centres, representation centres. Historical Centres managed as Shopping Centres now compete with Shopping Centres that present themselves as new Historical Centres.”¹¹

[Andrea Branzi]

Fig.25: Andrea Branzi, Agronica, model image



INDUSTRIAL DISUSE: *ARCHITECTURAL SKELETONS*

The phenomenon of industrial disuse, in Italy as well as in Europe, turns out to be rather widespread as well as being characterised by a high degree of complexity, which derives from its often heterogeneous components, which make its control and management difficult.

This phenomenon consists in a process of partial or total discontinuation of certain urban or suburban areas and/or buildings or building systems, sometimes with very different characteristics.

Of course, the problem of decommissioning does not only concern industrial buildings and/or areas but often also affects different typologies, including markets, railway stations, tertiary and commercial buildings, hospitals, schools, churches.

The industrial typology, however, remains the one most prone to be subjected to this problem, as the obsolescence process to which all industrial buildings are subjected is more rapid than for other building types, as rapid as the changes to which modern cities are subjected, with ever-changing and ever-changing needs.

Thus, a space or a building that has been used up to that point and has fulfilled its original function, even optimally, suddenly finds itself no longer suitable for responding to the new needs that society and the city require, and the speed with which these buildings come into being is often the same as the speed with which they are disused, giving rise to the phenomenon of 'disposable' architecture, which produces nothing

but empty containers, waiting to be reused, demolished or, in the worst cases, abandoned to themselves. These areas, spread throughout the territory, are mainly located in what are, or were, urban economic districts of cities, which, affected by a production crisis in some sectors due to the deindustrialisation phenomenon that occurred during the 1970s, triggered a process of decay starting from the site itself and reaching the surrounding context, also compromising its social and economic aspects.

Both in Italy and in Europe, the crisis that hit the industrial sector and led to the consequent abandonment of facilities can be traced back to a number of different reasons, certainly including the incompatibility of the old sites with the new technological changes of those years, as well as the new socio-economic and productive organisation of the territories, with the consequent delocalisation of production areas and the relocation of these sites to the city suburbs.

In addition to the phenomenon of decommissioning, industrial buildings are often the 'victim' of a sudden interruption of work, due to various reasons that may be, for example, bureaucratic snags, the bankruptcy of contractors, problems related to the nature of the site on which the work is being carried out, squatting, etc., resulting in the abandonment of incomplete structures on the area they were supposed to occupy, constituting an element of degradation for the territory, in various aspects, ranging from economic to environmental.

These signs in the area are known as ‘architectural skeletons’, a nickname that derives precisely from the only elements that have been built or that are revealed by the wear and tear of time, as a result of abandonment.

The term “skeleton” is often associated with the term “skin”, referring to architecture using the metaphor of the human body, as if it were an organism with its own life and autonomy; the part, fixed, rigid, which must support the body, guaranteeing solidity and stability, is the “skeleton”, the load-bearing structure; the load-bearing, light part, the external coverings, the curtain walls, everything that covers the structure and regulates the passage between inside and outside, on the other hand, is the “skin”.

Understanding what to do in cases like these, how to deal with the skeleton of a building, is the question an architect must ask himself, taking into account a multitude of factors, from the economic, more practical ones, to the social and cultural ones, to the aesthetic ones.

Faced with situations like these, the questions about their future and what is the best solution are many. Demolition, often, seems to be the best solution, at least in economic terms; however, it is still a destructive act and therefore leads to a waste of materials and of the work, even if unfinished, that had been done in the past.

The very process of recycling materials such as reinforced concrete and steel, the components that in most cases make up these structures, turns out to be quite complicated as well as unsustainable from an environmental and ecological point of view, precisely because of the nature and composition of these materials. But the formal qualities of the elements, as well as the condition of the materials at our disposal, can sometimes prove to be decisive in the decision-making phase, with regard to the fate of these objects which, usually, due to their particular characteristics, lend themselves better to solutions linked to public use. Therefore, demolition is opposed to the more conser-

vative solution of preserving what are the remains of a building, or of the past will to construct one, thus accepting the existing for what it is and for the potential it represents, in terms of recovery, reuse and transformability, as a regenerative element of an area of the city.

From here comes the possibility, but perhaps also the duty, as architects, to experiment with innovative solutions, recovering some or all of the available elements, using the skeleton as a support for new architecture or new social situations, adding, subtracting and/or replacing some of its components, integrating different functions, even of a transitory and non-definitive nature, or accepting its state purely as a ruin, allowing vegetation to re-appropriate the space in a controlled manner.

Each possibility of intervention, of course, does not exclude the other, so different approaches can also be envisaged in the new system, which must, however, be consistent first and foremost with the object of intervention, the context and its history, but also with the objectives that the project sets itself, based on the actual needs of the area, the city and the territory.

AREA OF INTERVENTION

The city of Carpi is a medieval town, later reconstructed as a fortified city, on the layout of the Castrum, the regular layout of which is still perceptible today when observing the historic centre and subsequent expansions.

The area that is the subject of this study is located in the industrial zone, which mainly comprises large buildings for production and management activities, mostly in the textile and plastics processing sectors.

Observing the historical evolution of the area, it can be seen that the industrial zone was formed rather recently, between the 1970s and the 1990s, in a position outside the built-up area of the city of Carpi.

The industrial area is bordered, on the west side, by the Brenner-Modena motorway axis (A22) and, on the east side, by Viale dell'Industria, which intersects the main roads (Via Nuova Ponente and SP1) ensuring a direct connection with the historic centre.

The infrastructure network, on the one hand, clearly delimits the three main areas that make up the city - the industrial area, the service area and the residential area - clearly legible from the change in scale of the urban texture; on the other hand, it guarantees a strong territorial connection, thus making the area a potential pole of attraction for the city and the territory, which can fit into Carpi's system of services and polarities.

The area on which the intervention objects are grafted, specifically, is located in a tangent position to the industry avenue and the service area, on the east

side, and bordered to the south by Viale Chimica and to the west by Via B. Franklin Street.

The tangency with all these elements, mainly with the service area, but also with one of the infrastructures most used by citizens, visitors and workers (viale dell'industria), represents the strategic aspect from which to develop a possible intervention.

The objects of intervention are the three warehouses whose projects date back to the early 1990s but were not completed, of which only the load-bearing structure and roof were built, initially intended for a use directly related to the nature of the area in which they are located, as workshops for artisan and/or industrial use.

TERRITORIAL FRAMEWORK



Municipality: CARPI (MO)

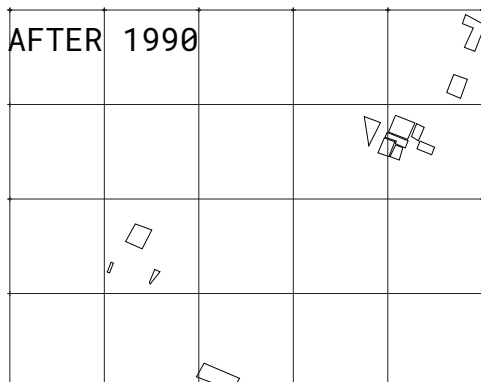
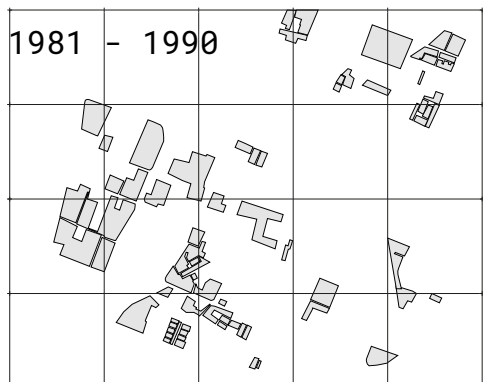
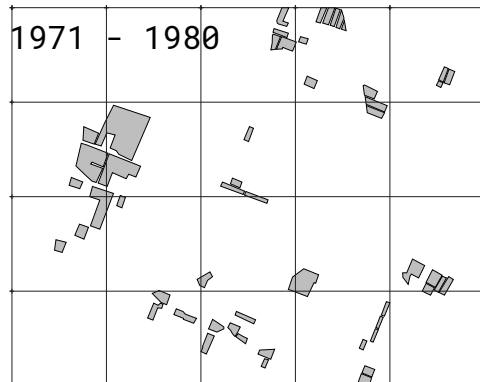
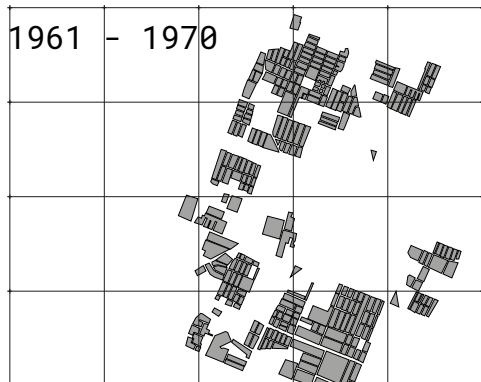
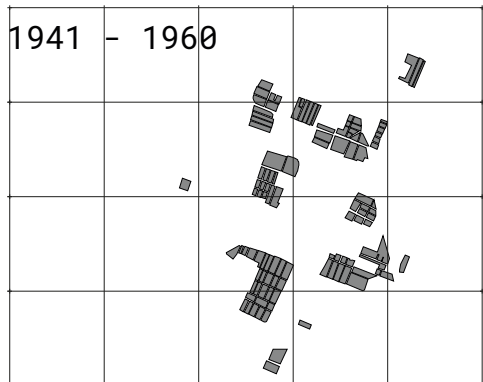
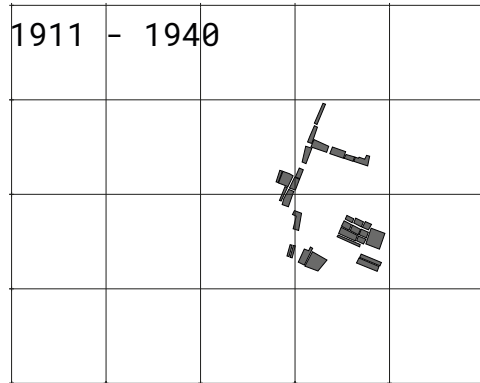
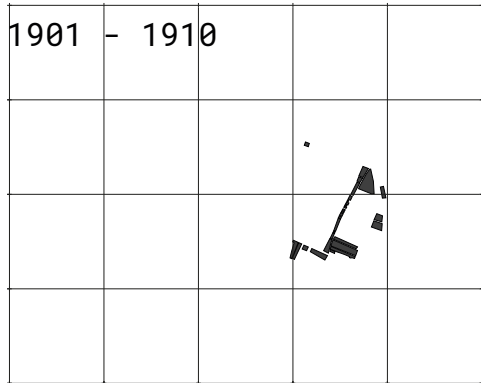
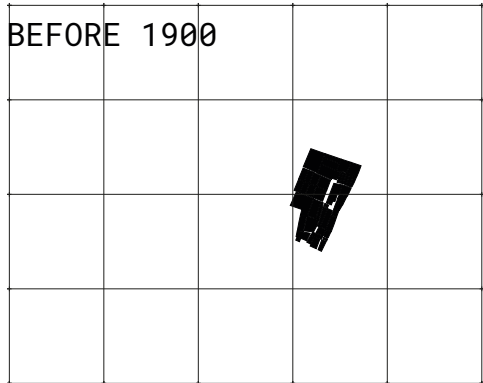
Scale: 1:10000

Frame dimension: 5000m x 4000m

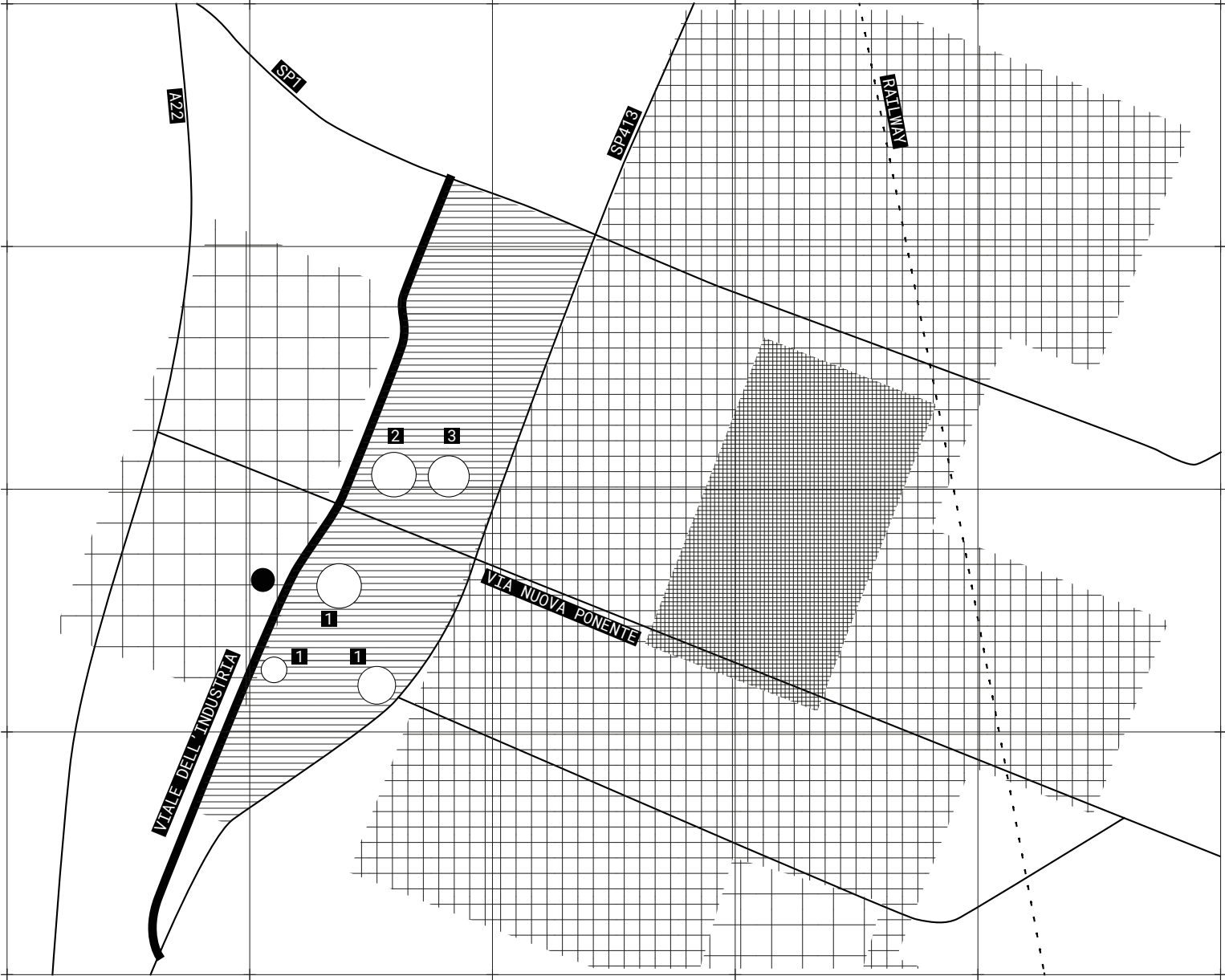
Grid dimension: 1Km x 1Km

EVOLUTION OF THE CITY



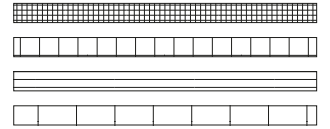


INTERPRETATIVE MAP



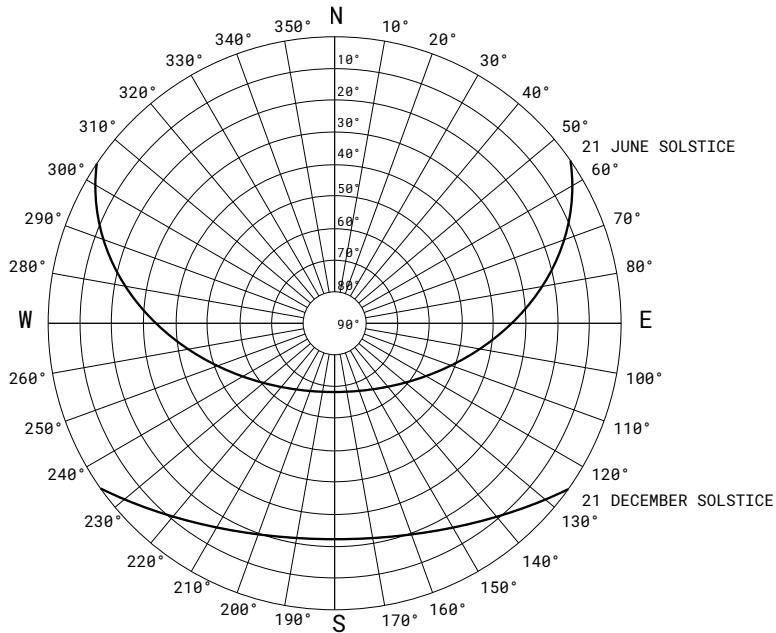
INTERPRETATIVE MAP - legend

- AREA OF INTERVENTION
- POLARITY
- 1 SHOPS/RESTAURANTS
- 2 ENTERTAINMENT
- 3 SPORT
- HISTORIC CENTRE
- EXPANSION AREA
- SERVICE AREA
- INDUSTRIAL AREA



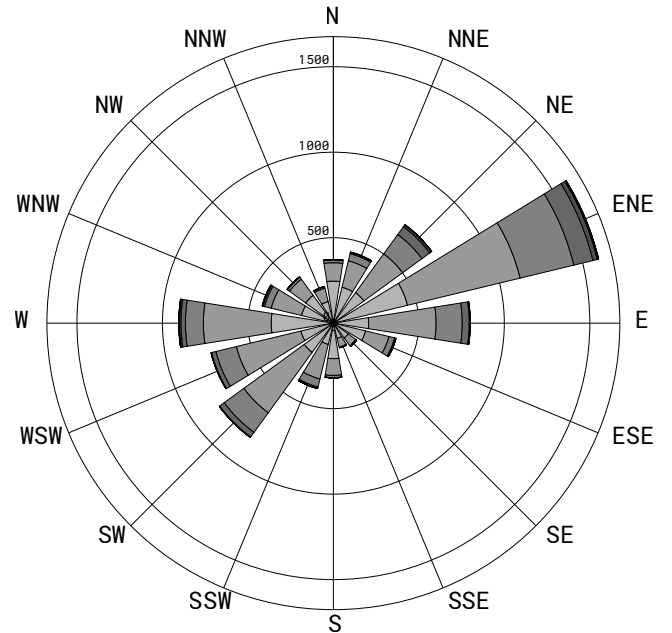
SUN PATH

loc: Carpi [MO] lat: 44.7805181 lon: 10.8557902



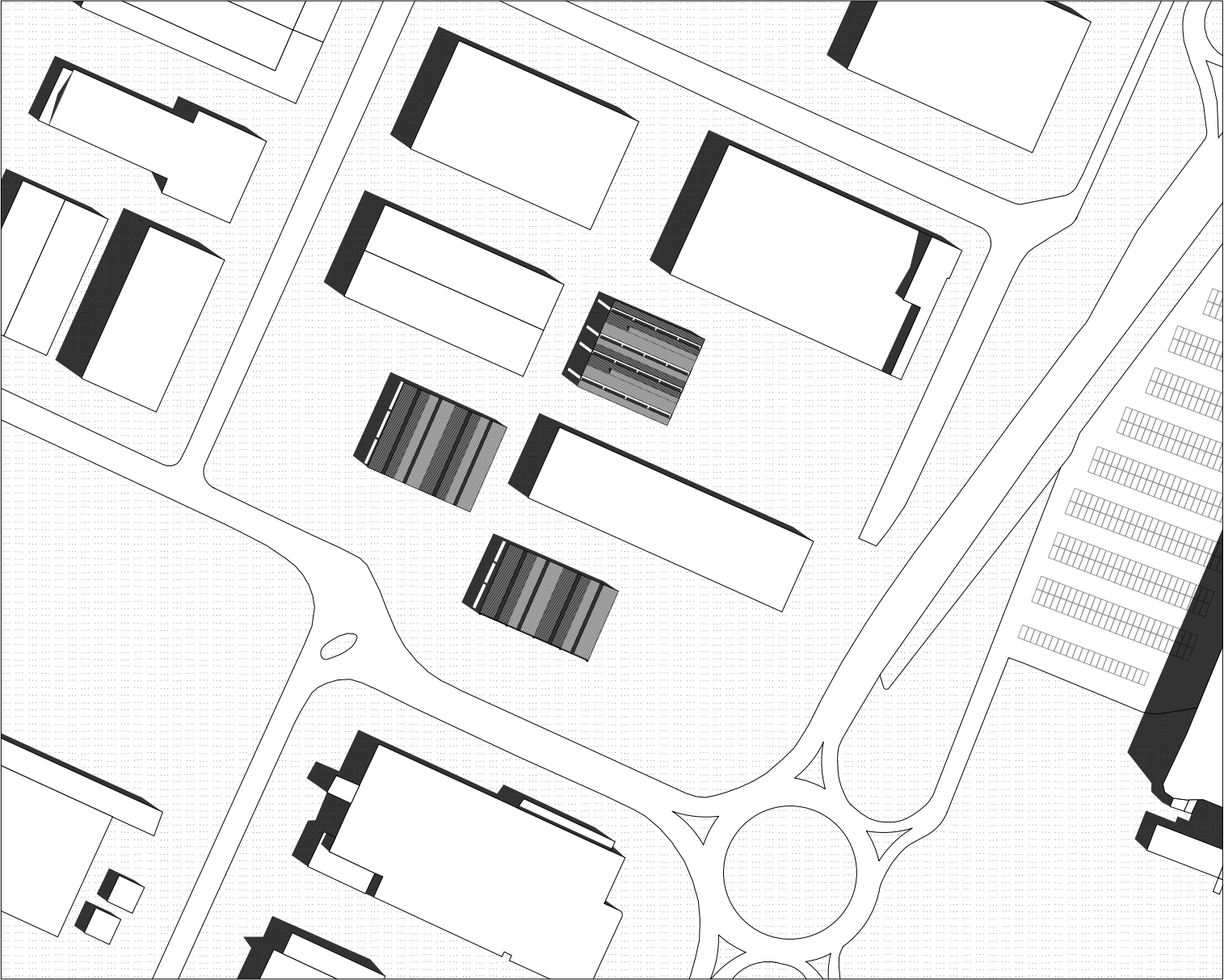
WIND CHART

loc: Carpi [MO] lat: 44.7805181 lon: 10.8557902



- 0
- >28
- >1
- >38
- >5
- >50
- >12
- >61 km/h
- >19

PLANIVOLUMETRIC



GROUND FLOOR PLAN



ARCHITECTURAL TYPOLOGY

Over the years, starting with the industrial revolution that took place during the 19th century, and subsequently also as a result of technological development and the development of new construction techniques, industrial architecture has produced different types of buildings, with very specific requirements depending on the different uses they were intended to accommodate, with the ultimate goal being to guarantee the best environmental conditions for those who work inside them.

