



## Rehabilitation of an example of industrial archeology.

***A zero km new food market, capable to join commercial activities and social uses.***

### Type of intervention

Restoration  Rehabilitation / Renovation

### Concerned elements on the intervention project

- 1. Foundations and underground structures
- 2. Vertical structures
- 3. Horizontal structures and vertical connections
- 4. Roof and terraces
- 5. Façade and building envelope
- 6. Finishes and completion elements
- 7. Integrate services
- 8. General strategies for building recovery

**Site** San Lorenzo Street, 288, Palermo, Sicily, Italy

**Objectives** Rehabilitation of an industrial-archaeological building and transformation into an agri-food market.

**Property** Private: Vita srl Company

**Designer** Designer: Arch. Chiara Mazarella  
Structural consultant: Eng. Giuseppe Barone and Eng. Antonino Guella  
Safety manager: Arch. Simone Marchese  
Construction company: ND Costruzioni  
Designer consultant: Arch. Bruna Petracca

**Date** 2015-2016



## Background to the intervention

The building complex, that nowadays has a strong commercial vocation, was a factory that for its constructive and typological features is dated back to the second half of the XIX Century. It was probably used as a warehouse for the activities of the Harens family.

After the Second World War, it was purchased by the Frascapolara family and, since then, it has been used for citrus fruits processing and transformation into derivatives (oils, essences, juices, etc.).

Certainly, in the recent past, the building complex ICS Industrie Chimiche Siciliane (trad. Sicilian Chemical Industries) or San Lorenzo Olii (trad. Saint Lawrence Oils) has been, for the neighborhood, an important reference as it supplied for labour in the neighbourhood. Between the end of the '60s and the beginning of the '70s of the XX century, it gave work to about 50 employees and 30 seasonal workers: it was the period of maximum productivity, when Sicilian products reached even the most distant Countries.

From the second half of the '70s, due to the commercial competition and contraction of the market, the Frascapolara family was forced to stop the production and close the company. It has been in disuse for decades, since 2008 the building belongs to the Company Vita srl.

## Description of the building

The building develops around an internal courtyard, open on one side and following the typical architectural configuration of the Sicilian farms. The building is characterized by a load bearing masonry structure made by squared calcarenitic (containing with shells) ashlar and a wooden roof with mixed trusses (wooden struts and metal chain), purlins and a roof with

marseillaise tiles. It is equipped with large skylights in iron and glazing placed in the roof, and small holes on the main façade. It consists of large and regular volumes that follow one each other over the courtyard (Figure 1). That is not paved, and, in the past, it was surrounded by large canopies that flanked the internal façades.



Fig.1: Façade along San Lorenzo Street. © Arch. Chiara Mazzarella

## The Diagnosis of the building (values and state)

The original industrial agri-food factory consists of a series of buildings, some of which were built in a later moment (Figure 2). The long period of neglect has led to a general deterioration of the wooden roofing structures and the external and internal plasters.

The original internal flooring was, in many spots, degraded and disconnected from the support. Also the internal court had

debris, neglect and the lack of the original vegetation.

The building systems, if present, are dated back to the period when the building was used as a storage shed; therefore, they were not usable and adaptable to the current regulations and to the requirements of the new intended use.

The openings on the ground floor were partially blocked and closed by new volumes built in adherence, which had changed the usability of the original setting.

Some of the original doors and windows were still in place and were adapted to the new function of the agri-food market (Figure 3).



Fig.2: Schematic plan of the top view of the original state © arch. Chiara Mazzarella



Fig.3: Views of the original state. © Arch. Chiara Mazzarella

## Rehabilitation works

The rehabilitation project was strongly guided by the “rule of the art” of the local tradition. As an essential starting point, the original use of the factory was considered: processing industry and production of citrus derivatives. The result was the starting point in the choice of each design element: from the preliminary phase to the choice of furniture. Each element leads, as far as possible, to the *genius loci*, still now, so characterizing. The industrial aspect has become the defining formal element to be

improved. Wherever possible, through a real rehabilitation of the masonry shell, it was guaranteed the preservation of every trace of the old activity. Degraded plasters were consolidated and the masonry texture of the squared shell limestone blocks consolidated to make the face view visible. Doorway metal lintels remained visible; the old tanks, the iron hooks, and the ceramic elements of the electrical systems were preserved. The cement tiles of the internal pavement, still present in some settings, although in a very poor state of conservation, were used as a trace to redesign the new flooring.

