

CARBONIA LANDSCAPE MACHINE

FROM 20TH CENTURY COMPANY TOWN TO 21ST CENTURY LANDSCAPE



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The renewal of a foundation city and a modern mining landscape

...the landscape is an important part of the quality of life for people everywhere: in urban areas and in the countryside, in degraded areas as well as in areas of high quality, in areas recognised as being of outstanding beauty as well as everyday areas

– *Preamble European Landscape Convention*

Project Carbonia: Landscape Machine

A motor for the transformation of Carbonia's natural, urban and cultural landscape that today faces its regained present. Today, the city's future can again become what it was in the past.

Introduction

Mandated by the new mayor in his mission statement when he first took office, Project Carbonia began to take shape in 2001, at the height of the new climate generated by the European Landscape Convention. The project was based on the underlying assumption that landscapes "considered outstanding as well as everyday or degraded landscapes" must be treated in a unitary fashion embracing the structuring principle of landscape's territorial significance and consequently, the importance of integrating planning and sustainable management.

Carbonia is denominated città di fondazione, foundation city, constructed during the first half of the 20th century and now included in Sardinia's Geo-mining Park. It is part of an internationally significant landscape, recognized by UNESCO in 2004 as an emblematic example within its Global Network of Geoparks. In 2006, Sardinia's Regional Landscape Plan, in implementation of the European Landscape Convention and Italy's national legislation on cultural and landscape heritage (the so-called Urbani Code), indicated the Geo-Mining Park as a protected landscape. In 2007, it was included in the European Geopark Network.

Historically shaped by mining activities, the region suffered an irreversible crisis during the second half of the 20th century witnessing the decline of its mining-based industrial model. The community, aware of the need to reinvent its future, responded with research into, and application of, new models for sustainable development framed within paradigms of culture and identity and research and innovation, especially in the fields of renewable energy and energy efficiency.

The mining landscape

Carbonia was not born as an isolated urban and architectural episode. Its very foundation, as described by one of the authors of its original plan (see poster n 2), was structurally based on the chosen site's relationship to its landscape and, of course, to its coal resources. Thus Carbonia was founded as the principal node in a vast territorial network, expression of a grand 20th century landscape project for an autarchic coal district which comprised:

- ▶ a new system of company towns (the mining villages of Cortoghiana and Bacu Abis), components within the sizeable compendium of "foundation cities" located throughout the Sulcis region - true "landscapes of innovation"
- ▶ the coalfield's mining network, starting with the "Great Serbariu Mine" - with its deep pits and steel shafts that became regional landmarks - and continuing with the modeling of the land by massive landfills that contributed to creating "new topographies" within the coal landscape
- ▶ the infrastructure system, with a network of ports functional to mining activities (S. Antioco and Porto Vesme); other infrastructure such as the power plants at S. Caterina, Serbariu and Portoscuso; new railway lines and roads; all of which imposed upon an agricultural-pastoral landscape that in just a few years time was transformed into a landscape machine for the extraction of coal.

Project Carbonia seeks to reinterpret Carbonia's original relationship with its landscape, redefining the community's prospects based on the landscape as "a resource favourable to economic activity" as it was when it was originally planned in order to contribute to "promoting quality of life and well-being"

The industrial crisis and the project for a new mining landscape

Carbonia, emblem of Sardinia's industrial modernization in the 1930s, passed from enjoying such rapid growth as to become the region's third largest city during the first 20 years of its life to a crisis that undermined not only the city's original identity but also the social and cultural ties that once held the community together. It was, and is, an epochal crisis, which progressively reduced the coal district to a context of mining archeology.

The complex project for the renewal of these "landscapes of modernity" could only begin with this provincial capital of 30,000 inhabitants, a leader in a territory deeply permeated by a strong "culture of innovation." Since 2001, the municipality has promoted a complex program of material actions, management tools and economic and educational promotional activity seeking to create a virtuous merger of the area's historical and industrial vocation with a more contemporary model of sustainable territorial development (founded on landscape, environment, clean energy, ancient and industrial archeology).



Carbonia Landscape Machine is based on four highly integrated strategies:

RECOGNITION OF A CULTURAL LANDSCAPE

planning framework for the regeneration of the city's Modernist urban and mining heritage through sustainable co-planning

QUALITY URBAN LANDSCAPE

regenerating the city's historic mining and urban landscape

CITY OF SUSTAINABILITY RESEARCH AND DEVELOPMENT

repositioning Carbonia within the world's burgeoning green economy

CULTURAL CENTER/LIVING LANDSCAPE MUSEUM/PUBLIC ARTS PROGRAM

transforming the city's industrial heritage and urban identity into a contemporary cultural center with a variegated offer of museum-related cultural activities

These strategies, described in the Application Form and represented in poster n3, have been highly effective in rehabilitating, recovering and renewing Carbonia's "mining landscape." In fact, the actions undertaken within the framework of Project Carbonia have focused on Carbonia's principal public assets:

- ▶ the great Serbariu Mine and its landscape as an industrial machine
- ▶ the garden-city company town of Carbonia and its satellite villages with their public spaces and civic monuments.