There are different types of industrial buildings, depending on the function they are intended to host: canopies, generally designed for a type of industry considered “heavy”, which allow lighting both from the sides and from above; multi-storey buildings, more similar to civil buildings, used more to house small work spaces, such as offices, or in any case that do not require the use of particular machinery. The most common type, in the industrial sphere, is undoubtedly that of the shed.

The process of product standardisation, which derives precisely from the development of new technologies in the world of production, has affected the production buildings themselves, thus generating standardised architecture based on prefabricated elements produced in series, which can be easily assembled, quickly and at low cost, with the possibility of creating multifunctional spaces characterised by a flexible floor plan, capable of accommodating different types of activities.

INDUSTRIAL WAREHOUSE

The industrial warehouse is the industrial building that best represents this process of standardisation and prefabrication of construction elements. Generally, these buildings are characterised by a regular structural grid, free plan, rectangular or square, with large spans, which are developed on the ground floor, thus favouring the horizontal direction over the vertical.

The structure is punctiform, characterised by beams and pillars, on which rests a roof called a “shed”, a particular roofing system, also called “sawtooth”, which originated during the 1820s in London, when textile production began to spread, and allowed light to reach the large interior spaces where work was carried out, generally facing north to avoid direct light, also made with prefabricated elements. Their conformation makes them particularly flexible from both a compositional, interior space configuration and functional point of view.

The industrial warehouses, in fact, can be used to house multiple functions: from structures for livestock breeding or for the agricultural and food sector, as extension elements of production departments that need more space, as a simple space to shelter tools and work machinery, to the sports or cultural sector, as a roofing element for competitions and public events. The architectural value of industrial buildings, and in

particular warehouses, coincides with the technical requirements they must meet: space, light, envelope and structural solidity.

These buildings have represented, and still represent, an ideal field of experimentation for architects and engineers, precisely because of the possibilities linked to their characteristics in terms of space and functional freedom, which derive from the need for flexibility linked to the continuous transformation of industrial processes.

Having identified the architectural value, which we recognise precisely in the technical characteristics of these buildings, we must now understand the importance of the “time” factor.

In the first instance, understood as that condition, the relationship, between design and time, which has been lacking and which has led, as a direct consequence, to the interruption of work and the abandonment of the unfinished building; subsequently, as a flexible constraint to be applied to the project, which determines the transitory and changeable destiny of the intervention, thus guaranteeing continuous renewal.

INTERVENTION GUIDELINES

On the basis of the considerations and issues addressed in the first part of the research, a number of points have been identified, set out below, to form a sort of intervention guideline, with the aim of defining a methodical and controlled approach through which an effective and lasting result can be achieved, consistent with the needs of the city and society today.

1 - Understanding the area and the building

In order to carry out an effective and coherent intervention, first of all, it is necessary to have a clear understanding of the nature of the context and the site on which one is working, in order to be able to grasp its spirit and preserve its peculiarities.

Knowing the history of the building, its evolution over time, its initial function, the construction process and its constituent elements are the essential basis for the best possible development of the new intervention.

2 - Form VS Function / Function VS Form

When converting an existing area or buildings, the first question to be addressed and resolved concerns the relationship between form (of the existing) and function (of the intervention).

In this case, therefore, it is not the function that determines the form, but rather the intervention programme must be able to adapt to it.

An intervention can only be considered of quality if it is characterised by the appropriateness between the existing spaces and the new needs envisaged by the

programme, between the configuration of the spaces and their new function.

3 - Readability of the intervention

The new intervention must be clearly legible, unambiguously differentiated from the existing state.

Any modification or addition to the existing must be evident, to make all the stratifications that have occurred over time legible.

4 - Revealing the original structure

Whenever possible, the new intervention should highlight the original layout of the existing structure and its parts, emphasising materials and construction details.

5 - Reversibility of intervention

The intervention must be reversible, should there be a need in the future to change its nature, modify it in part, remove or replace certain elements.

Reversibility is a fundamental requirement for the success of an intervention to restore an area or a building, it allows us not to preclude the possibility of returning to the initial state, thus breaking away from the concepts of static and fixity that are usually attributed to architecture.

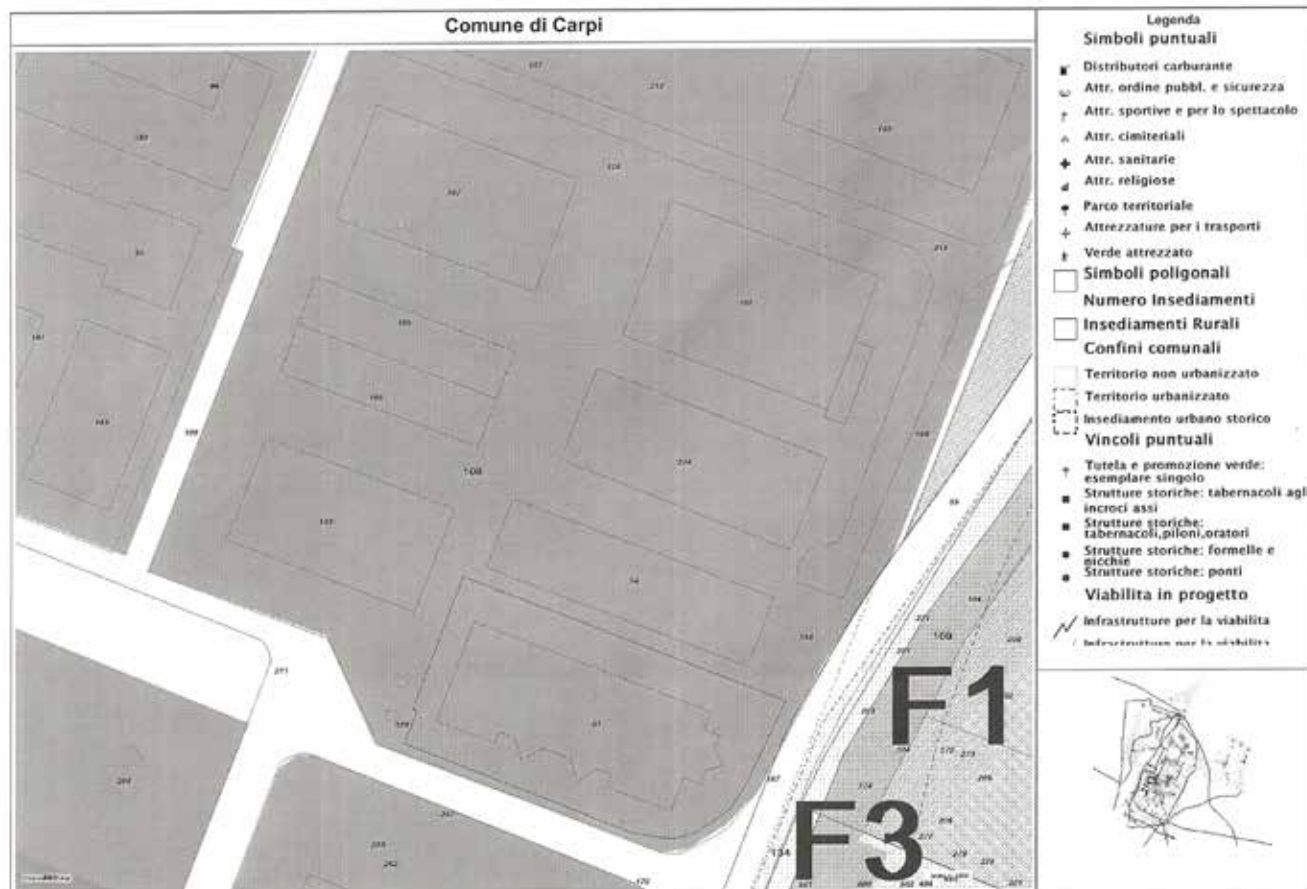
6 - Programme flexibility

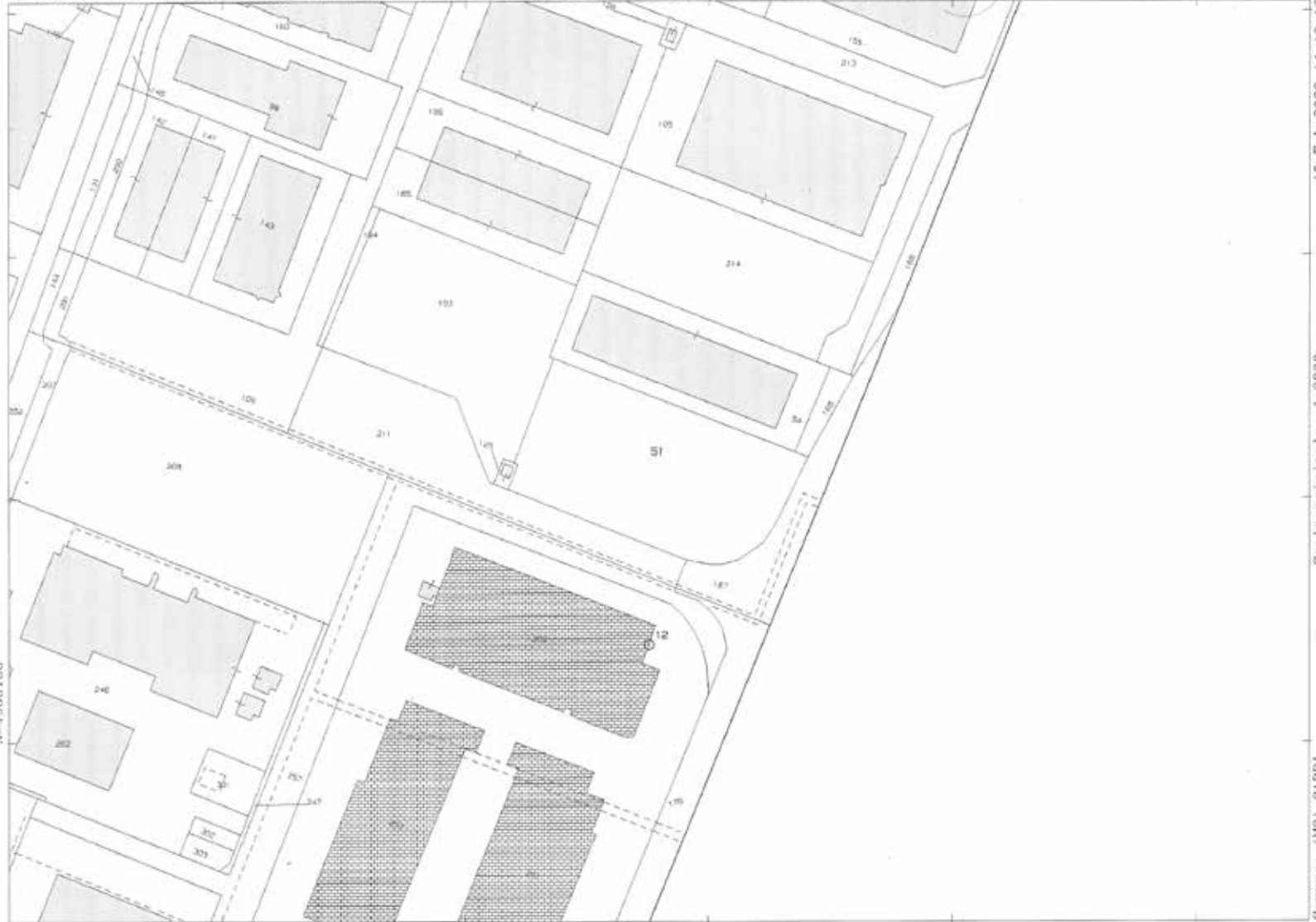
The new spaces must be structured in such a way that the programme can be modified over time, according to the different needs of the users.

This guarantees a longer duration to the intervention, avoiding the risk of obsolescence of the project, which would otherwise result in the area or building being returned to its initial state, prior to the intervention itself, with the consequent reoccurrence of the problem.

DOCUMENTATION

From the archives of the Municipality of Carpi





N=1960100

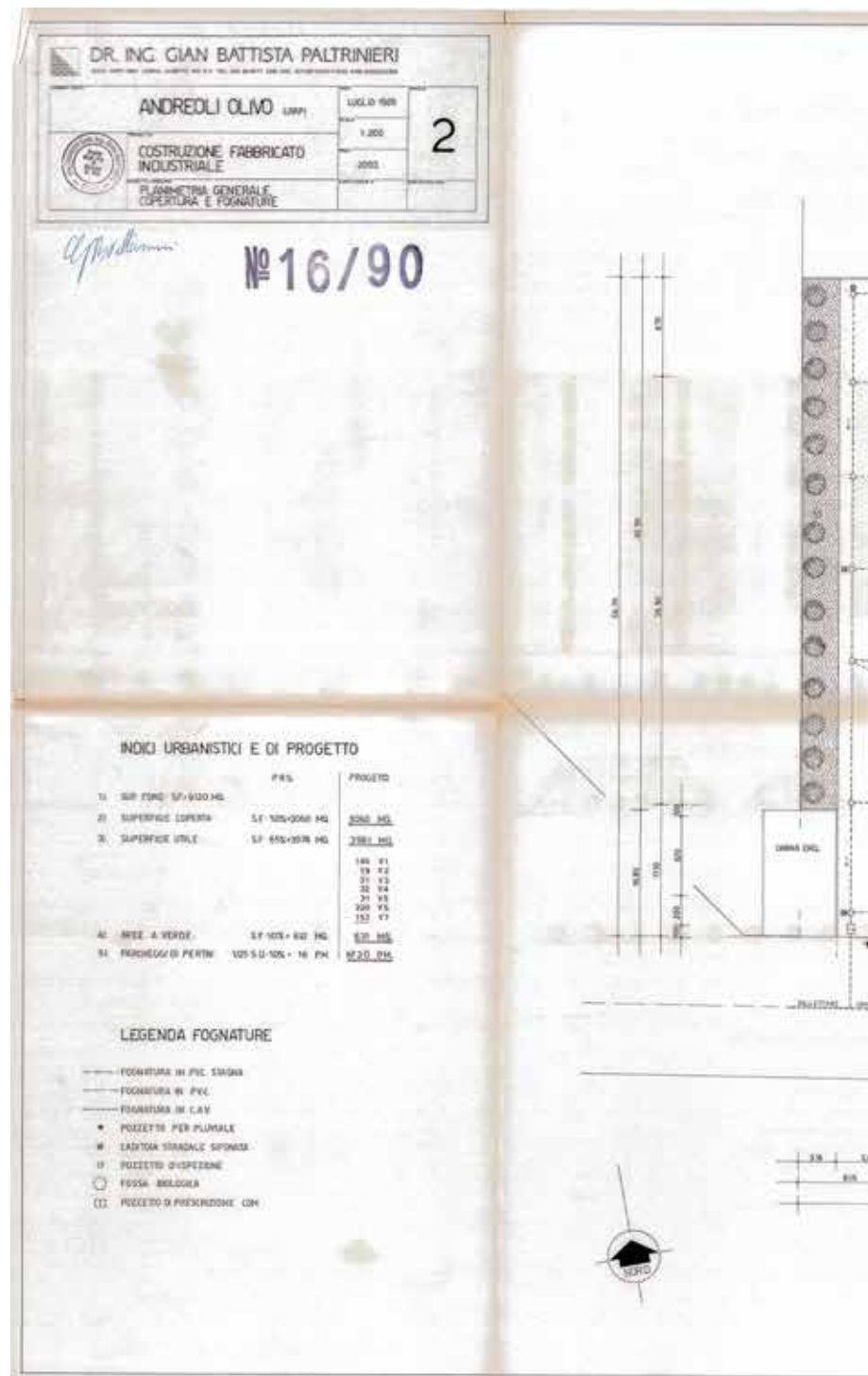
E=1646700

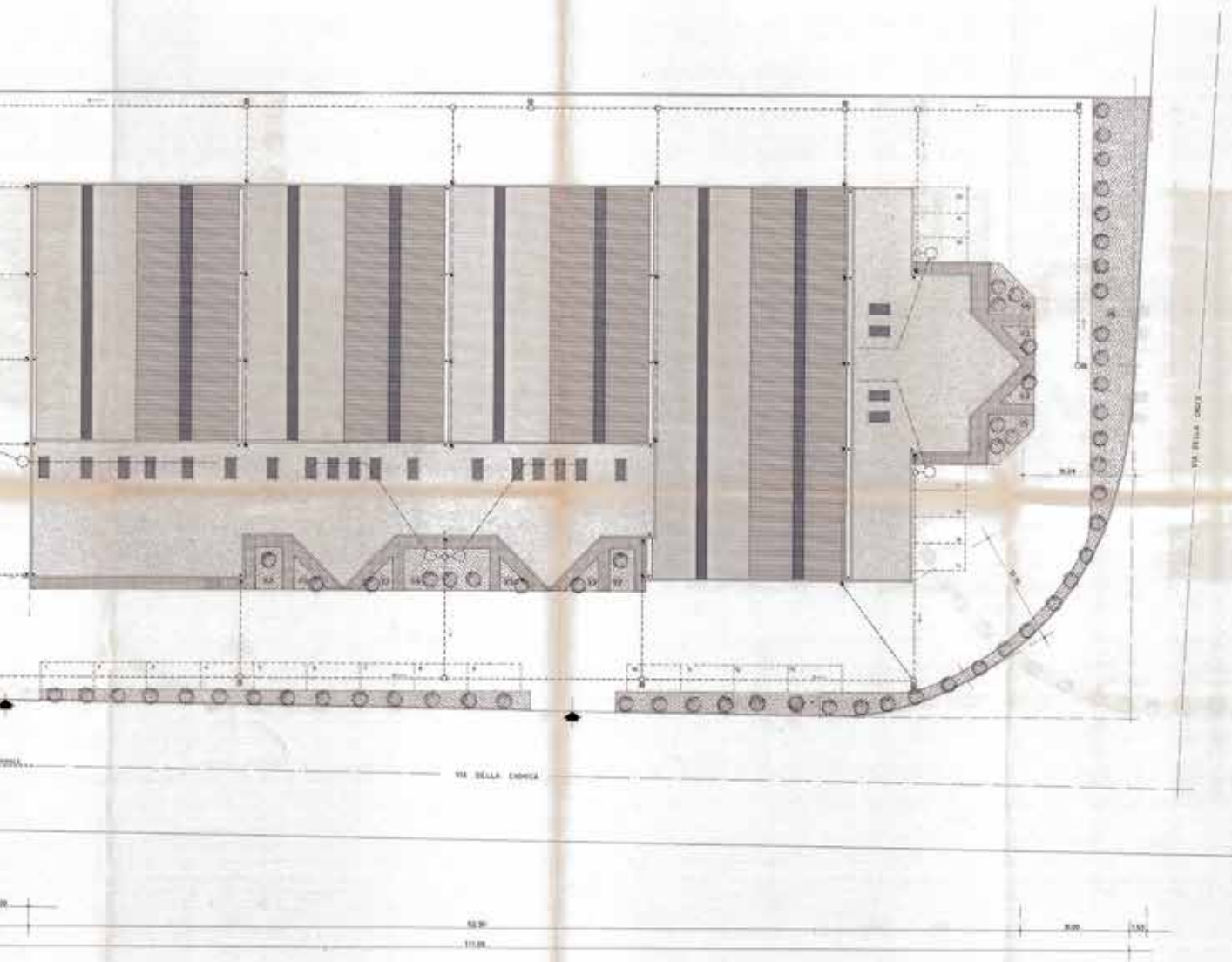
1 Particella: 51

Comune: (MO) CARPI
Foglio: 108
Scala originale: 1:2000
Dimensione cornice: 534.000 x 378.000 metadecollo pratica T229301/2022
16-Feb-2022 14:19:16