In this building characterized by such a strong industrial character, the intervention was strictly related to the local constructive tradition, revisited and updated by simple and effective contemporary constructive elements. New settings have been demarcated by steel and glass structures, where considered appropriate, as they allowed the visitors to look at the most important food processing areas like the laboratory of ice cream, the furnace and the chip shop, but also the restaurant’s kitchen of the new food market.

Recovered iron and wooden elements were used for mezzanines and their access stairs.

It was built on a loose stone foundation with permanent formworks and a screed for new floorings, systems as well as an effective insulation in the ground.

Finishes for spaces open to the public are made by the materials of the local tradition, cement floors are similar to those that were found in situ and cement bricks were made locally, Carrara or Billiemi marbles and Sicilian majolica tiles, calcarenitic fair-faced wall surfaces or consolidated and stabilized plaster.

The rehabilitation project foresaw the relocation of the

numbered old wooden front gates, found in the original construction, and once used to separate rooms dedicated to different activities. The other internal doors used to get into the various shops were made of wood.

Wooden windows on San Lorenzo Street, still existing today, like those of the office tower, were recovered; the external ones, facing the courtyard, were made with a metal frame in corten and double glazing 7/12/9 cm thick.

Rooms of the first floor along San Lorenzo Street, as in the past, have been used for offices: the intervention has included the renovation of fixtures, flooring, plasters and the adaptation of the systems to the most modern needs of contemporary living. New plant of water, electricity and heating, designed for the new zoning use and in compliance with the present regulations, aimed at preserving the industrial character of the factory. Appropriate measures guided the choice of lighting fixtures and the methods of construction. In memory of the industrial character as far as possible, the tubes of the air conditioning were left exposed in metal roof ducts. The electrical system was distributed in external pipes supported by metal bands while the water one in Mannesmann pipes.

Outside, the courtyard has been transformed into a large garden with typical essences of the Sicilian environment: medicinal plants such as arabic jasmine, rosemary, sage, basil, marjoram, thyme, and mint.

A small citrus grove was placed in memory of the ancient factory that used to treat lemons, tangerine, oranges, lumies, and cedars; a rose garden, olive trees and an educational vegetable garden that demonstrates to guests how, where, and when growing vegetables and fruits.

Strawberries in spring and not during winter, eggplants and

peppers in summer and not all year, typical vegetables of the cold season and not in the warmer months, as an example.

Since the main purpose of the project was to allow the maximum enjoyment of the garden, that was equipped for visitors walking and stopping, moving freely inside as in a home garden, sitting under the shade of the fronds during the sunny days while attending educational demonstrations.

The other parts, not intended for planting essences, were paved with waste wood (purlins and strips replaced on the roof by new elements) and river gravel in order to ensure permeability to the surface and to facilitate the rainwater drainage.

The study of the historical cadastral documentation has highlighted the presence, in the courtyard, in a not too distant past, of large portico on some internal façades. To carry out the original processing of the factory there were also designed volumes exclusively dedicated to offices, toilets, storage rooms, and tanks of variable height, from 2.4 m to 3.2 m.

In order to make the outdoor space available all year long, in agreement with the offices of the Superintendence of the Sicilian Region, the project provided the re-installation of the arcades that once existed along the South and West elevations. This choice was made to release the façade on which the buffered arches have been reopened and to restore a small part of the old volumes by adapting them to the needs of the novel destination. A small volume was built to give further space to the tavern and a kiosk for drinks, keeping with Palermo tradition, both realized with temporary iron and glass structure.

Porticoes were built with a light structure in steel box profiles and metal onduline, in accordance with some solution typical of the industrial architecture.

The ground floor flooring was realized with wrought cement tiles, like city sidewalks. The court has been separated from the neighboring spaces by an iron gate, similar to that already existing in San Lorenzo Street.