The reinvention of the urban landscape: urban monuments, public space, the garden city's residential fabric

In the 1930s urban-mining landscape, Carbonia was a garden-city that incorporated nature within the city, countering the horrifying “unnaturalness” of the mines in a sort of social and human reparation. Carbonia was also the physical image of the modernization of the traditional Mediterranean landscape of isolated farms in their enclosures (called medaus) - the typical widespread settlement form in the vast Sulcis terrain vagues - thus introducing a variation on central European theme of the isolated cottage

As late as 2000, the ideological rejection of a totalitarian past mixed with a difficult symbolic and material legacy. What set in was a kind of micro-degradation with widespread substitutions and superfluous additions, which, however, did not have the power to subvert the garden city's basic structure (1,500 buildings for 8,000 housing units), which had remained perfectly intact. However, these phenomenon did alter its details and corrode its edges, blurring the separation between town and mine, overshadowing the identity and strength of that landscape.

In synthesis, Project Carbonia seeks to rediscover, reveal and renew, in a contemporary light, the deep-rooted relationship between place, population and landscape, considering the invariants of its landscape as non-negotiable values in a complex, but highly integrated, landscape, promoting, above all, an important project based on research carried out by the University of Cagliari (with graduate theses, PhD dissertations, conferences and scientific publications) and by national and international research centers which cooperated actively in the activity (Do.co.mo.mo Italy, University of Rome). The results of this research form the background for the Map of the Landscape and Urban Quality areas, the key strategic document in the new City Plan.

Based on the Map's contents, a restoration and urban renewal program for the city's main public space was initiated in 2002. Piazza Roma is the symbol and driving force of Carbonia's landscape recovery program. Reduced, over the years, to a formless space, the square was given pedestrian-only access and returned to the city in a bold project that restored its role as urban center to become the symbol of renewed social cohesion. The buildings that surround the square, the Littoria Tower and "after work center", the church and town hall, cinema and theater were restored in the spirit of their original designs providing forms of "sustainable reuse" necessitated by new activities and urban functions. Above all, the reinvention of public space was widespread and landscape-oriented. Project Carbonia renovated and regenerated urban and regional itineraries, especially the main squares of the miners' villages; in addition to Piazza Roma, the Piazza Venezia and Piazza S. Barbara in the satellite nuclei of Cortoghiana and Bacu Abis were restored.

Carbonia is redesigning its landscape in line with the European Convention in such a way as to integrate plan strategies and operational guidelines for their practical implementation. In 2005, the city won significant EU funding for the Quality Project "Carbonia: 20th Century City" which, in fact, integrated the recovery of the identity of the foundation city and its mining landscape with the redevelopment of the deteriorated periphery. In this way, historic "beautiful scenery" was not isolated and "showcased" but acted as a catalyst to create new and widespread "landscape quality."

The new design of the area to the west of Carbonia was the testing ground for this methodology. The basic design element was the planning of a green belt contributing to best circumscribe the garden city. The belt also contains a fascia of infrastructure elements, consistent with the structure of the original plan such as the large western boulevard upon which hinges the new intermodal station and its new square (for which the municipal design team was assisted by the Department of Architecture, with the important contribution of architect Luigi Snozzi) to redevelop the existing degraded periphery with a strong and contemporary sign inspired by 20th century metaphysical Carbonia. Presiding over these infrastructure elements are the great "civic monuments" of the rationalist city such as the two Worker Hotels rehabilitated and restored to offer the city two "cornerstones of memory" to house new social services.



The recovery of the mining landscape: adaptive reuse of the Great Serbariu Mine for culture, education and research

The Recovery Program began with this mine in 2001 and, in less than six years, completed the reconfiguration of a “new landscape of culture and sustainability.”