F108 M51

Building licence 16/1990





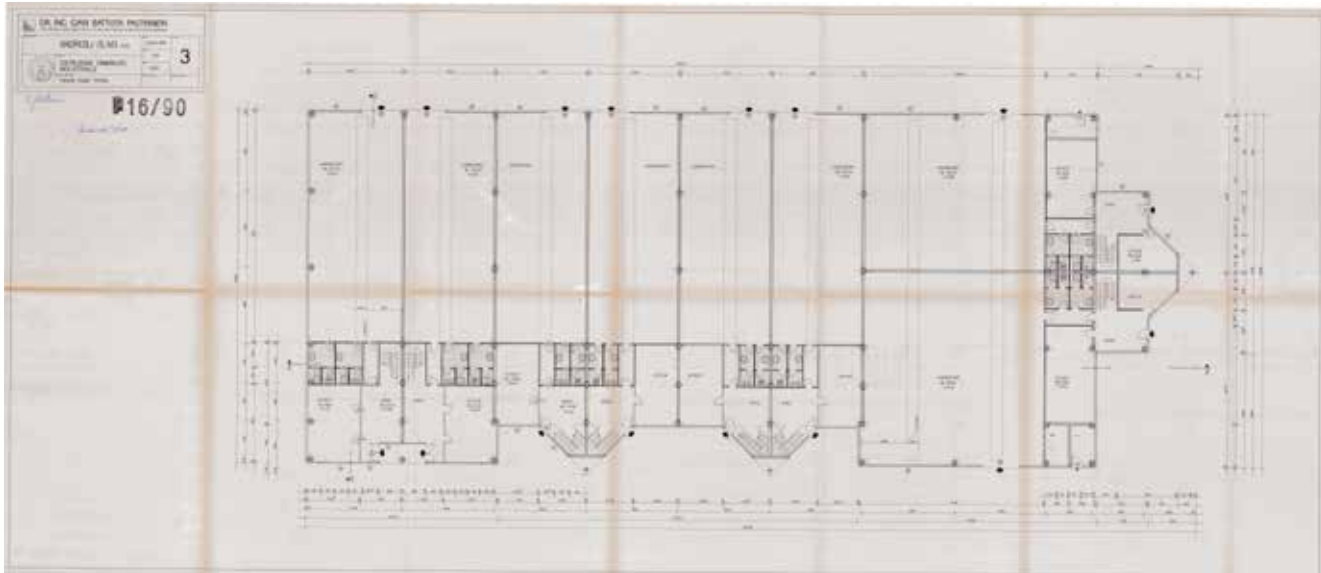


Fig.27: ground floor plan

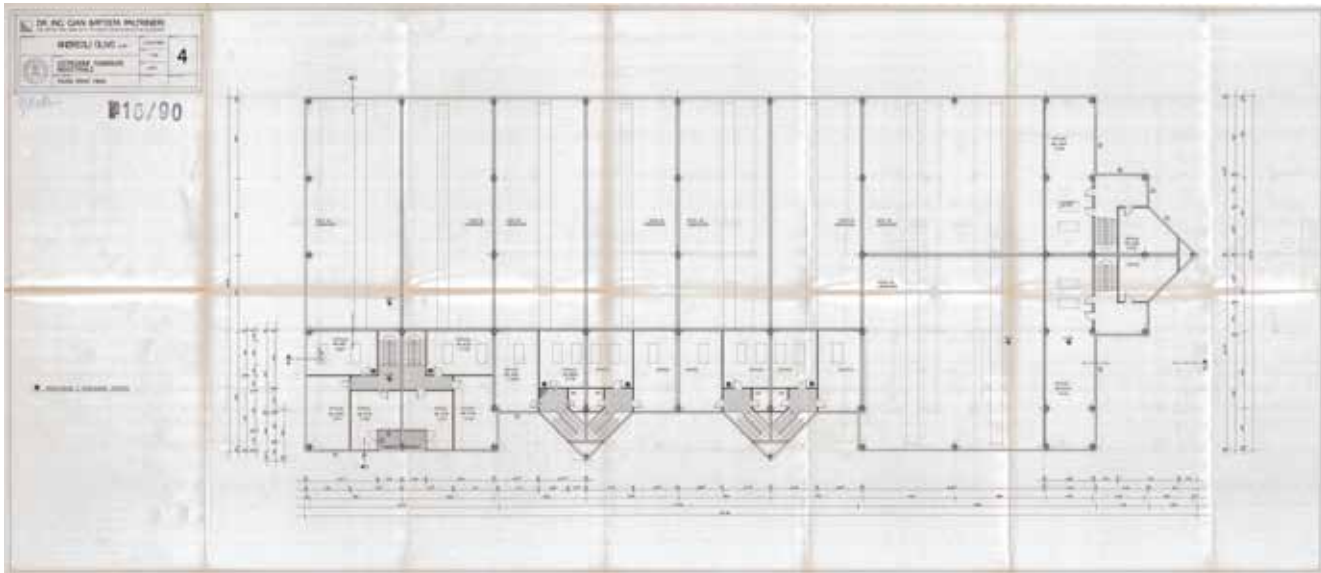


Fig.29: first floor plan

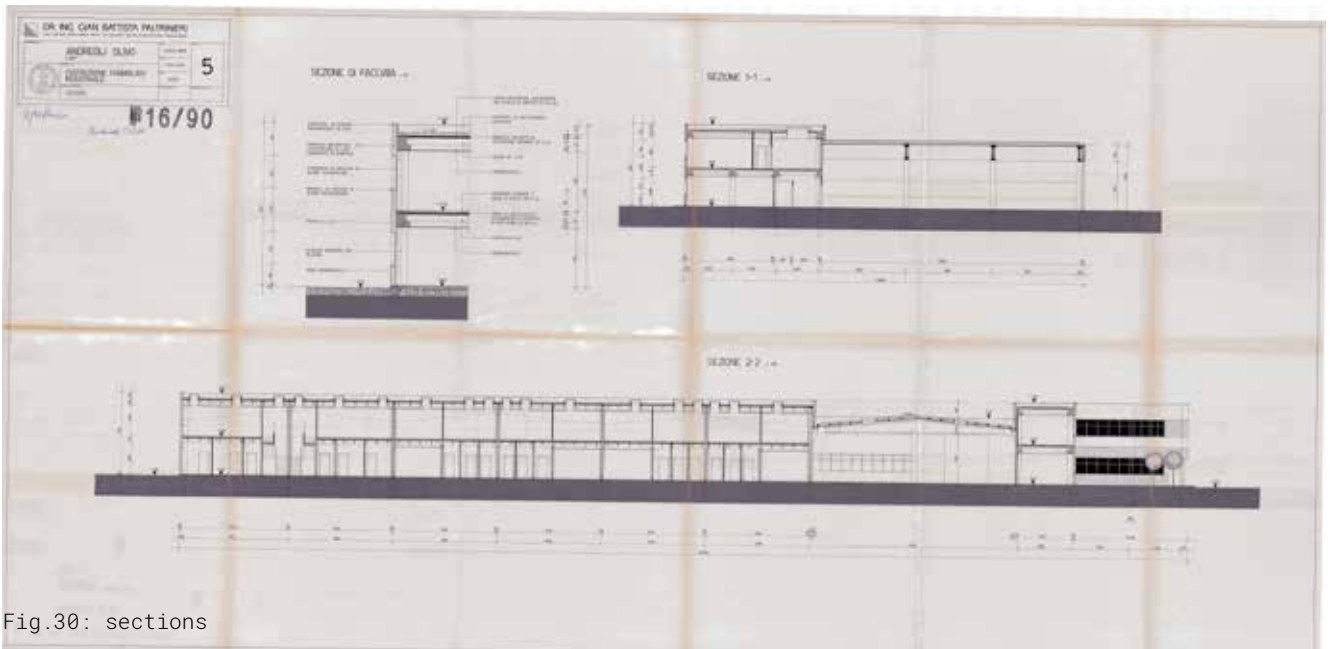


Fig.30: sections

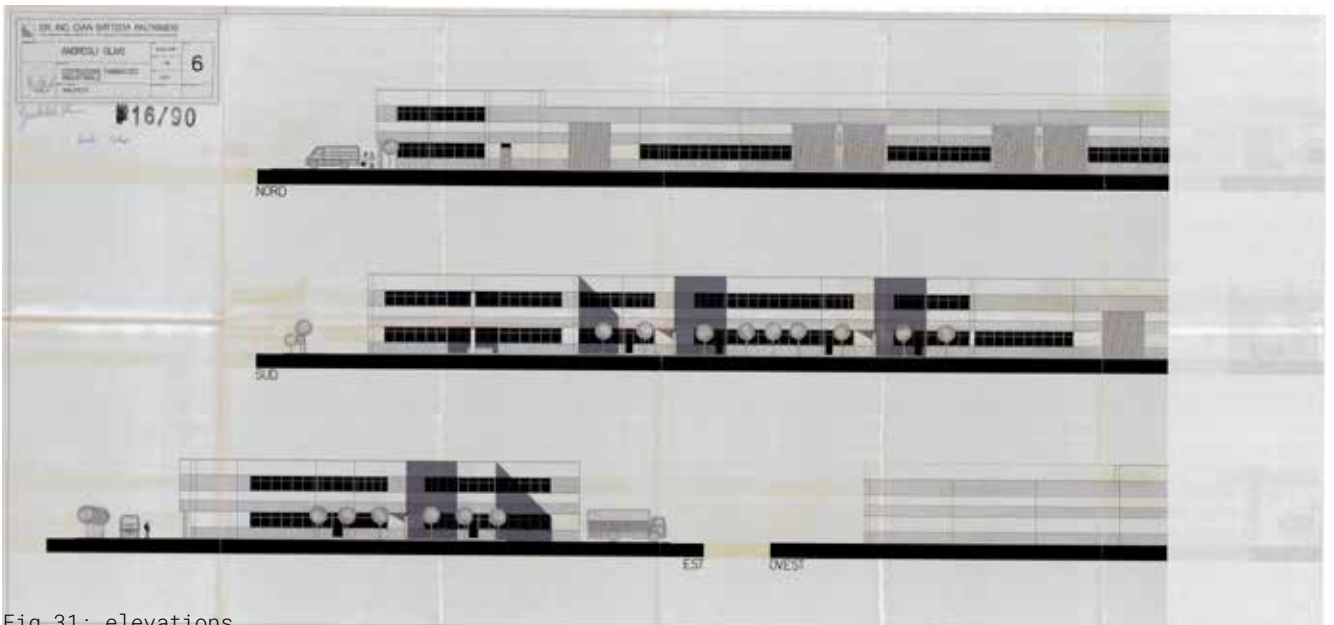


Fig.31: elevations

F108 M193

Building licence 469/1990

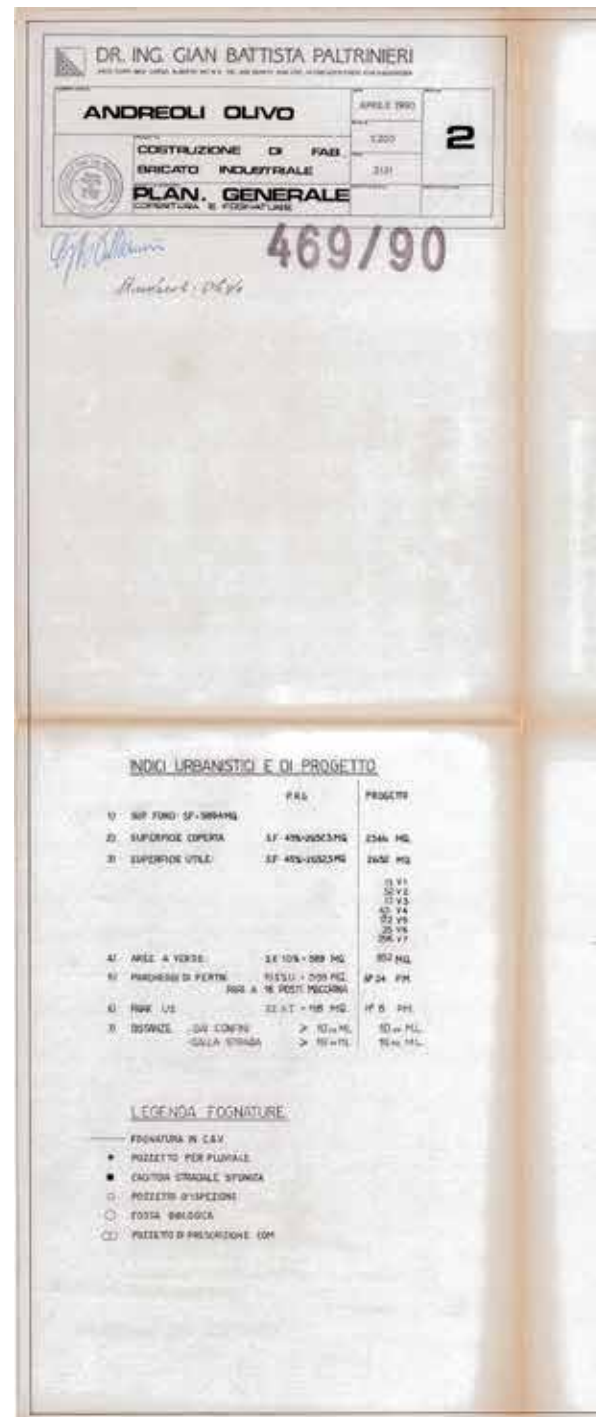
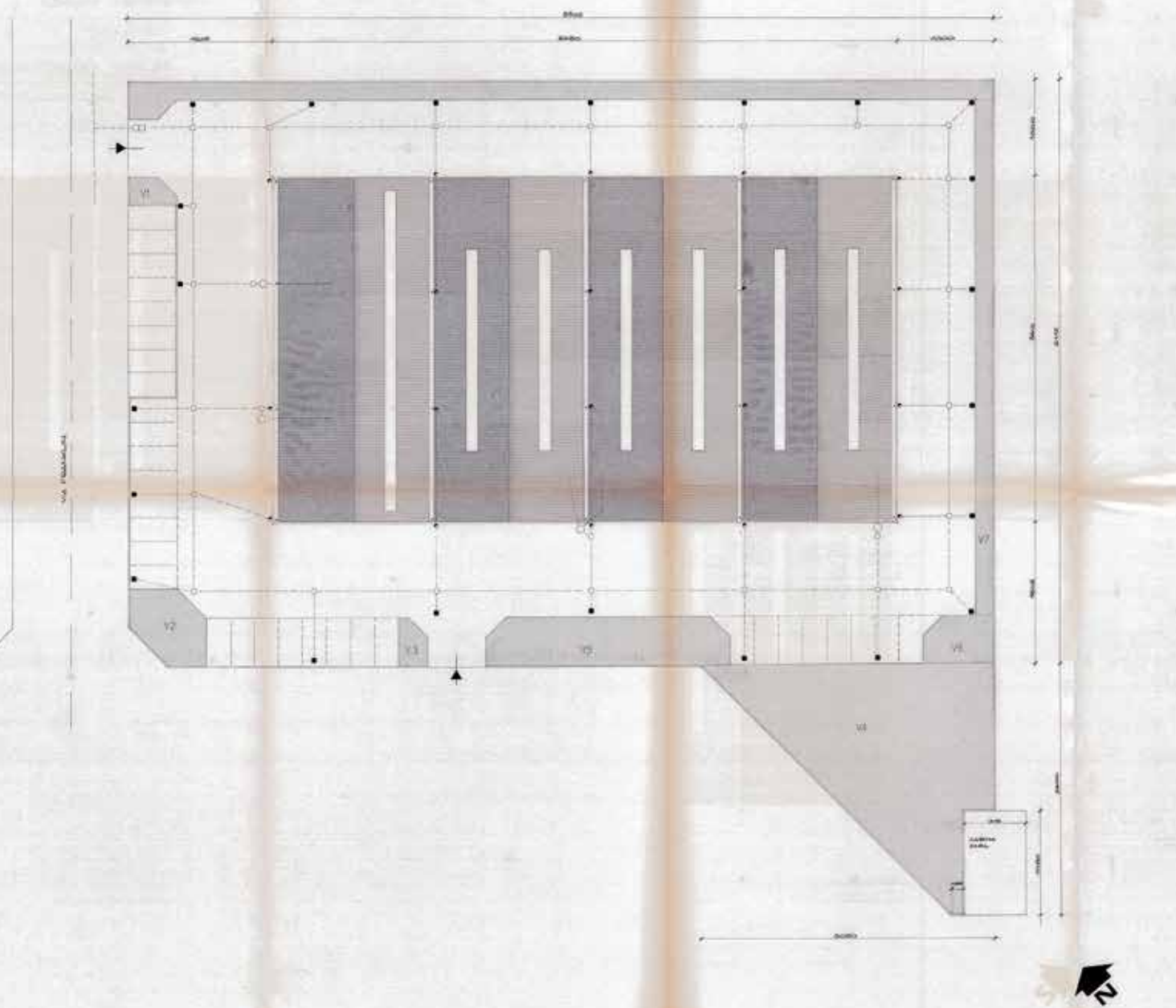