### SPATIAL REFUNCTIONALIZATION

The choice of the zoning has been adapted to the novel market needs, redesigning the interior spaces and the distribution, updating the zoning in respect to the memory and the identity of the place.

Based on these assumptions, and verified the urban conditions, it launched a market survey, created a covered food market and some craft shops, with a strong local tradition, to guarantee an offer of zero km products in support to the Sicilian territory.

As sometimes happens, the study of the regulatory framework has suggested, in detail, the reference model. Therefore, the market extends to 1,240 m<sup>2</sup> in total; of these, only 503 were intended for sale while the rest was designed for staff services, public services, gastronomy, entertainment spaces, and offices.



Fig.4a-b: Spatial and functional redevelopment of the ground floor and functional areas identification. © Arch. Chiara Mazzarella

In order to guarantee a complete freedom in the management of the various activities, the project foresaw the division of the property into four independent units that we identify with letters A, B, C, and D as shown in Figure 4.

These units are linked to one another, but - at the same time - they are completely autonomous thanks to the renovation of the original doors, recovered and relocated, if necessary.

The aforementioned units have shared areas and services, such as the space of the portico, the external courtyard with services, the internal courtyard with the garden, and the small kiosk; it is the same for the parking lot.

Inside the commercial structure, the project provided the construction of 10 departments (Figure 5), each one with his own function and identity:

- Coffee shop, ice-cream parlor and pastry shop;

- Books and contents;
- Bakery;
- Fish shop;
- Butcher shop;
- Fruits and vegetables shop;
- Delicatessen;
- Wine shop;
- Fried food shop;
- Tavern.

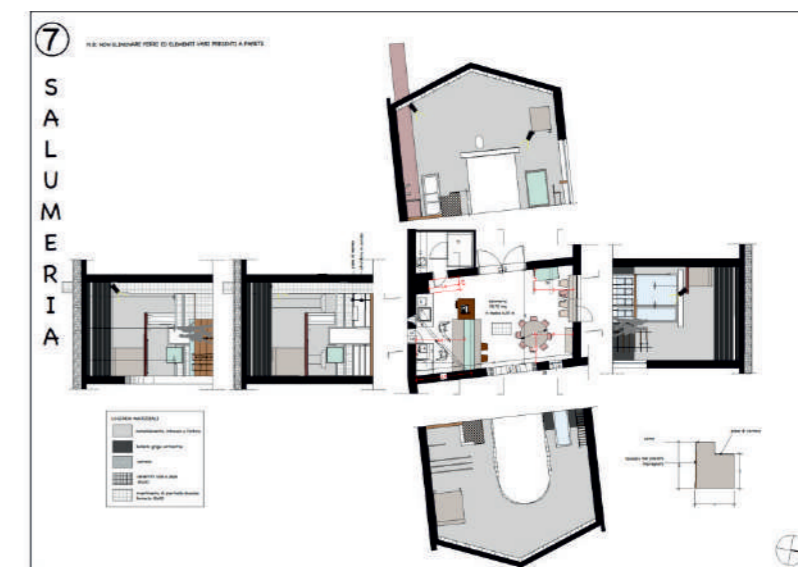
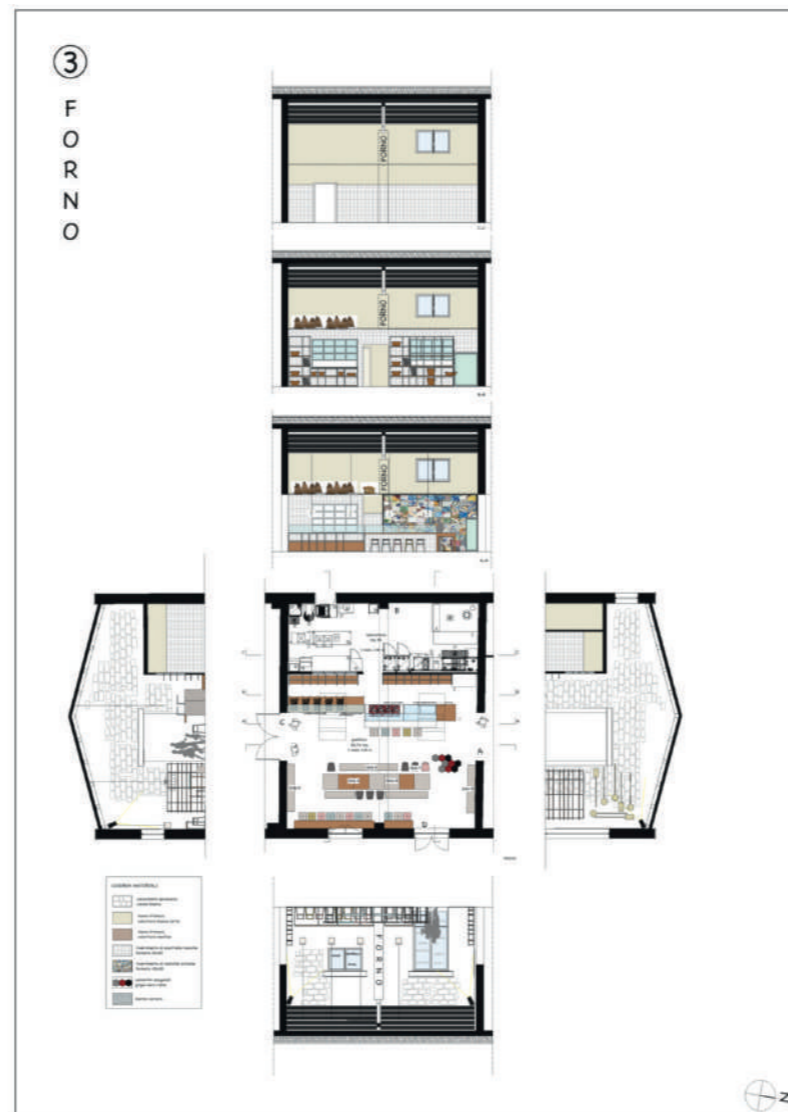
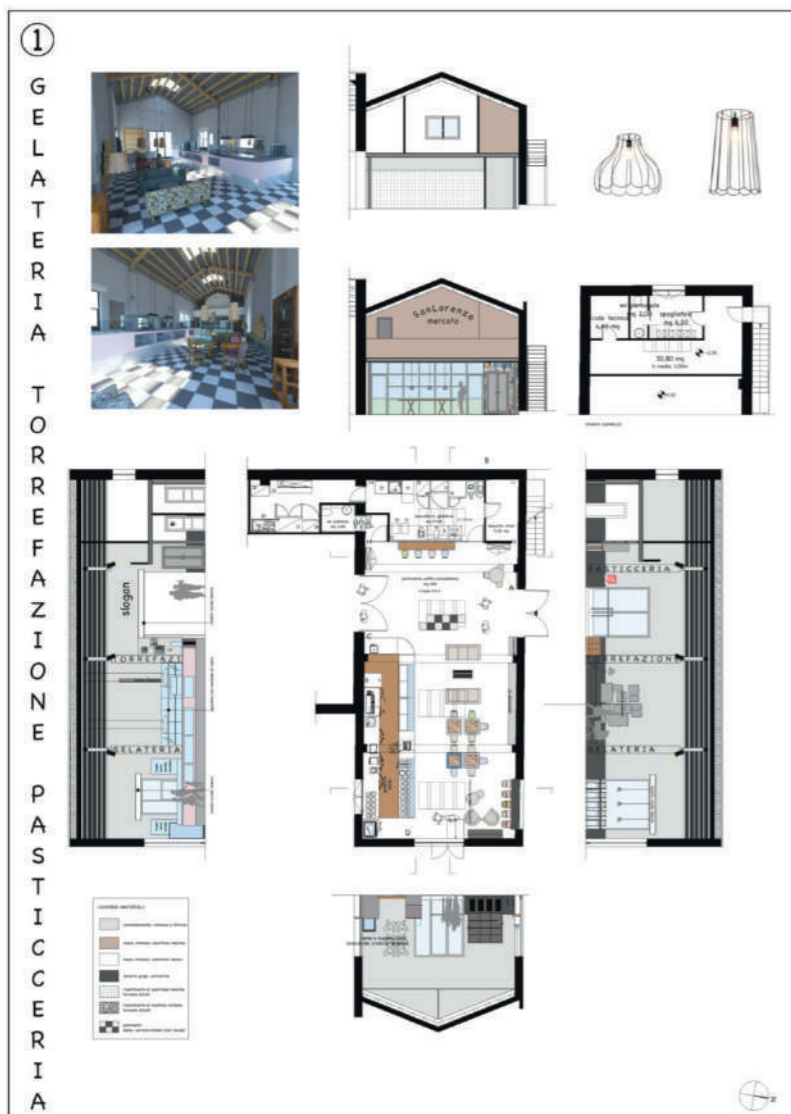