Fig.32: general plan of roofing and sewers



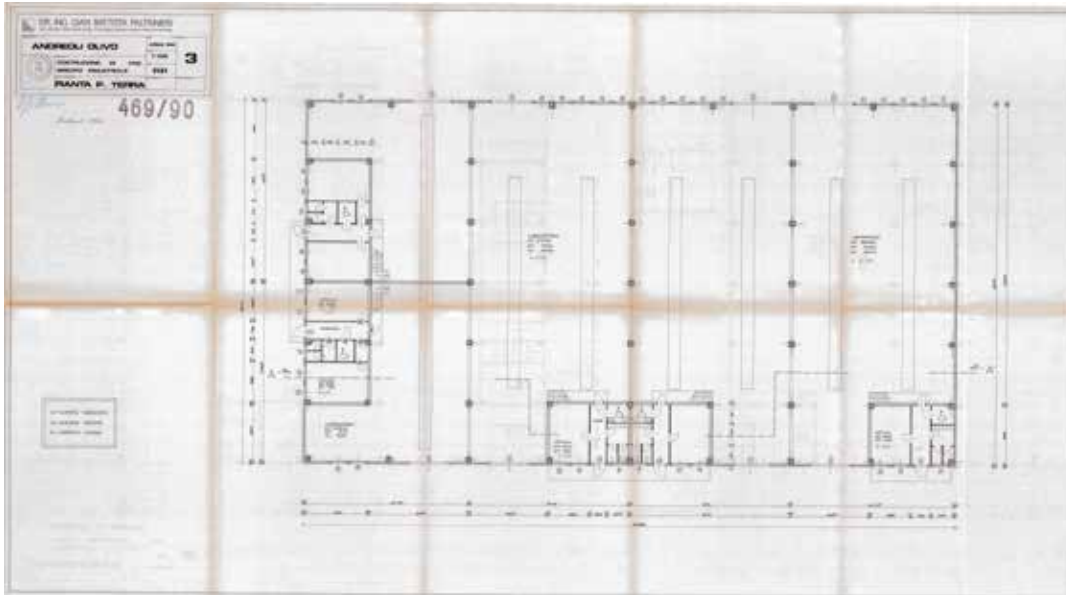


Fig.33: ground floor plan

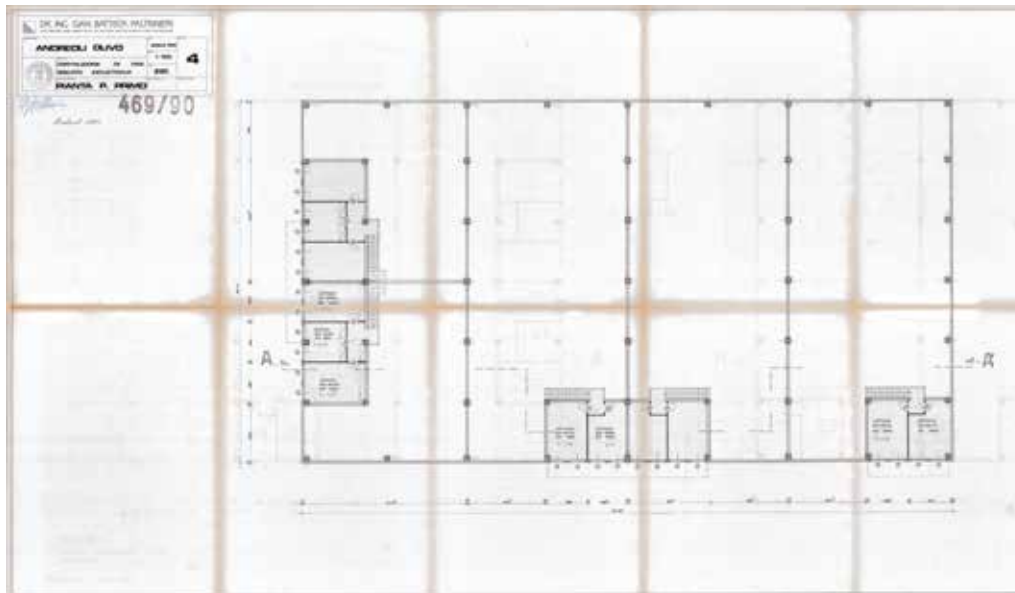


Fig.34: first floor plan

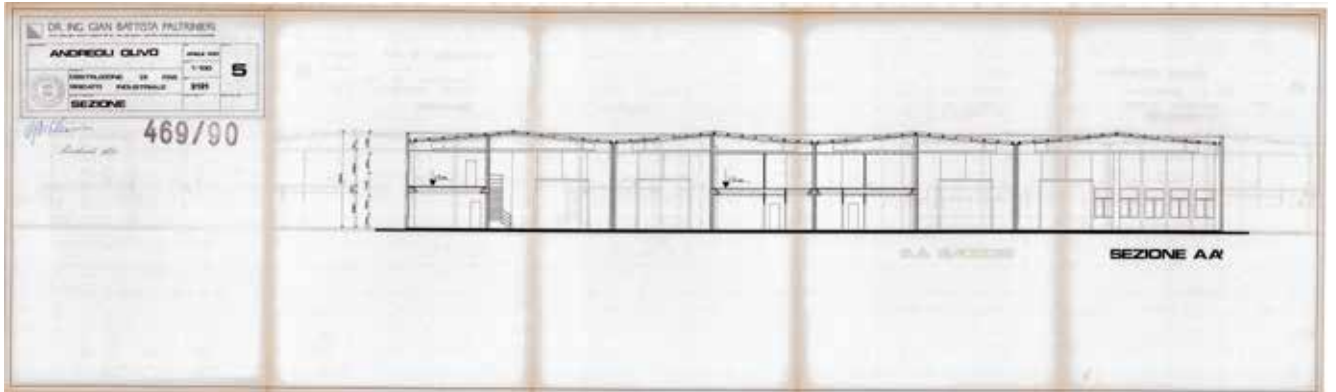


Fig.35: section

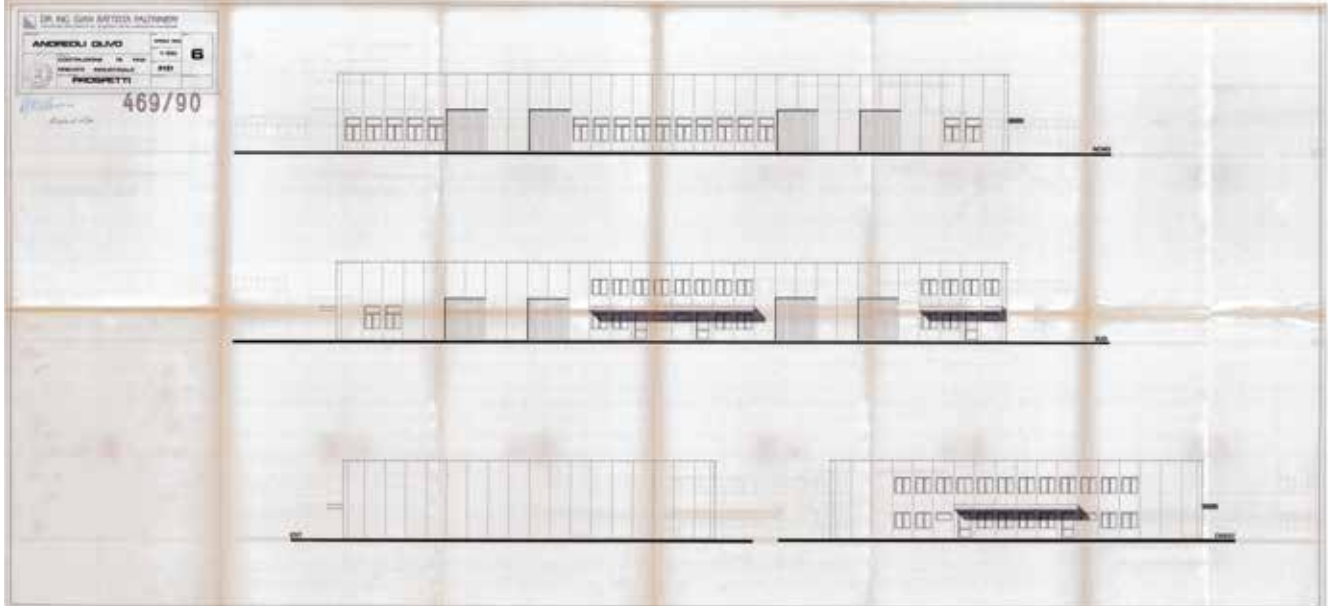


Fig.36: elevations

F108 M214

Building licence 936/1989

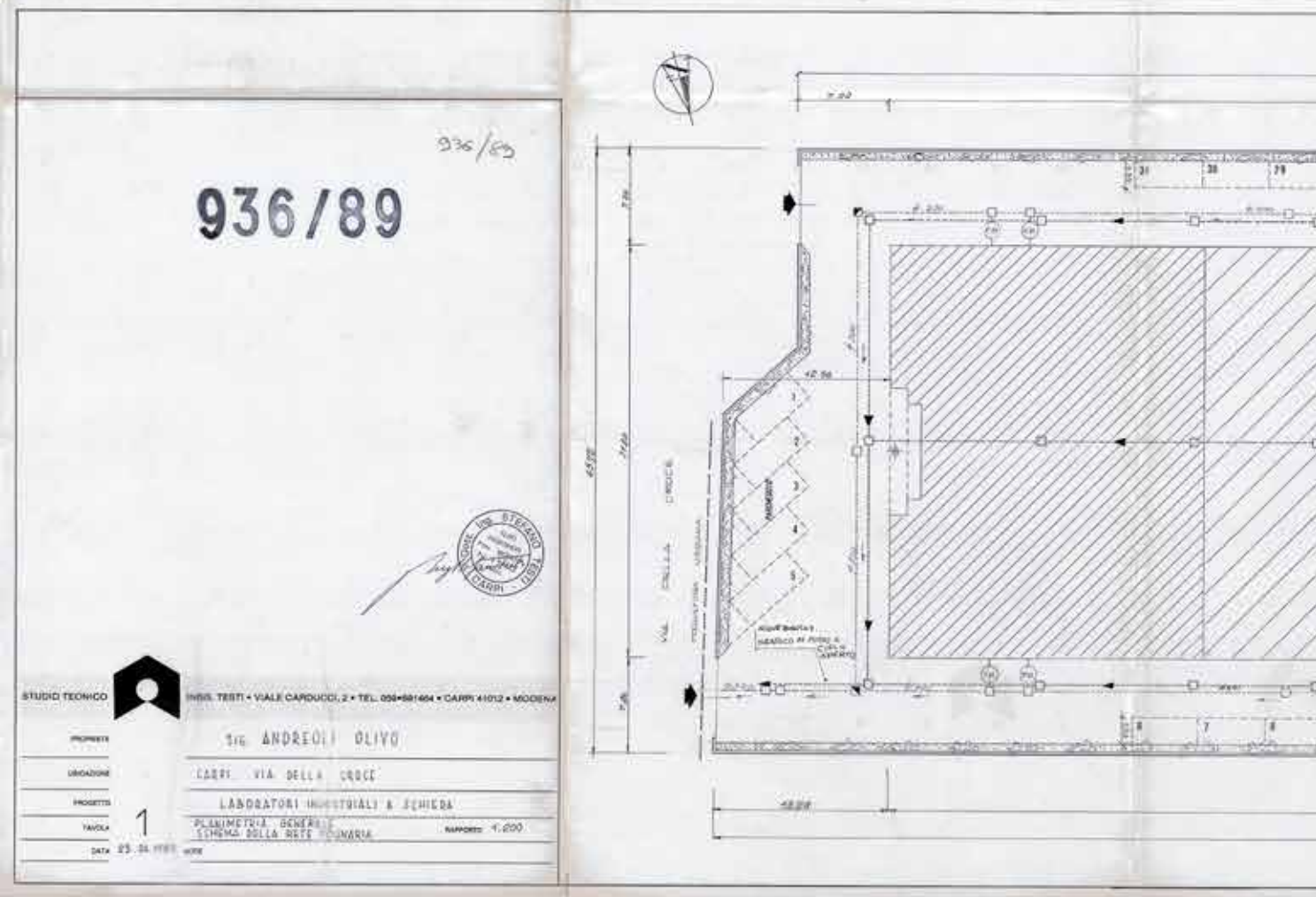


Fig.37: sewerage system diagram

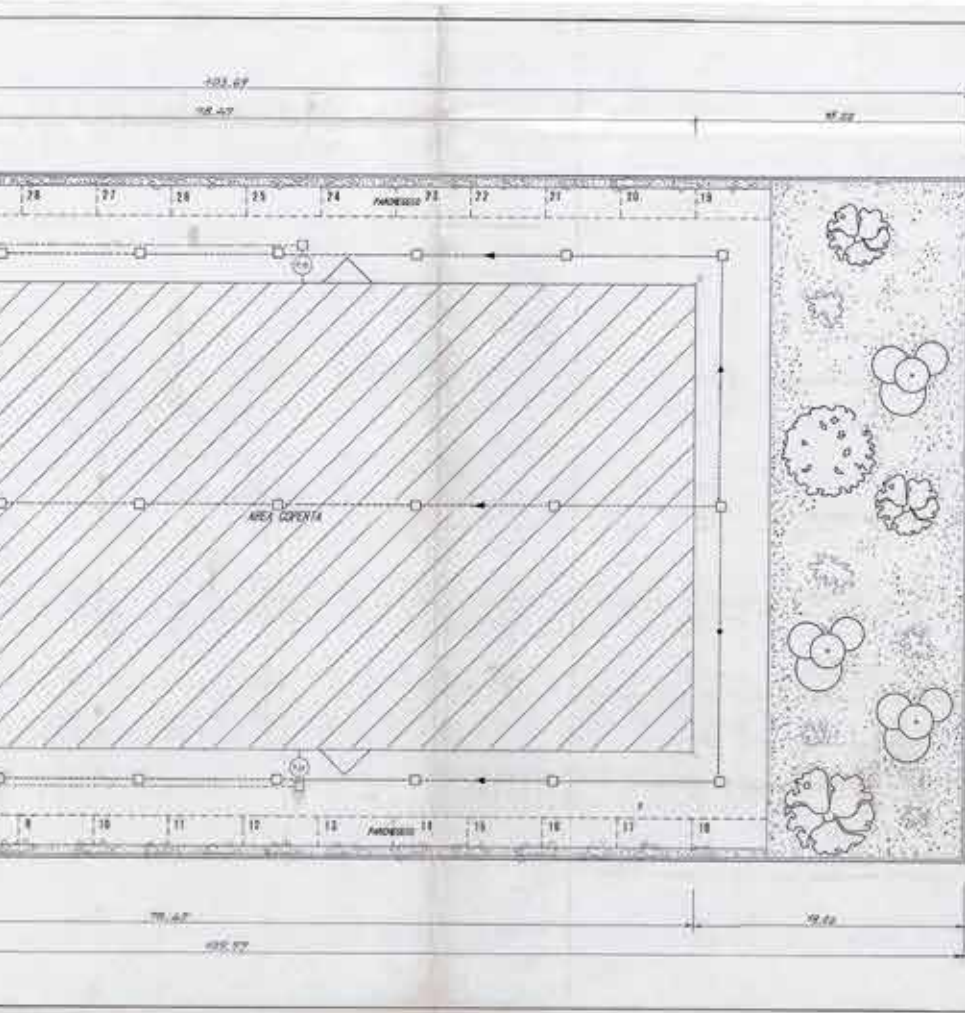


TABELLA INDICI URBANISTICI

ZONA INDUSTRIALE DI COMPLETAMENTO

- SUPERFICIE FONDIARIA	mq	4.912
- SUPERFICIE COCIBILE 30% di	mq	2.456
- SUPERF. COCIB. DI PROGETTO	mq	2.456
- INDICE DI UTILIZZAZIONE FONDIARIA	mq	319,3
- SUPERFICIE UTILE DI PROGETTO	mq	312,8
- VERDE INTEGRATO AL LOTTO DI PROGETTO (MIN. 10% di)	mq	720
- PARCHeggi AUTOM. DI PROGETTO (MIN. 10% di)	mq	330

LEGENDA

- 100 — CONDOTTI IN TUBI DI PLASTICA Ø INT. 150-300 mm
- PROGETTO PRESABBITO DI RACCORDO
- ▲ PROGETTO INVERSIORI DISTRIBUZIONE
- ⊙ POZZI BIOLOGICI
- □ PROGETTO PRESABBITO SULL'AVV. DI PRESSIONE