Fig.5: Rehabilitation project, functional and spatial redevelopment of market departments. © Arch.Chiara Mazzarella

To adapt the ancient spaces to the new functions, a series of interventions in line with current regulations were done; they were done using materials, technologies, and colors linked to the historical tradition of the region.

The following interventions were introduced:

- reorganization of building units through the superfetation demolition;
- consolidation of the façades and opening of new compartments;
- structures consolidation and integration of new ones.

In addition, the original volumes were modified to improve the functional and spatial configuration of units through demolition of superfetation and other spaces subsequently added.

### FAÇADES INTERVENTION

#### Façade along San Lorenzo Street

During the cleaning from black crusts, located on the façade along San Lorenzo Street, it was found, under the yellow paint layer, the original "tonachino", a breathable finish (Figure 6). The color was maintained in accordance with the Superintendence of the Sicilian Region (Figure 7).

#### Façades on the internal court

Original façade with lime-based finishes inside the courtyard (Figures 8, 10) were staked to propose again the most recent rustic layer of the '70s (XX Century), based on sand cement (Figure 9).

It also included the restoration of the old finishing based on natural breathable hydraulic lime (Figure 11).



Fig.6: Nord façade along San Lorenzo Street and focus on the original plaster before the rehabilitation. © Arch.Chiera Mazzarella



Fig.7: Nord façade along San Lorenzo Street after the masonry consolidation and new coloring of façades, color tests. © Arch.Chiera Mazzarella





Fig.8a-b: Façades on the internal court before the rehabilitation. © Arch.Chiara Mazzarella



Fig.9a-b: Detail of the rustic cement-based plaster and sting course before cleaning and reinforcement intervention. © Arch.Chiara Mazzarella



Fig.10: East façade on the internal courtyard, before and after consolidation intervention and finishes demolition. © Arch.Chiara Mazzarella



Fig.11: East façade facing the internal courtyard after reinforcement and cleaning. © Arch.Chiara Mazzarella

STRUCTURAL CONSOLIDATIONS AND IMPLEMENTATION OF NEW STRUCTURES

In the delicatessen of the new market, the chimney was preserved, although obsolete, and it was reinforced with a steel closed frame (Figure 12).

The inner finishing layers were sanitized and reinforced with a spray consolidator.

Masonry made by calcarenitic square blocks, found under the removed finishes, was consolidated with water emulsion, nontoxic, that was nebulized on the support in order to strengthen the structure, typically porous and tender and prevent its decohesion. (Figure 13).

In the tavern, the original trusses mixed with metal chain and wooden struts were consolidated (Figures 14, 15). The fire



Fig.12: Delicatessen space before and after in the construction site. Original chimney and tanks were maintained. © Arch.Chiara Mazzarella

legislation has imposed the chain's coating with little cups and covered stretchers that prevent the rise of temperature beyond the critical one of the resistant section (Figures 16, 17).

In the ice-cream shop, as in the other activities, the iron lofts were designed as completely autonomous and independent structures from the original load-bearing masonry of the building. Basically, the original masonry houses the new structures as a container. (Figures 18, 19).

The anti-seismic legislation has imposed the creation of an armed curb at the top, which runs along all the perimeter and spine walls.

New door compartments were made by inserting double T steel lintels connected through threaded connectors (Figures 20, 21). The walls of the furnace, after being consolidated, were



Fig.13: Delicatessen space, during the construction phase; Masonry and openings structural consolidation. Delicatessen at present. © Arch.Chiera Mazarella

sprayed with white nebulized paint directly on the support, without any kind of pre-treatment on the background.



Fig.14: The tavern before the rehabilitation. © Arch.Chiera Mazarella



Fig.15: The tavern during the construction phase. © Arch.Chiera Mazarella





Fig.16: The tavern. Covers consolidation. © Arch.Chiara Mazzarella



Fig.19: Ice-cream shop furniture. © Arch.Chiara Mazzarella



Fig.17: The tavern at present. © Arch.Chiara Mazzarella



Fig.18: Ice-cream shop, during the construction phase; Construction of iron lofts. © Arch.Chiara Mazzarella



Fig.20: The furnace during the construction phase. © Arch.Chiara Mazzarella



Fig.21: The furnace at present. © Arch.Chiara Mazzarella

Also in the vinery mezzanines with independent structure were inserted.

In addition, roofs were consolidated through the construction of a curb chain (Figures 22,23,24). The pavement reproduces the existing cement. (Figure 25).

The mat foundation was made by recycling packaging of the

purchased kitchens: the virtuous principle of the circular economy was the key point in the drafting of the recovery and preparation project (doors, criks, coverings, shelves, and the majority of furniture) (Figure 26).



Fig.22: The Vinery during the construction phase. © Arch.Chiara Mazzarella



Fig.23a: The vinery after loft construction. © Arch.Chiara Mazzarella

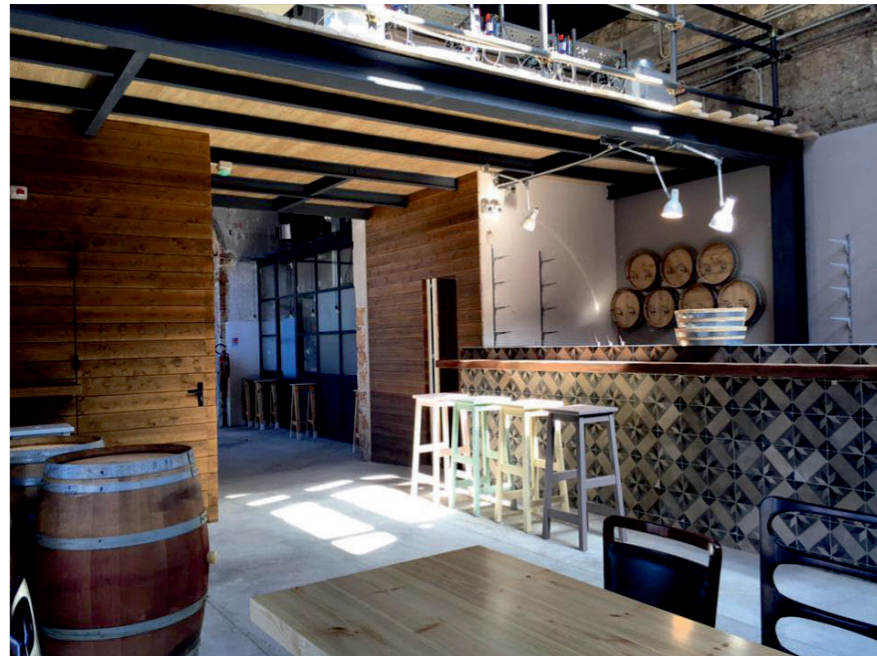


Fig.23b: The winery after loft construction. © Arch.Chiara Mazzarella



Fig.24b: The Vinery during the construction phase; detail of the existing masonry. © Arch.Chiara Mazzarella



Fig.24a: The Vinery during the construction phase; The opening old few door. © Arch.Chiara Mazzarella



Fig.25: The winery. Floor detail before the rehabilitation. © Arch.Chiara Mazzarella



Fig.26: The winery during the opening. © Arch.Chiara Mazzarella

## Assessment of the results

The project aims to dignify a factory that was in complete disuse for over 40 years. This aim has been pursued through the enhancement of the original linguistic and formal characteristics. It respected the typological specificities, and the new use is in perfect harmony with the oldest one.