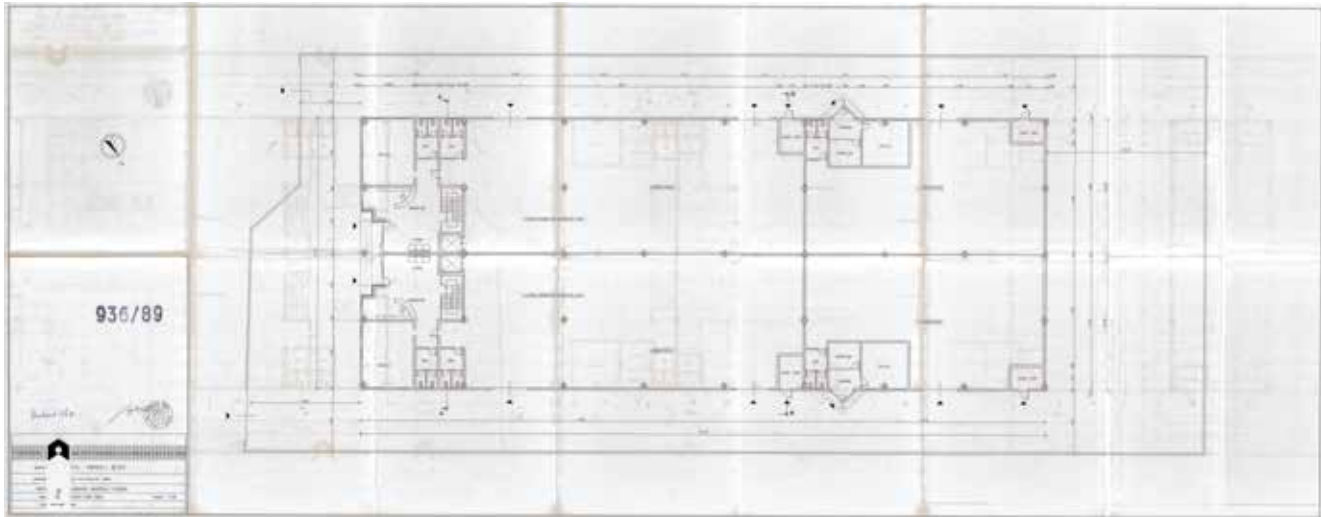


Fig.38: ground floor plan

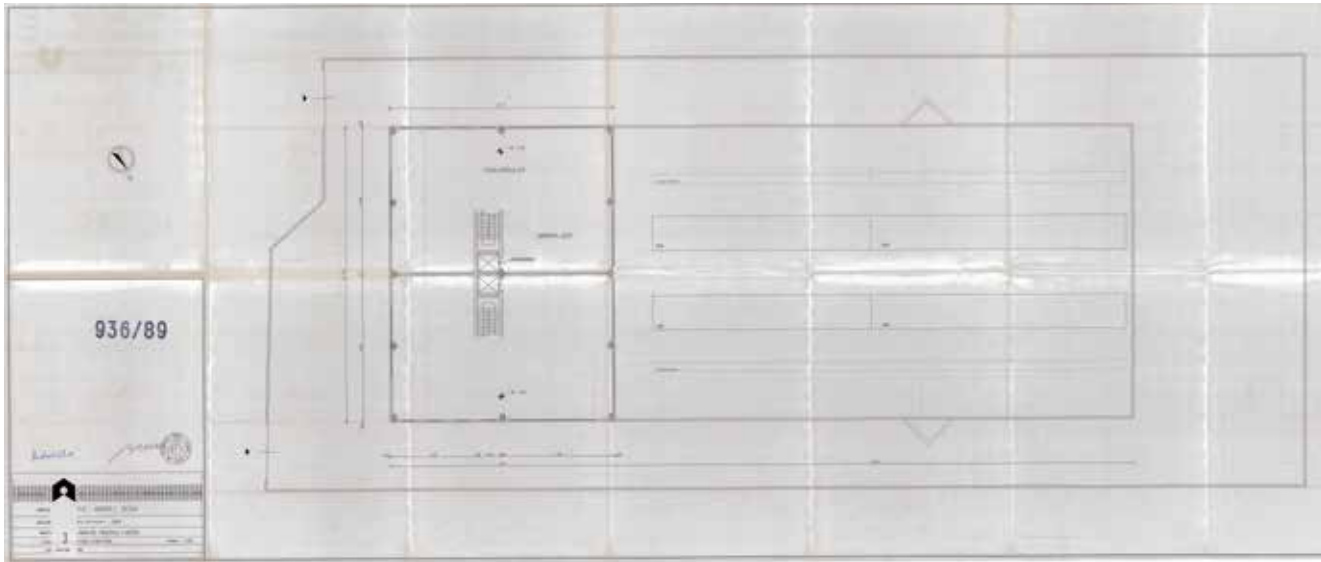


Fig.39: first floor plan

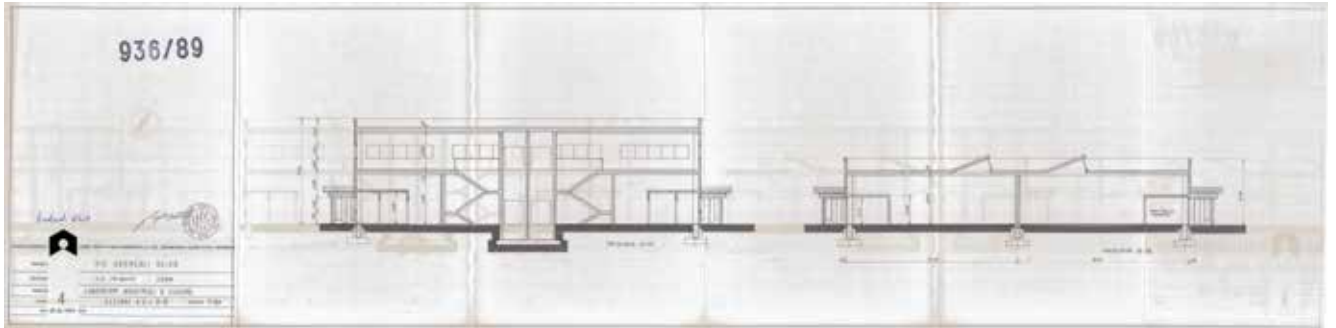


Fig.40: sections

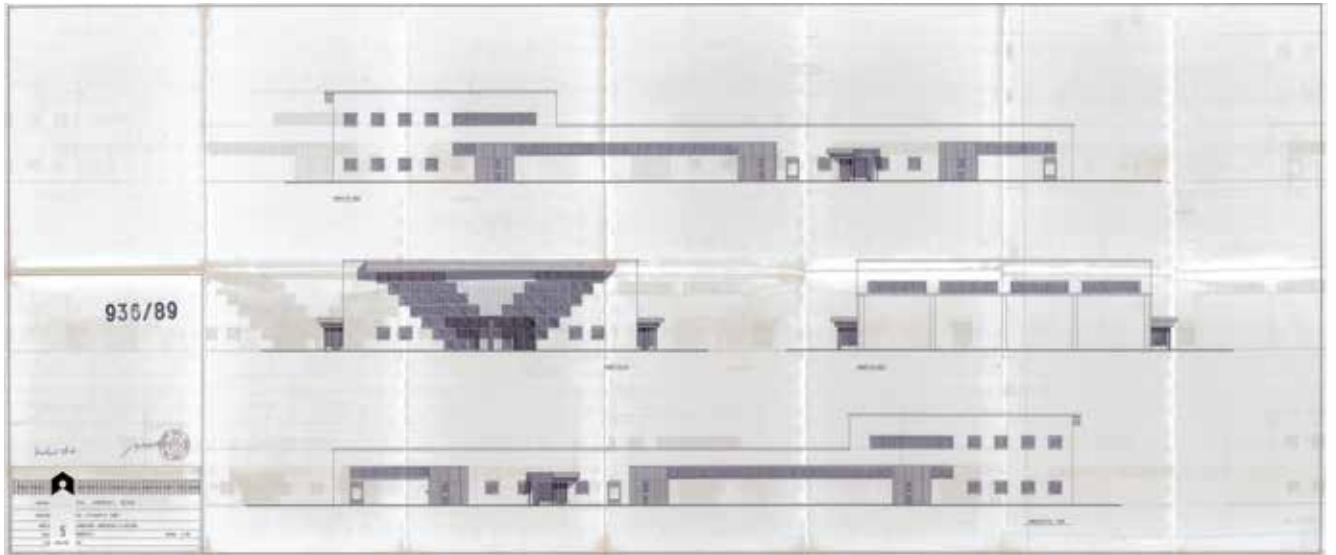


Fig.41: elevations

Building licence 1390/1989

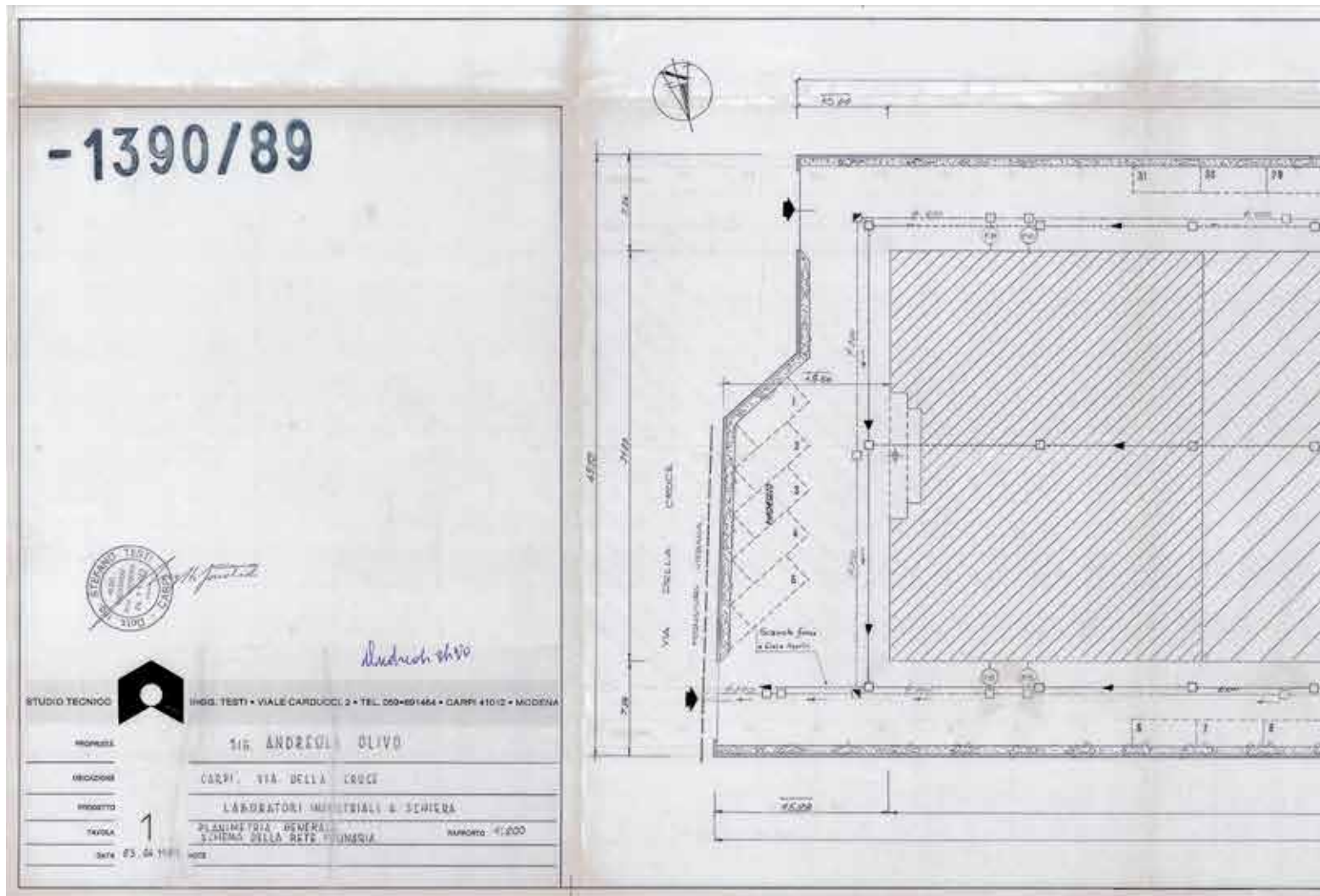


Fig.42: general layout

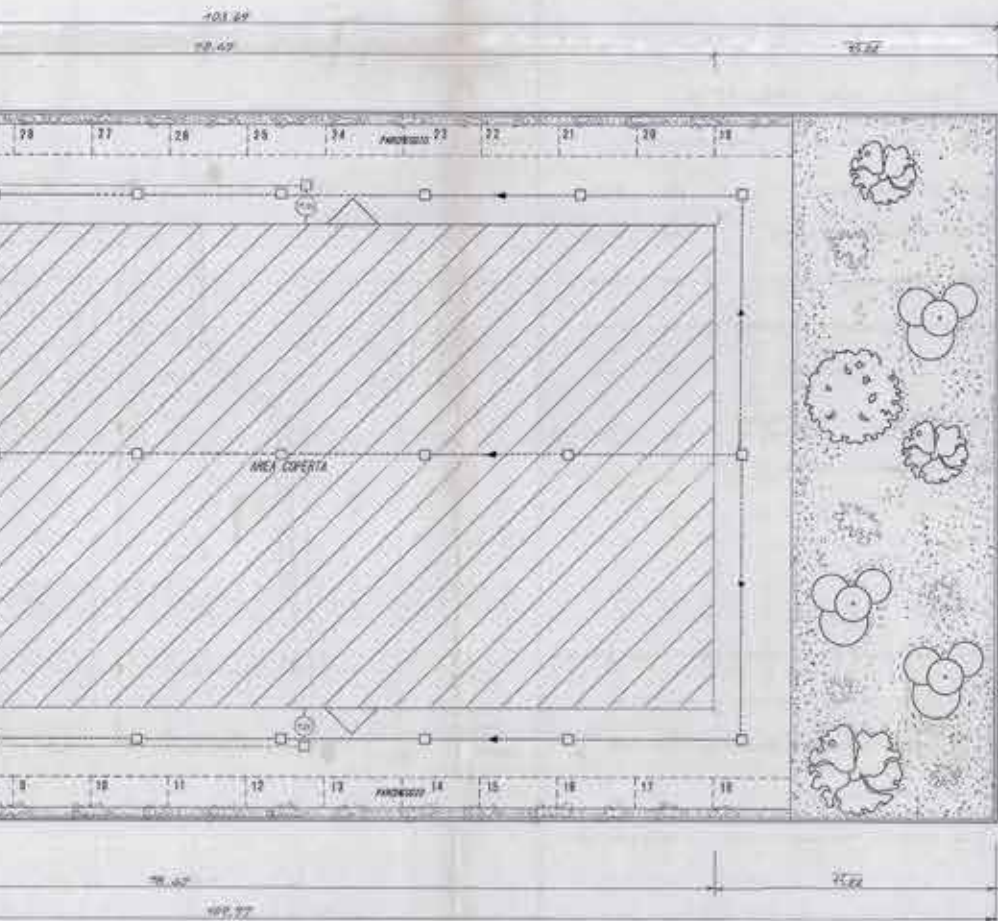


TABELLA INDICI URBANISTICI

ZONA INDUSTRIALE DI COMPLETAMENTO

- SUPERFICIE FONDSARIA	mq	4912
- SUPERFICIE COPRIBILE DOZ 04	mq	3456
- SUPERF. COPRIBILE DI PROGETTO	mq	2486
- VERDE DI UTILIZZAZIONE FONDSARIO (MIL 102/34)	mq	3173
- SUPERFICIE UTILE DI PROGETTO	mq	2128
- VERDE INTERNO AL LOTTO DI PROGETTO (MIL 102/34)	mq	720
- FINESTRE INTERNE DI PROGETTO (MIL 102/34)	mq	330

LEGENDA

- CONDOTTI IN TUBI DI PLASTICA Ø INT. 150-200 mm
- PROGETTO PREPROBATO DI RACCORDO
- PROGETTO PREPROBATO COMPLETO D'OPZIONE
- ROSA BIOLOGICA
- PROGETTO PREPROBATO SINGOLO DI PRESCRIZIONE

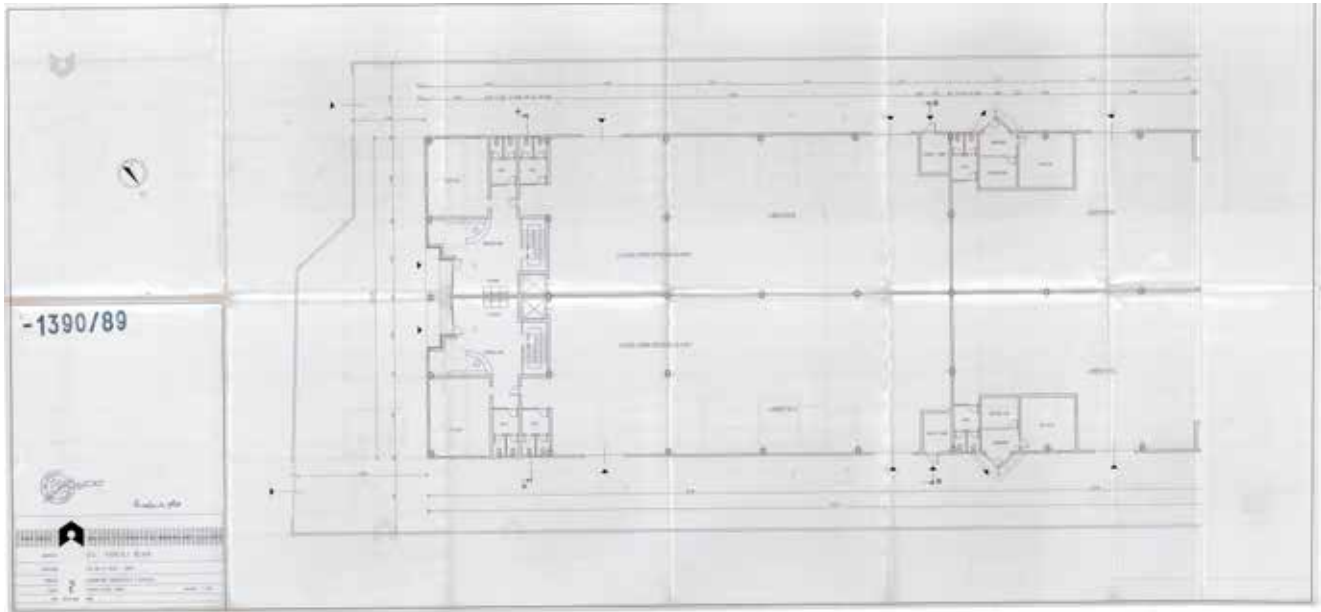


Fig.43: ground floor plan

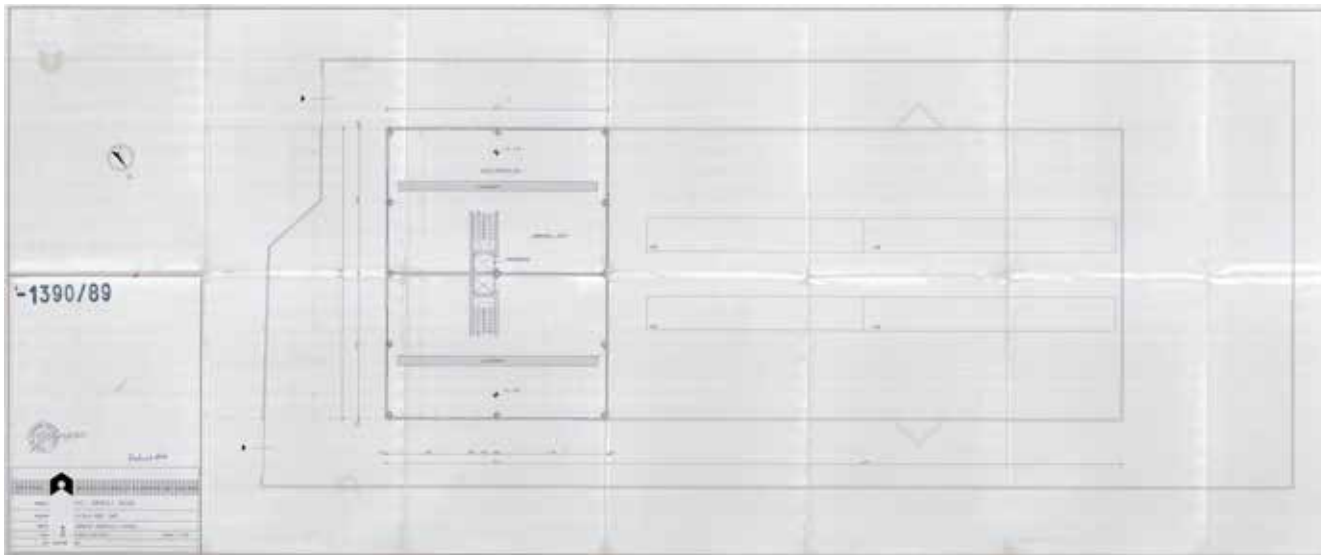


Fig.44: first floor plan

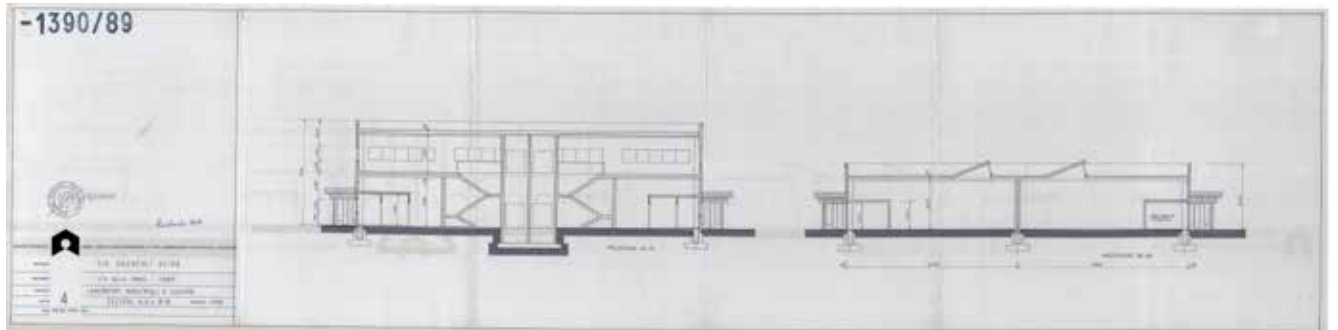


Fig.45: sections

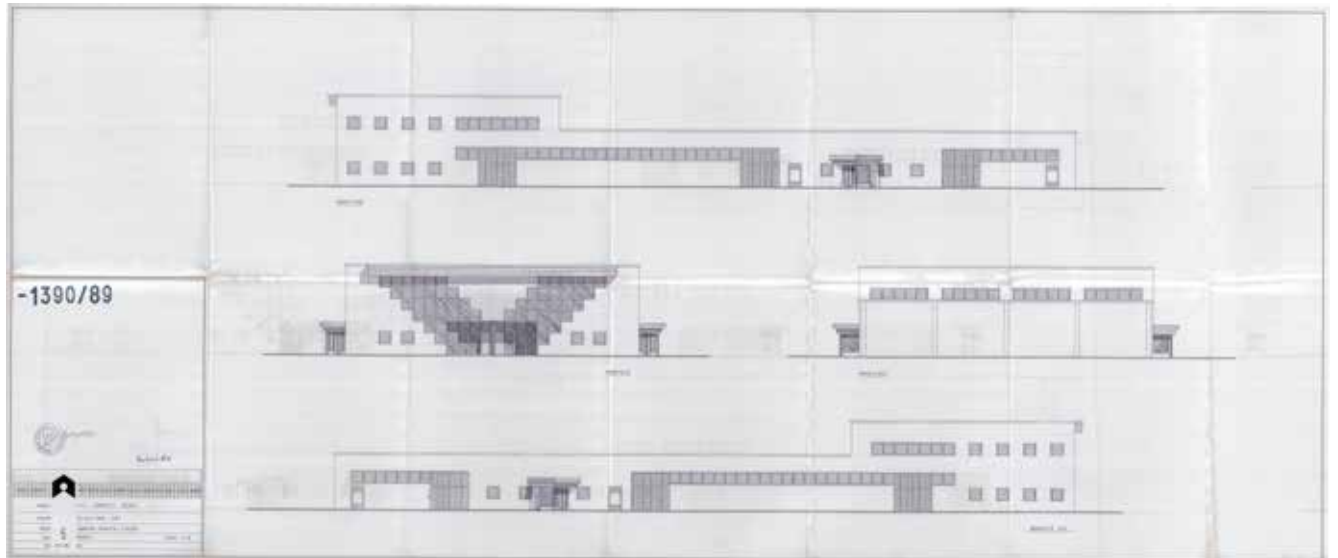


Fig.46: elevations

Building licence 823/1990

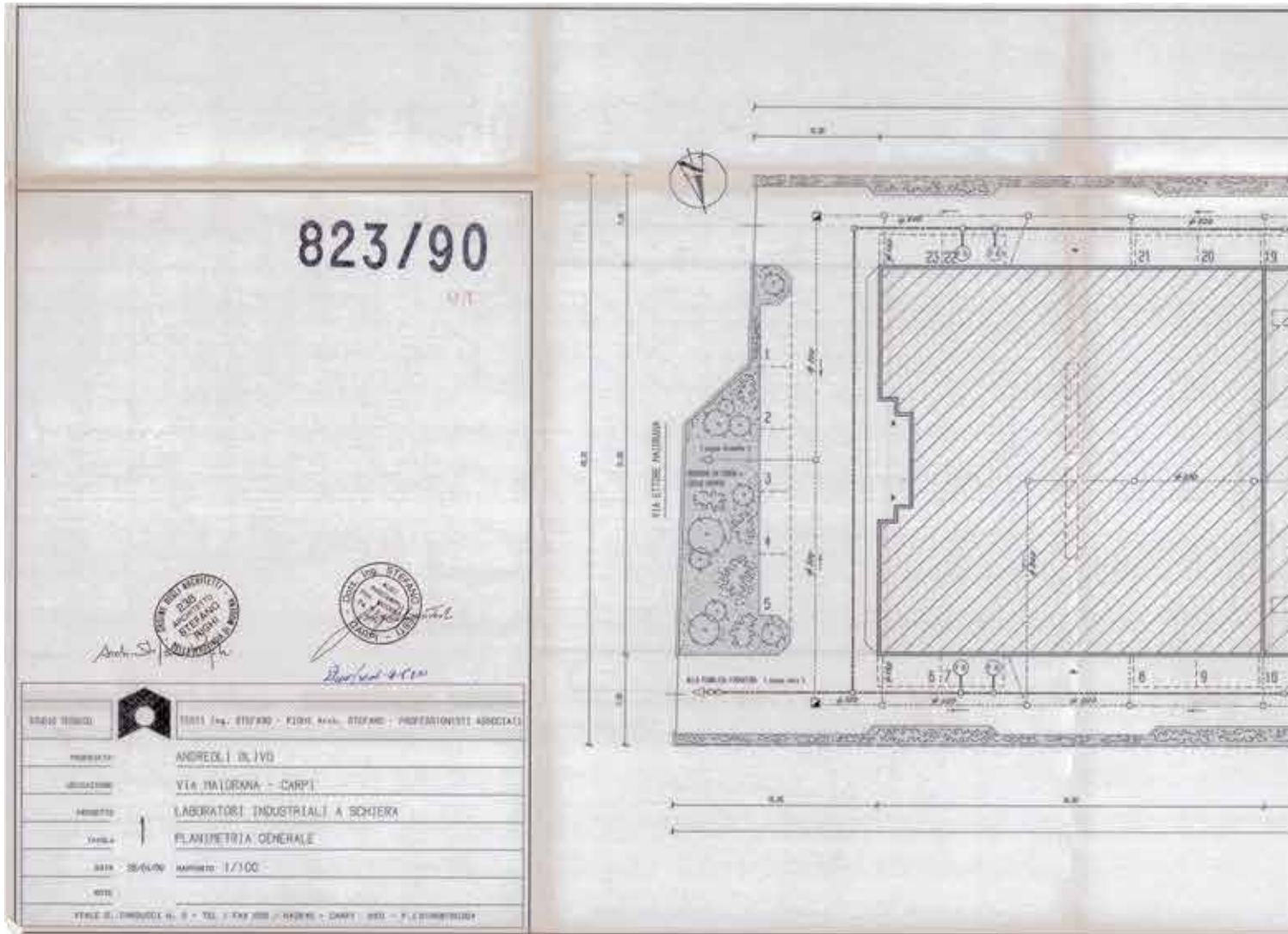


Fig.47: general layout

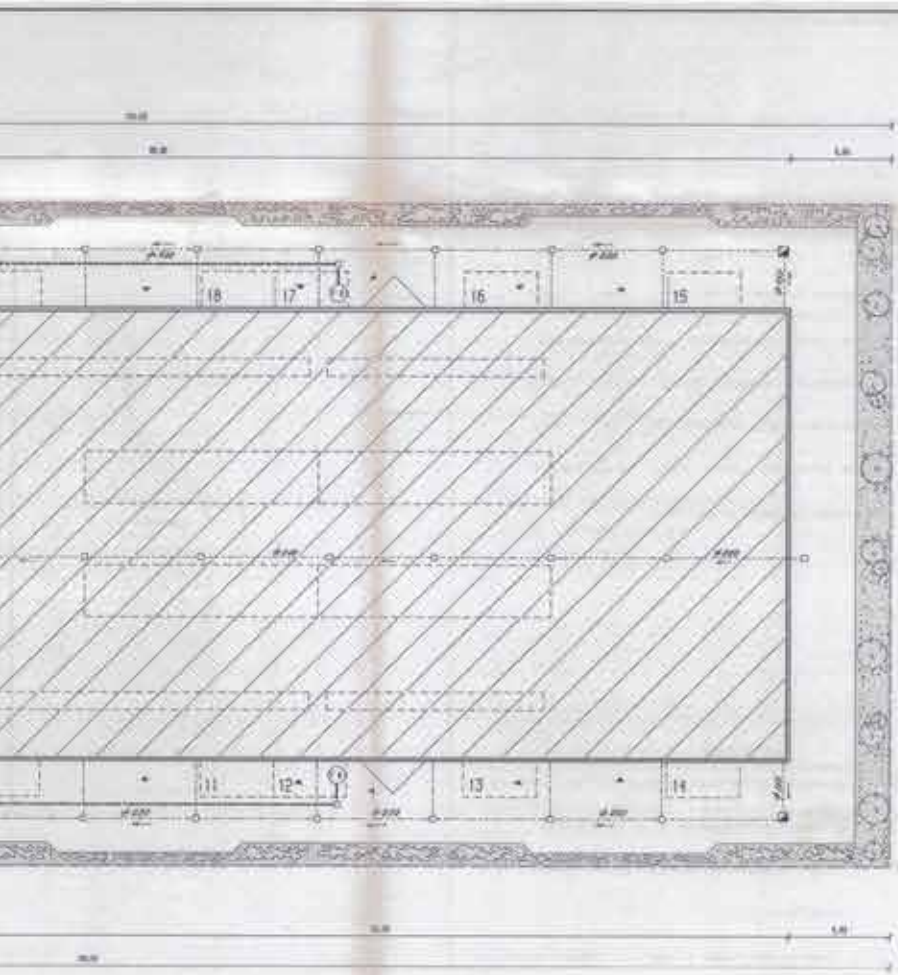


TABELLA - DATI UFFICIALI

- SUPERFICIE PONDURATA (M ²)	H2	4918
- SUPERFICIE COPERTA = 25 x 60	H3	1500
- SUPERFICIE COPERTA DI PROGETTO	H4	2716,410 2917
- SUPERFICIE UTILE, COBERTA = 25 x 70	H5	1750
- SUPERFICIE UTILE DI PROGETTO (Su)	H6	3612
- VOLUME INTERNO AL LOTTO 25 x 10	H7	4918,410 491
- PARCHeggi INTERNI: 17 25 x 25 H8 = H9 275 x H10 342 x 50 x 15		

LEGENDA

- CONDOTTI IN TUBO DI PLASTICA Ø INT. 150 - 200 MM
- PROGETTO PREFABBRICATO DI BACCINO
- PROGETTO PREFABBRICATO COMPLETO D'ESPEDIRE
- FORMA BIOLOGICA
- PROGETTO PREFABBRICATO SPUNTO DI PROSECUZIONE

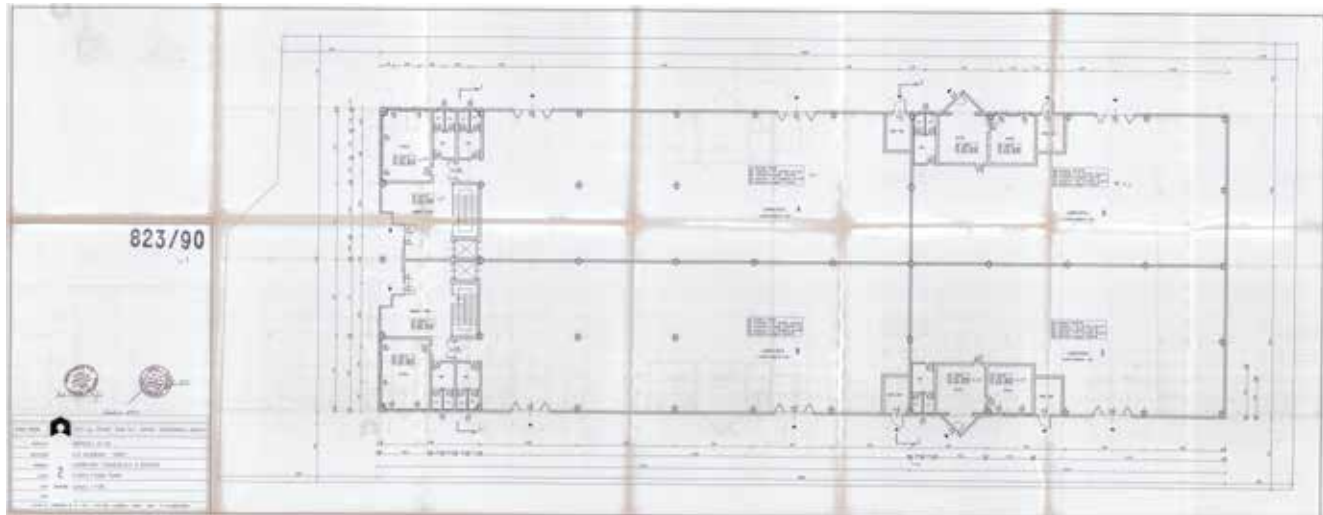


Fig.48: ground floor plan

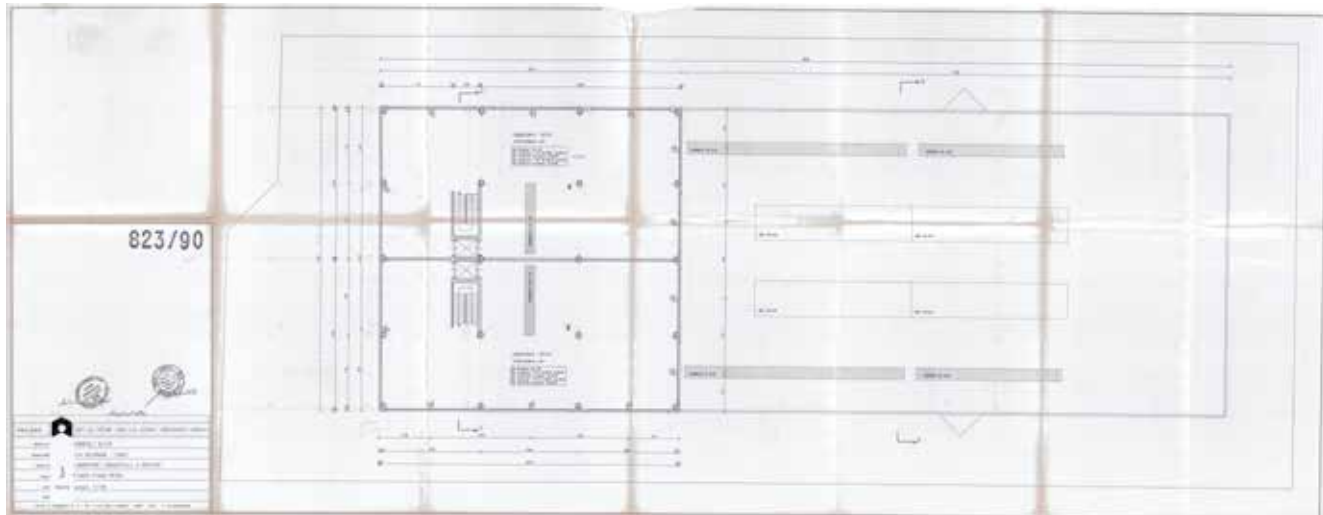


Fig.50: first floor plan

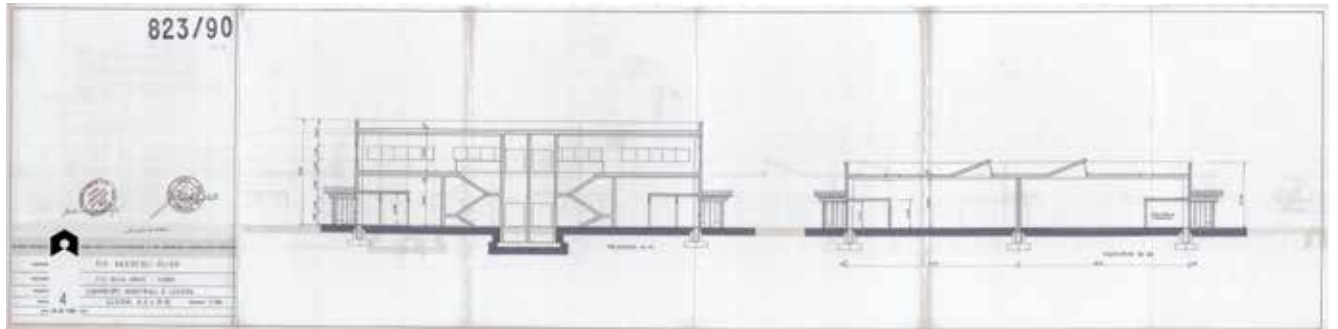


Fig.51: sections

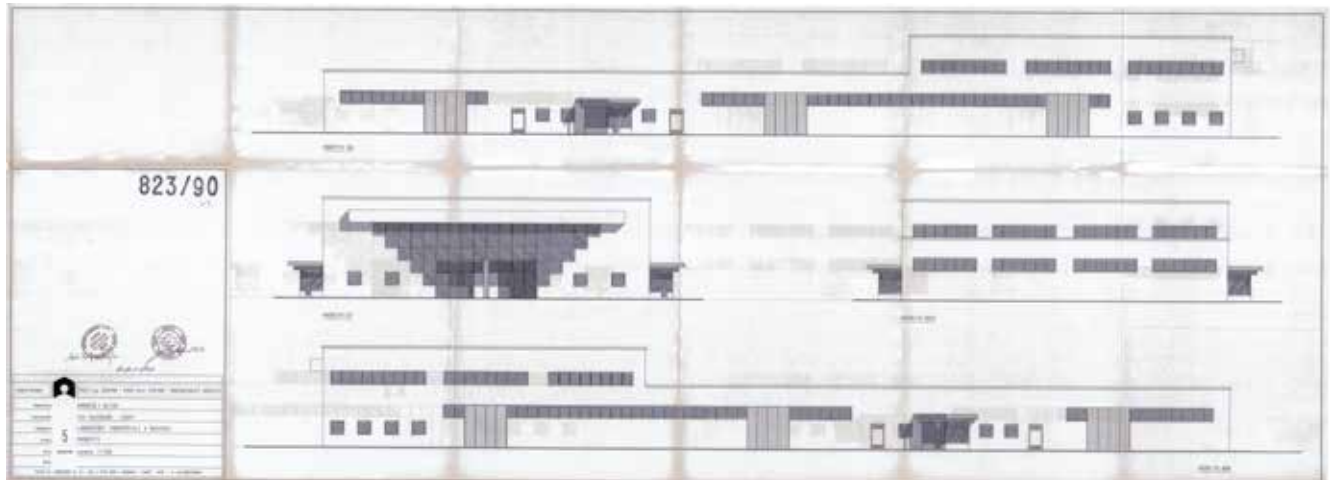


Fig.52: elevations

PHOTOGRAPHIC REPORT

Fig.53: aerial view of the area



F108 M51

Fig.54: warehouse F108 M51



Fig.55: interior view to the north



Fig.56: interior view to the south



Fig.57: interior view to the east



Fig.58: interior view to the west



F108 M193

Fig.59: warehouse F108 M193



Fig.60: interior view to the west



Fig.61: interior view to the south



Fig.62: detail of the elements



Fig.63: view from the west. On the back, warehouse F108 M51



F108 M214

Fig.64: warehouse F108 M214



Fig.65: interior view to the north



Fig.66: interior view to the east



Fig.67: interior view to the west



Fig.68: detail of the elements



DESIGN PROCESS

Sketches

Fig.69: diagram of the regulating grid

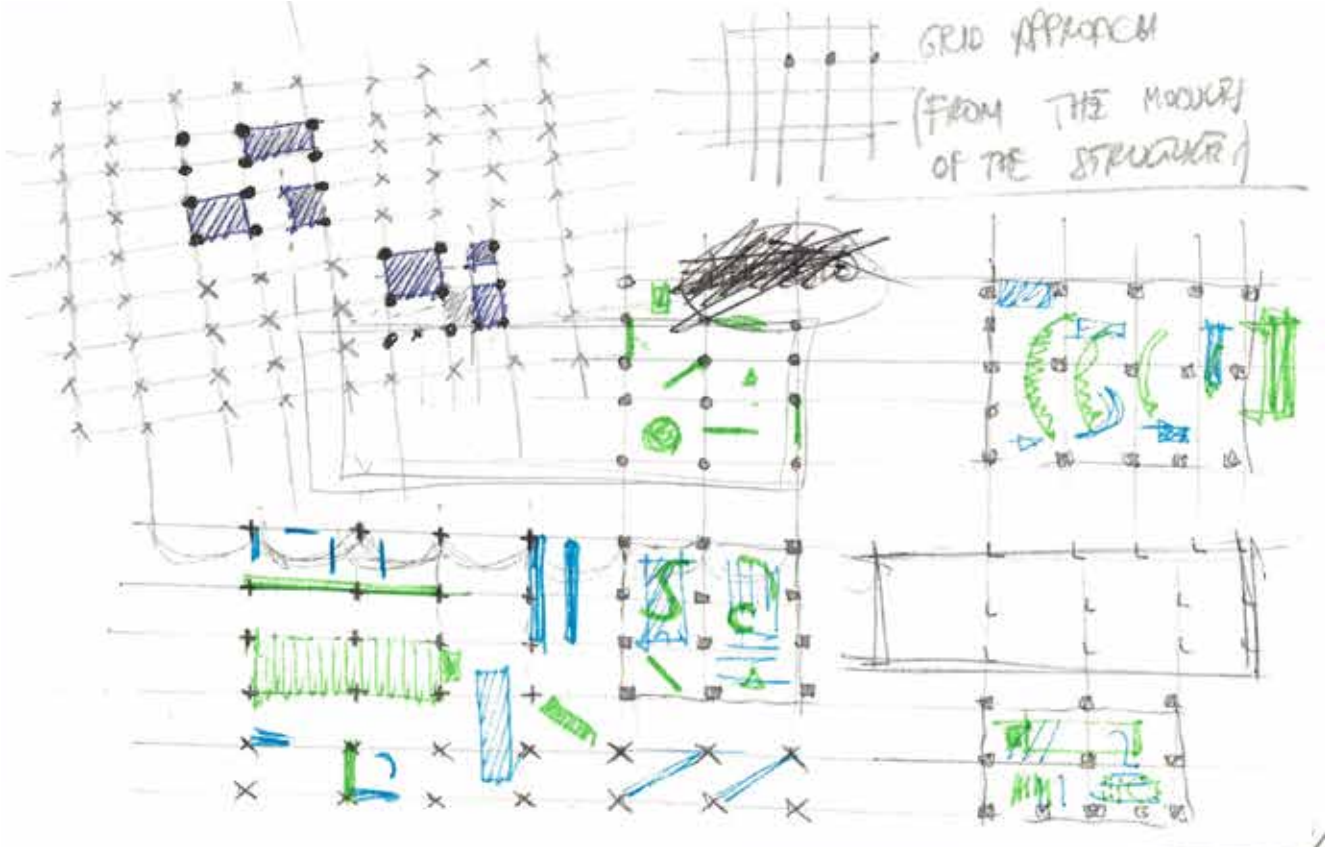


Fig.70: idea of a possible connecting element (in red) between the sheds

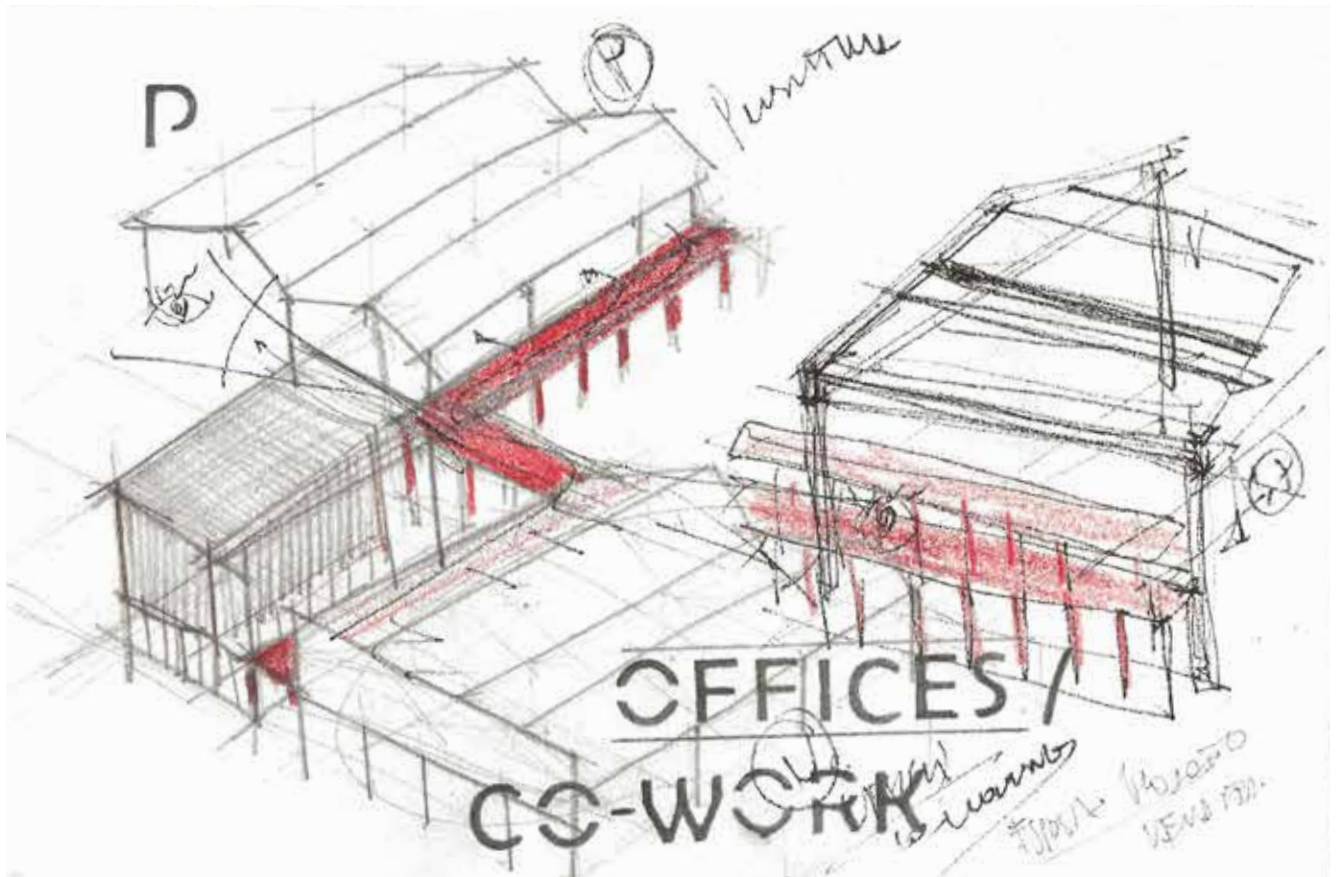
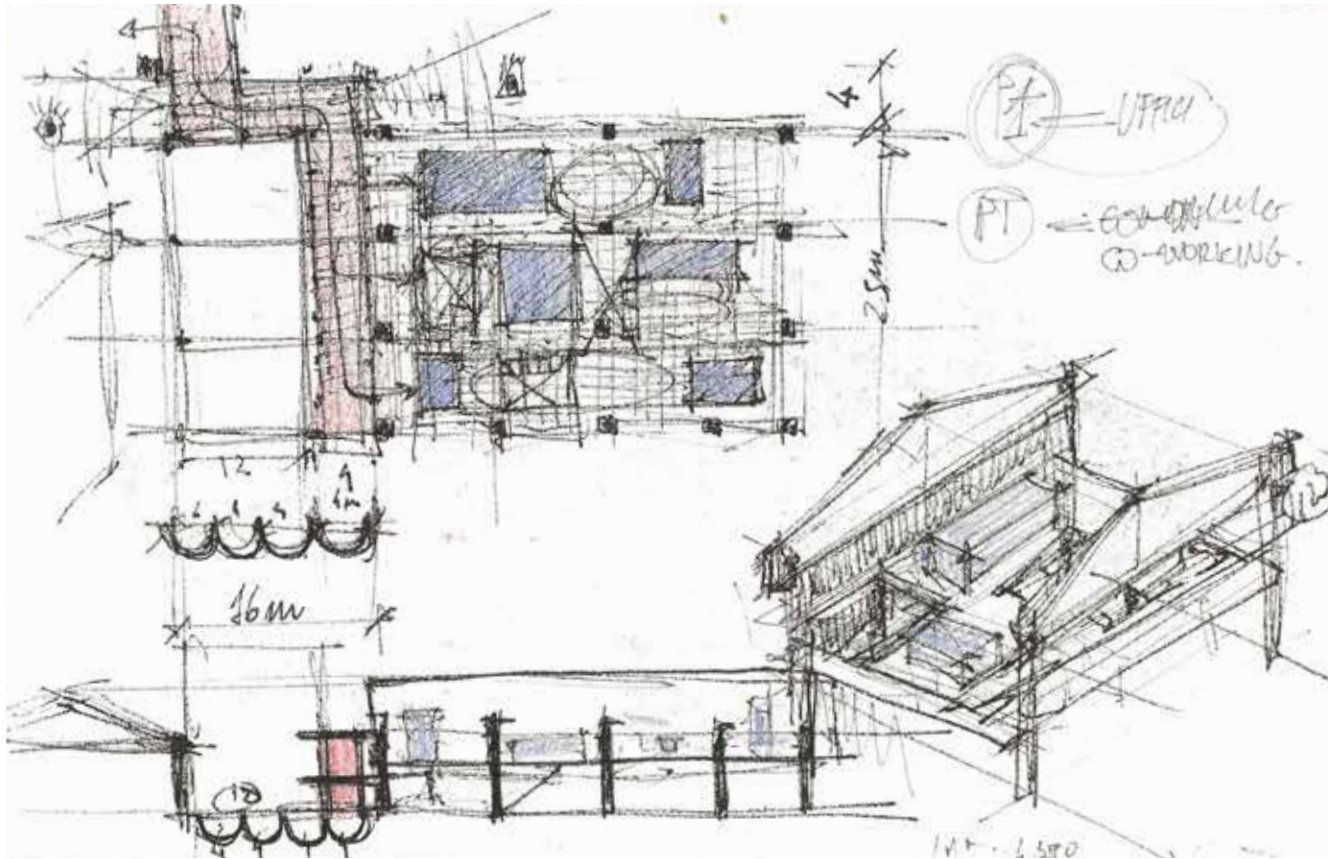