Particular attention was paid to the choice of the new functions and to their revenue. The project is in line with the most recent concept of “smart city” for the methods of the implementation of the intervention, but also for the attention given to the outdoor spaces, garden and vegetable garden. It has returned to urban, social and economic redevelopment, an important area forgotten for years.

Each function benefits from common indoor and outdoor areas for consumption, entertainment, meeting, debate, and exchange without any limitation that might prevent the user to

move freely and consume the products – that can be bought everywhere: certainly a place where good food and healthy eating are the elements of strong belonging and social cohesion.

Just like in the reference models, San Lorenzo Market offers to the consumer the opportunity to freely choose products, cook them at home or on site, to consume them in situ or elsewhere. The idea is to reproduce a market of popular tradition (as the ones located in various neighborhoods of the city: Capo, Ballarò, Vucciria, Borgo, etc...).

They tried to bring back every traditional aspect: through the finishing material, shops layout, media, menu proposals, and products.

The intent is to ensure recognizability of the Sicilian brand: fresh and processed products in kitchens and shops; the product must refer, always, to seasonality and to the local Sicilian tradition.

In order to adapt the building to the requirement of the new zoning, in compliance with the current regulations on hygiene and safety, the project was designed to locate all the necessary services (laboratories, toilets and dressing rooms, dishwashings, storages, systems rooms, etc.), in some cases also through the construction of appropriate mezzanines.

The entrance gives direct access to the ice-cream shop and to the roasting, afterwards it passes through the bookshop and the cash registers; continuing, there is the market with free accessible settings which allow users to cross the various shops. Guests can choose the order of percorrence through the outdoor courtyard and its garden.

As required by current legislation, the structure was organized

to have each route and service accessible even to people with reduced mobility in accordance with the „design for all“ approach.

The exodus routes are easily accessible for the enjoyment of the market. In accordance with the requirement for sound and light signaling alarm, control buttons and systems adjustment were put to allow an easy use even to people with reduced mobility.

Furnishings were arranged to guarantee straight passages of a width not less than 90 cm and the maneuvering space has a diameter of not less than 150 cm to be inscribed in a rotation circle as required by current legislation. Toilets also were appropriately sized and located.

Doors, windows, and french windows are easily usable even to people with reduced mobility or on wheelchairs; the doorway, in-front and setback spaces are coplanar. The opening and closing mechanisms are easily maneuverable and perceptible and moving parts that can be used by exerting a very slight pressure.

In terms of dimensions, positioning and maneuverability, the internal doors can be easily opened from both sides, glazed exterior doors have safety equipment and could be easily identifiable by signals.

Floors are horizontal and coplanar and, in common and public areas, they are not slippery. Any difference in level is overcome by ramps with an adequate slope not to be an obstacle to the transit of a person on a wheelchair.

The arrangement of the fixed furniture in the various zones allows the transit of people on a wheelchair and makes equipment usable.

To ensure accessibility, fixed furniture is not an obstacle or impediment for the performance of activities also for people with reduced mobility.

In particular:

- counters and countertops, used for normal public operations, are arranged to be, a part of them, usable by a wheelchair; where necessary, there is a waiting space with seating shawls;
- Each activity is reached by a continuous path and connected with ramps and has at least a free space for people on a wheelchair. This space has an horizontal floor and a right dimension to guarantee the maneuvering and the parking of a wheelchair;
- in parking areas, routes are suitable for people on wheelchairs with 4 reserved and dedicated parking spaces to allow movement close to the access;
- The pavement of the pedestrian path is non-slippery. Any differences in level among the pavement elements are not an obstacle to the transit of a person on a wheelchair.

## References

All the information contained in this sheet has been provided by the Arch. Chiara Mazzarella is acknowledged for her kind cooperation.

<https://www.sanlorenzomercato.it/>