Fig.71: possible interior distribution



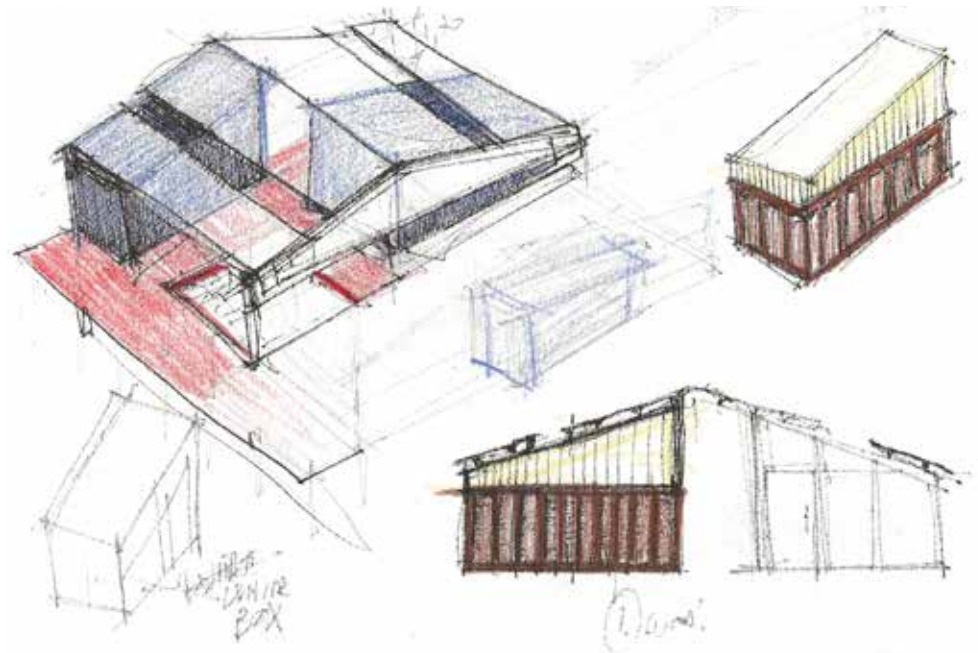
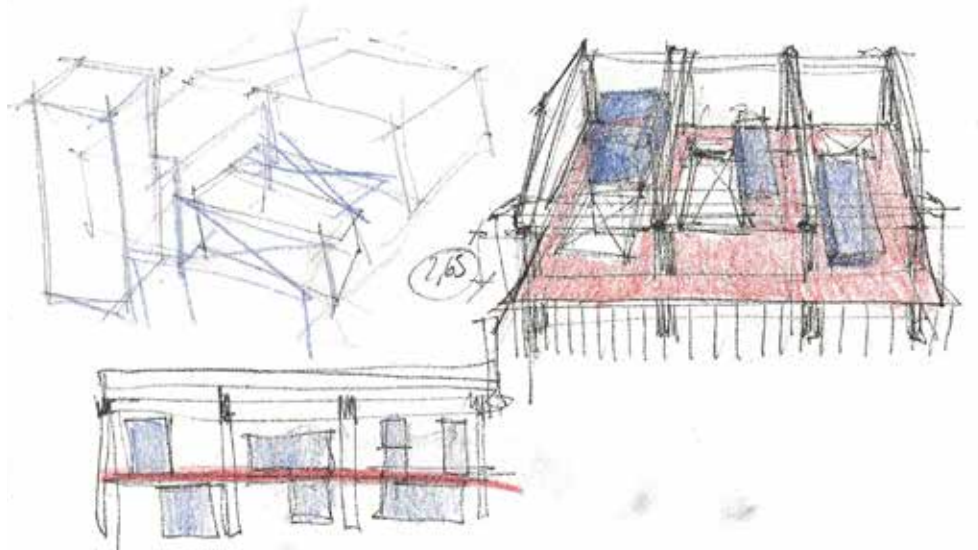


Fig.72-73: possible interior distribution of the elements on two levels

Fig.74: interior distribution with fixed elements

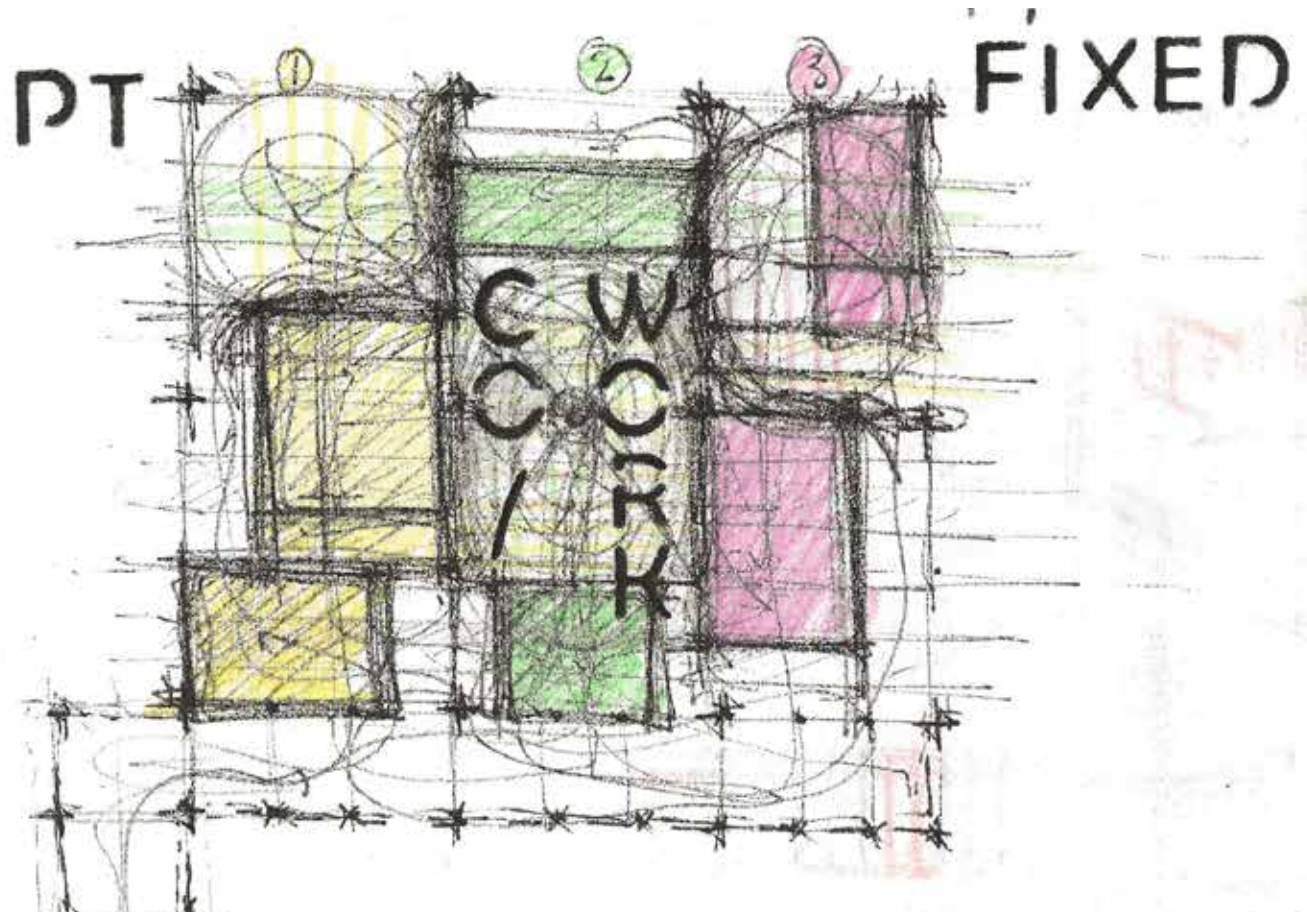


Fig.75: interior flexible space

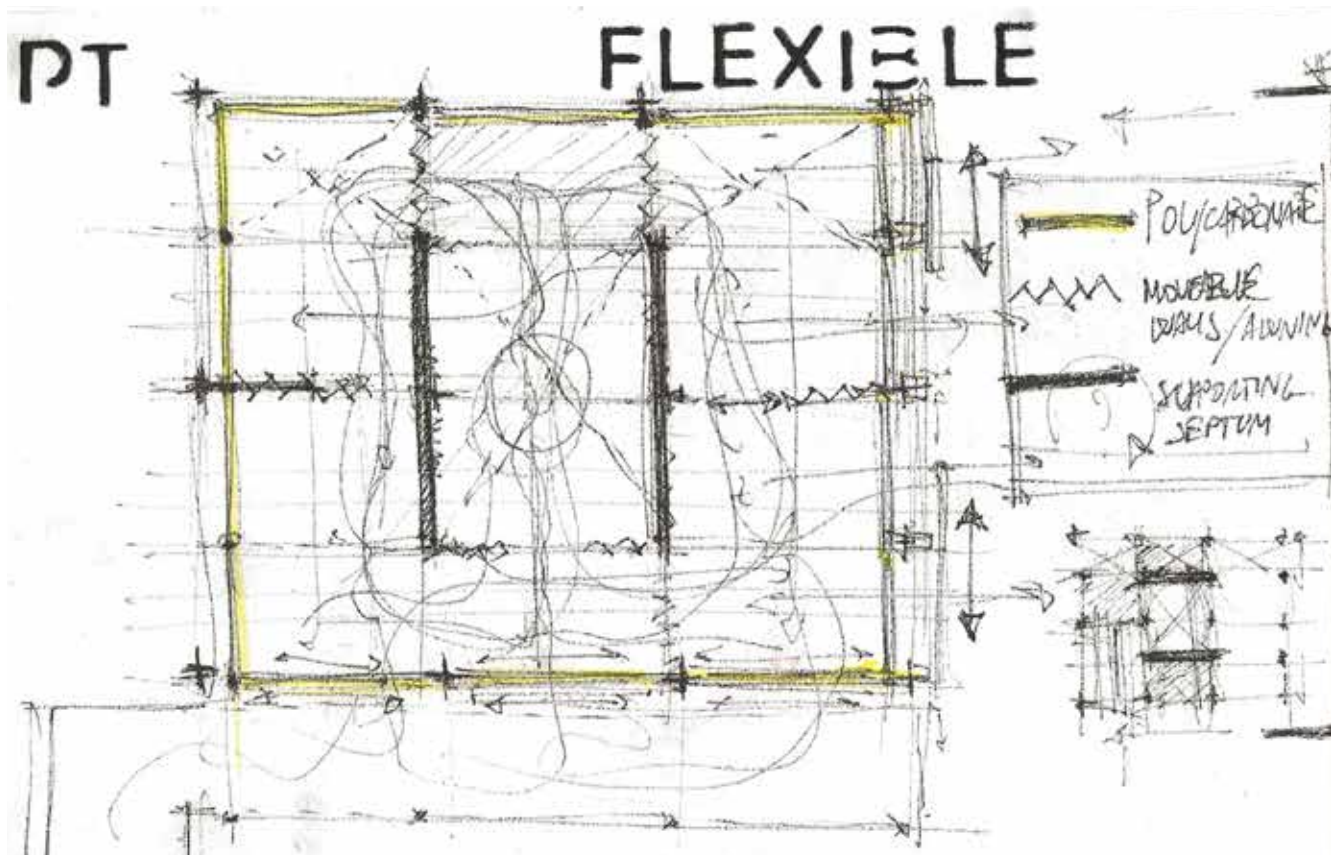


Fig.76: interior distribution of the first floor

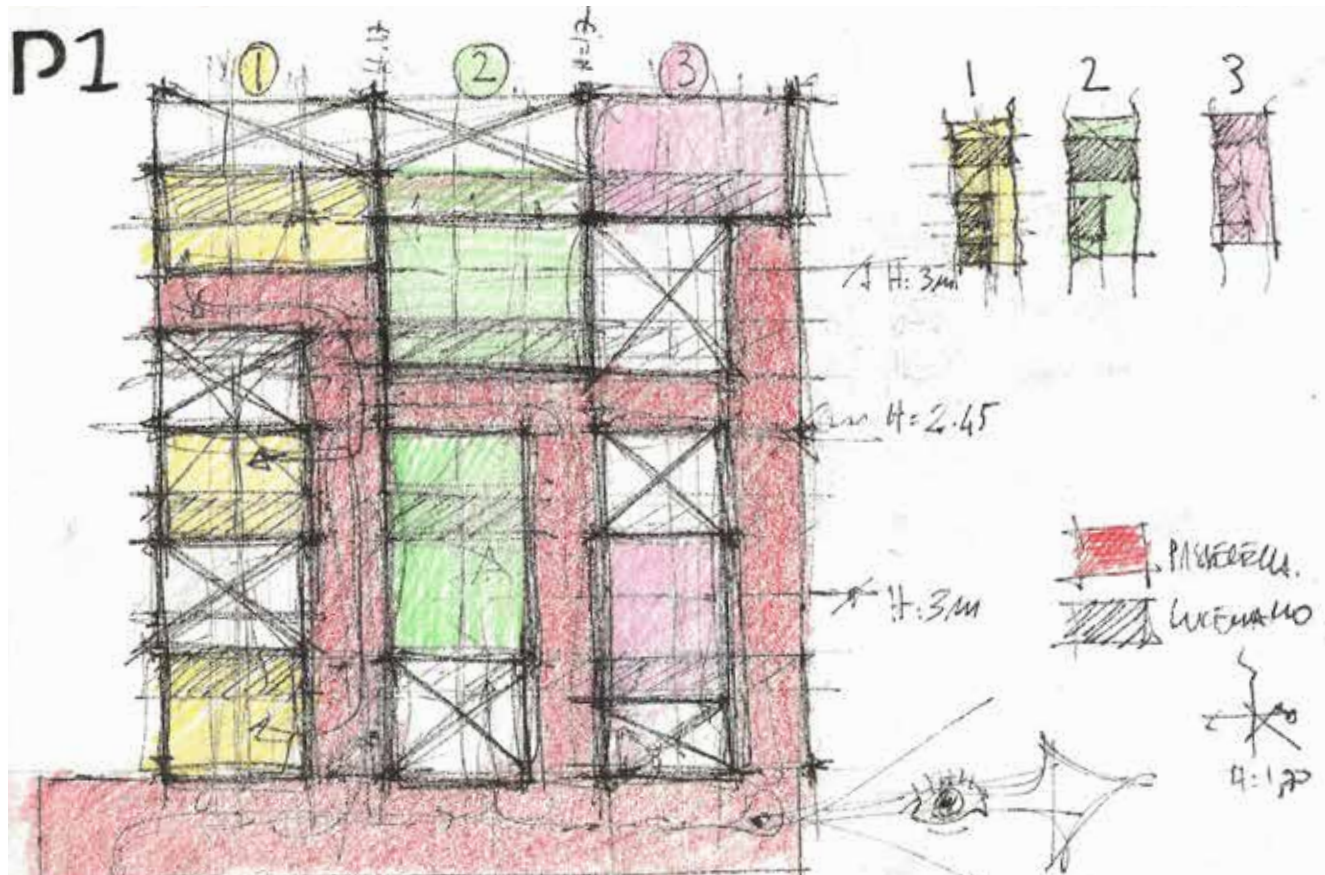
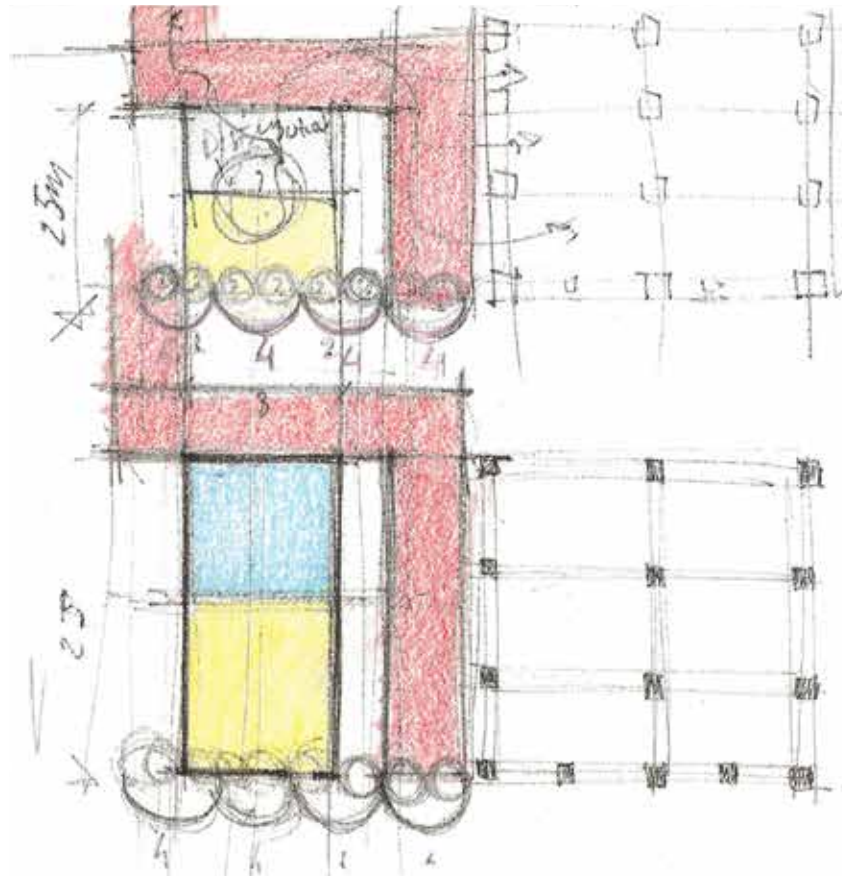


Fig.77: idea of a possible volume with a connecting element between the sheds



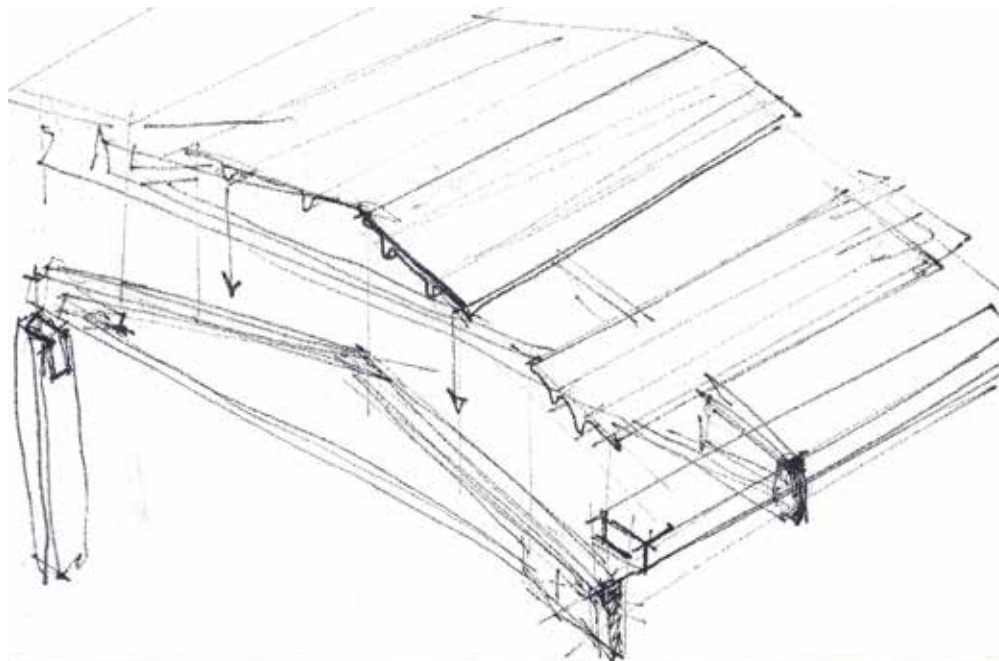
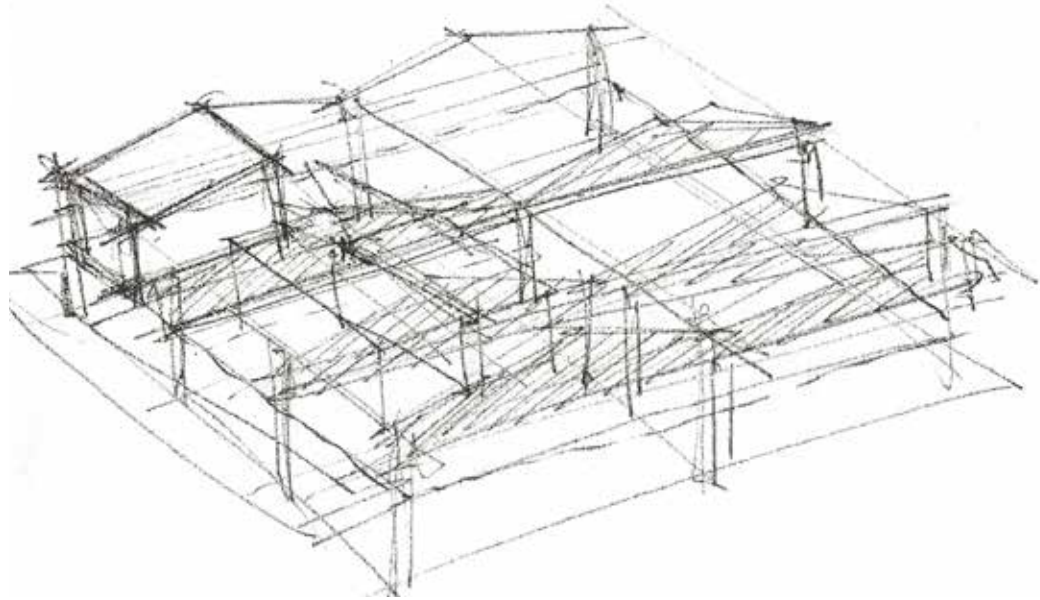


Fig.78-79: axonometric drawings of the existing structures

Fig.80: study of the polycarbonate envelope

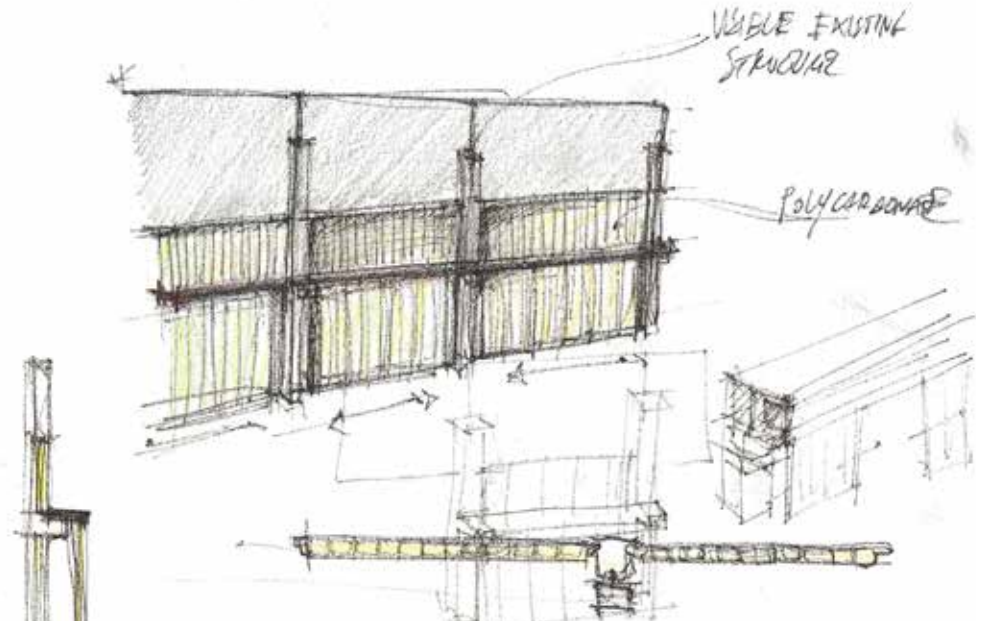
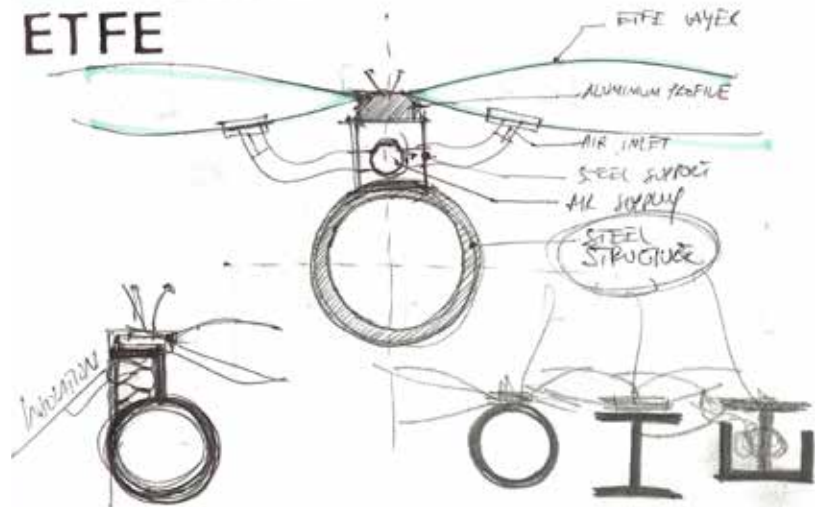


Fig.81: study of the ETFE details



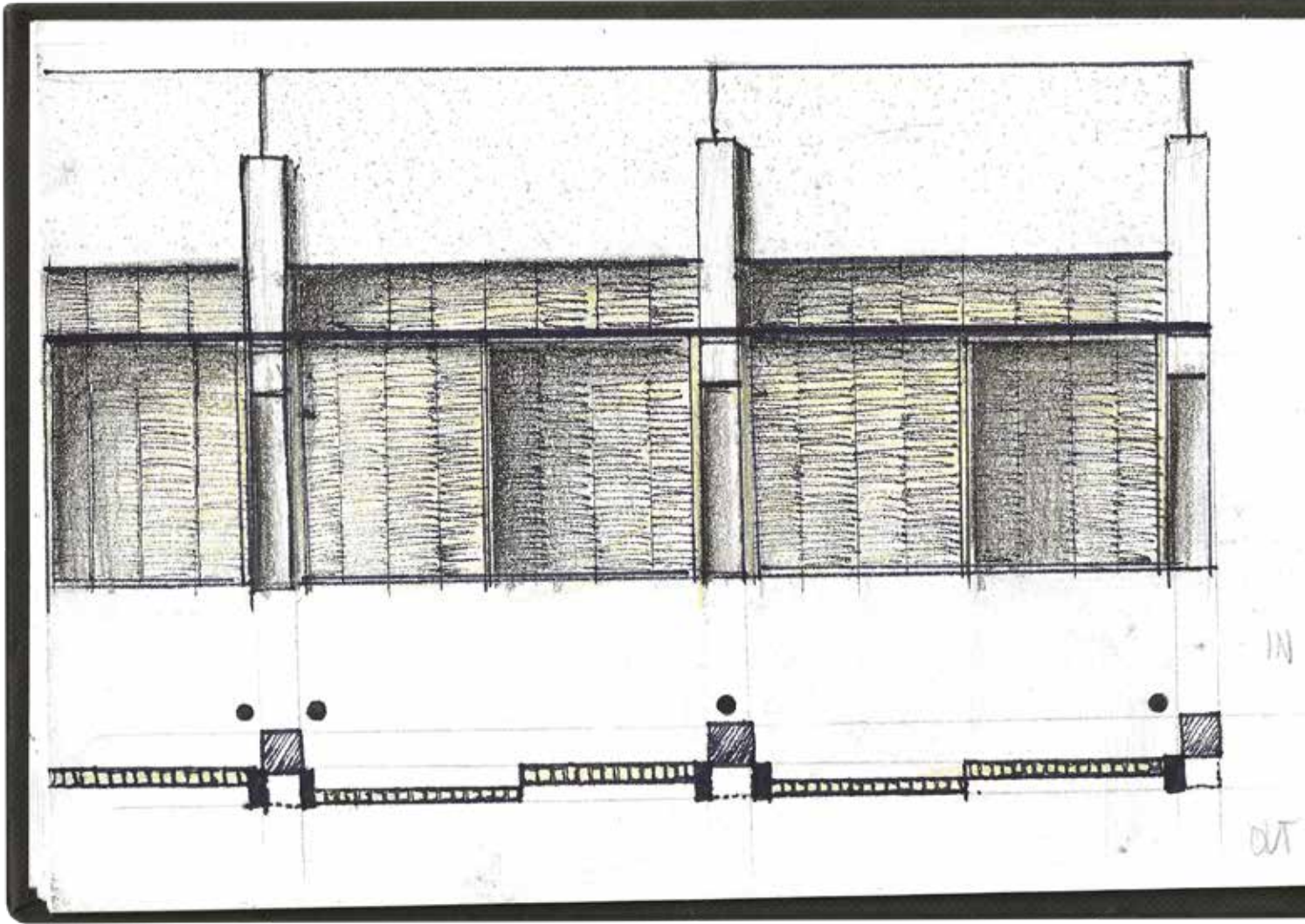


Fig.82: study of the polycarbonate envelope

ETFE

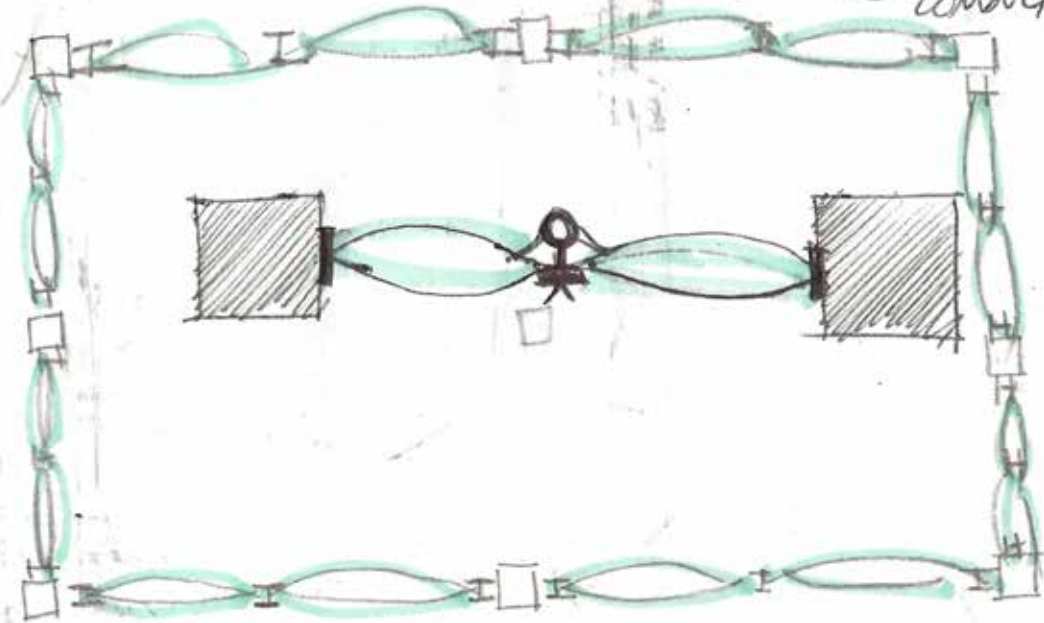
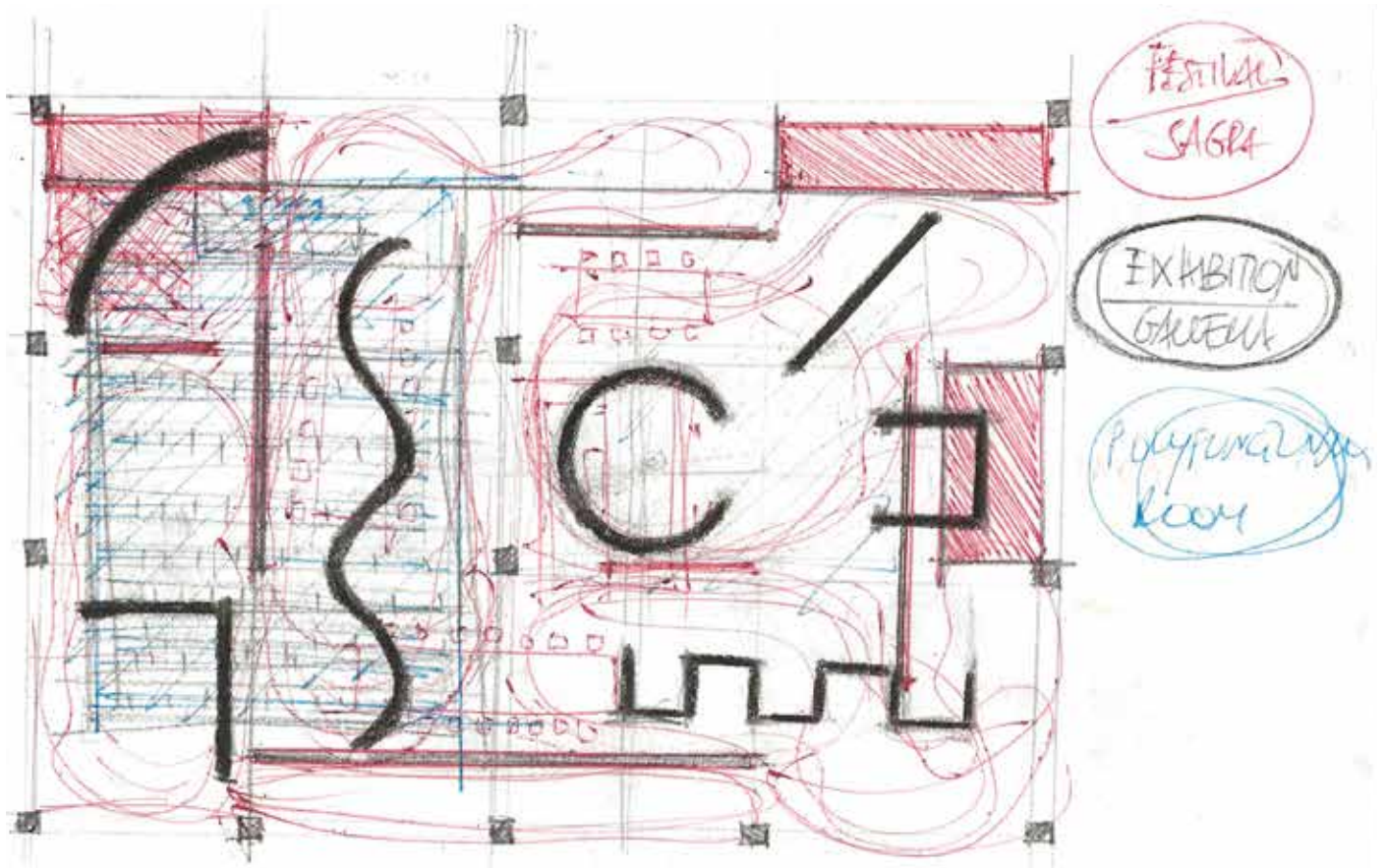


Fig.83: study of the ETFE details

Fig.84: functional multipurpose diagram



BIBLIOGRAPHY

Sposito C., *Sul recupero delle aree industriali dismesse. Tecnologie materiali impianti ecosostenibili e innovativi*, Maggioli editore, Milano, aprile 2012.

Sadler S., *Archigram: Architecture without Architecture*, London, MIT Press Ltd, 2005.

Zanelli A., *Trasportabile/Trasformabile. Idee e tecniche per architetture in movimento*, Libreria Clup, gennaio 2003.

Paredes C., *Industrial chic : reconverting spaces*, Savigliano, Gribaudo, 2006.

Wolfer Calvo M., *Archigram-Metabolism : utopie negli anni Sessanta*, Napoli, Clean, 2007.

Cook P. (edited by), *Archigram*, New York, Princeton architectural press, 1999.

Crompton D. (edited by), *A Guide to Archigram 1961-74*, London, Academy Editions, 1994.

Gargiani R., *Archizoom associati, 1966-1974 : dall'onda pop alla superficie neutra*, Milano, Electa, 2007.

Branzi A., *No-stop city: Archizoom associati*, Orleans, HXX editions, 2006.

Hardingham S., *Cedric Price works 1958-2003 : a forward-minded retrospective*, London : Architectural association, Montreal : Canadian centre for architecture, 2016.

Steiner H.A., *Beyond Archigram: The Structure of Circulation*, Routledge, 2008.

LeCuyer A., *Effe: Technology and Design*, Walter de Gruyter GmbH, 2008.

ONLINE SOURCES

ARTICLES

Andrea Branzi (2019) Third Time, *Journal of Architectural Education*, 73:1, 92-93, DOI:10.1080/10464883.2019.1560804

URL: <https://doi.org/10.1080/10464883.2019.1560804>

Andrea Branzi, LEARNING FROM MILAN: DESIGN AND THE SECOND MODERNITY, *Art Documentation: Journal of the Art Libraries Society of North America*, Vol. 8, No. 3 (Fall 1989), p. 164.

URL: <http://www.jstor.org/stable/27948117?origin=JSTOR-pdf>

Yeqiu Yang and Zhuolin Xie 2019 IOP Conf. Ser.: Mater. Sci. Eng. 573 012077

URL: https://www.researchgate.net/publication/334908799_The_Rebellious_Journey_Archizoom_Associati_and_Andrea_Branzi

Craig Buckley; *Envisioning Assembly: Archigram and the Light/Sound Workshop*. Grey Room 2018; (73): 26–53.

URL: https://doi.org/10.1162/grey_a_00255

Stanley Mathews, *The Fun Palace: Cedric Price's experiment in architecture and technology*, *Technoetic Arts: A Journal of Speculative Research* Volume 3 Number 2, © Intellect Ltd 2005.

Article. English language. doi: 10.1386/tear.3.2.73/1

Carlotta Mazzola, Alessandra Zanelli, Bernd Stimpfle & Roberto Canobbio (2020): Temporactive pavilion: second design-to-construction loop of an ultralightweight temporary architecture, *Architectural Engineering and Design Management*, DOI: 10.1080/17452007.2020.1769545.

URL: <https://doi.org/10.1080/17452007.2020.1769545>

Emmanuelle Real, « Reconversions. L'architecture industrielle réinventée », *In Situ* [En ligne], 26 | 2015, mis en ligne le 06 juillet 2015, consulté le 25 mars 2020.

URL : <http://journals.openedition.org/insitu/11745>

CHRISTOPH LUEDER, *Diagram Utopias Rota and Network as Instrument and Mirror of Utopia and Agronica*, *Journal of Architectural Education* (1984-), Vol. 67, No. 2 (October 2013), pp. 224-

233, Taylor & Francis, Ltd. on behalf of the Association of Collegiate Schools of Architecture, Inc.
URL: <https://www.jstor.org/stable/42570101>

Popov, Lubomir and Gary David. 2015. "The Architect as a Social Designer: The Fun Palace Case." *Enquiry* 12 (1): 9-16. URL: <http://dx.doi.org/10.17831/enq:arcc.v12i1.388>

Cedric Price and Joan Littlewood, *The Fun Palace, The Drama Review: TDR*, Spring, 1968, Vol. 12, No. 3, *Architecture/Environment* (Spring, 1968), pp. 127-134, The MIT Press.
URL: <https://www.jstor.org/stable/1144360>

Stanley Mathews, *The Fun Palace as Virtual Architecture: Cedric Price and the Practices of Indeterminacy*, *Journal of Architectural Education* (1984-), Feb., 2006, Vol. 59, No. 3 (Feb., 2006), pp. 39-48, Taylor & Francis, Ltd. on behalf of the Association of Collegiate Schools of Architecture, Inc.
URL: <https://www.jstor.org/stable/40480644>

SITES

<https://www.spatialagency.net/database/why/pedagogical/price>

<http://architecturewithoutarchitecture.blogspot.com/>

<http://architettura.it/architettura/20020219/index.htm>

<https://medium.com/@emilyrowlings/a-walking-city-archigram-and-ron-herron-7dbf2c8fae99>

<https://placesjournal.org/article/history-of-agrarian-urbanism/?cn-reloaded=1>

1

2

3

4

5

6

7

8

9

10

11