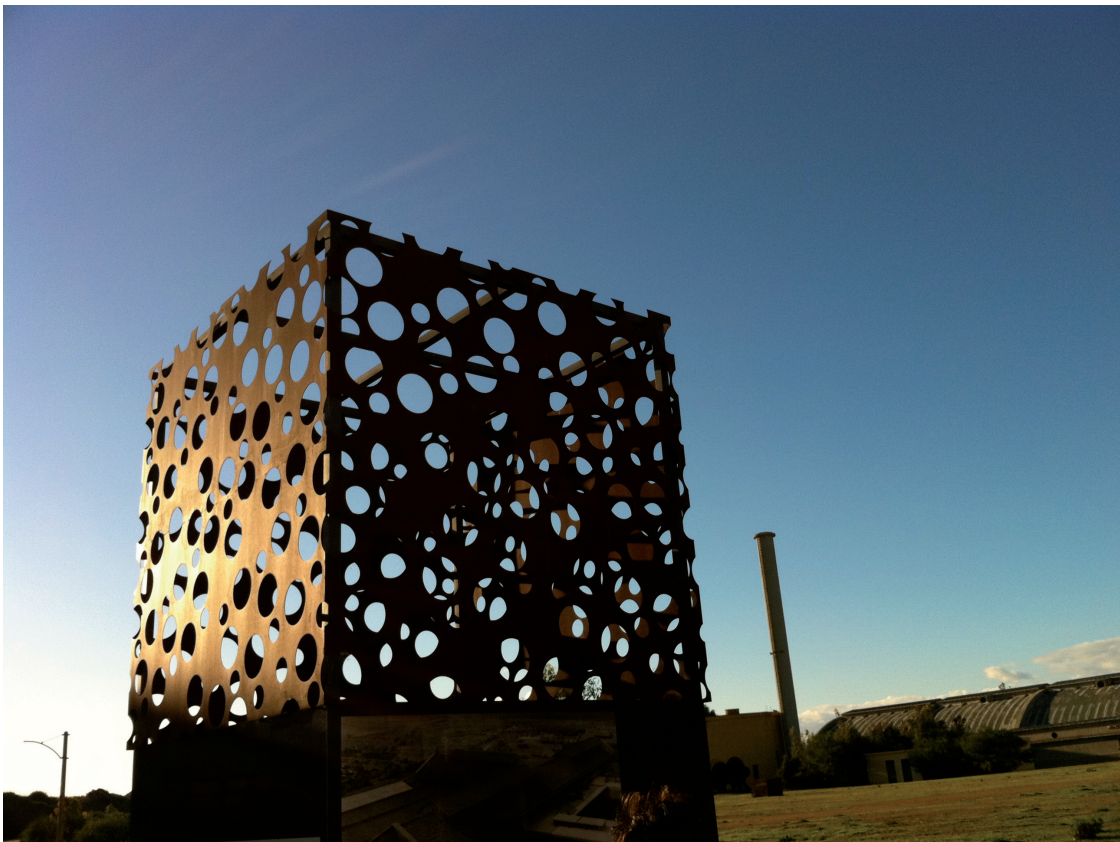
The vast mining plain, surrounded by hills formed by mining waste and dominated by the steel mine shafts and power station with its metaphysical cooling tower, is home to two major systems located in recovered mining buildings:

- ▶ The first system regards identity and culture, focusing on the immense and luminous Lampisteria (hall of lamps) - the physical location of the exchange between the city where the miners lived and the shafts into which they plunged where they received their mining lamps (thus giving its name to the building). The lampisteria was transformed into the CICC (Center for Italian Culture of Coal), a scientific and anthropological museum, home to mining culture. The mine system was reconstructed and rendered accessible with the tunnels and pits with their elevators which, along the itinerary, manifests the mine culture in its full power. In adjacent pavilions are the Provincial Library, the Historic Archives of the Mine and the City and a new convention hall, while the PAS Museum of the Sulcis Paleoenvironment was located in the former machine shops.
- ▶ A second system regards sustainability research and development for innovation and energy efficiency upon which the city is basing new economic prospects. It is interconnected with the first action as the activity makes use the adjoining pavilions or is even integrated with the cultural functions. This second system refers to “green” and clean use of coal, alternative energy sources such as photovoltaics, structures for applied research on energy efficiency and advanced diagnostics of buildings. The Sotacarbo Research Center and the Laboratory for materials and energy efficiency of Sardinia Research-University of Cagliari now occupy the space, forming the nucleus of a new “cluster for clean energy and sustainability” deriving from the coal industry as an alternative to the model of social/economic and landscape/territorial development for the third millennium. These centers now occupy the machine shops and forge pavilions with new areas covered by photovoltaic panels for the new landscapes of sustainability, substituting and integrating the hills formed by mining waste.

Living landscape museum: itineraries through the landscapes of the rationalist city and its mining areas

Carbonia is a city-museum, not only in the sense of preserving its memory, but also in a contemporary and active sense as a Cultural Laboratory of Modernity.

As protagonist of a great landscape project, the city does not enclose the interpretation of its historic memory only within museum walls. CIAM, the Open-Air museum of Modernist itineraries, part of the Carbonia's Eco-museum, is the most emblematic manifestation of this active vision of culture, which seeks to involve the entirety of inhabited space in order to convey the depth and quality of its historic and cultural landscape through a sustainable, "zero impact" exhibit. The historic research condensed into a guide and an exhibit, communicated through agile information, materializes in itineraries with stops highlighted by Infoterminals along the route between the mine and the town providing a new cultural attraction for tourists, school groups and residents alike.





Carbonia and its foundation

The history of Carbonia is unique and particularly significant within the panorama of 20th century urban planning and architecture. Built in less than one year between 1937 and 1938, Carbonia was a company town planned by the State based on the interdependent relationship between mining, infrastructure and settlement. The authors of the plan, major planners of the day, Gustavo Pulitzer-Finali, Cesare Valle, Ignazio Guidi and Eugenio Montuori, brought different and complementary professional training and pasts to the project. The diversity of their contributions, however, merged into an important synthesis of early 20th century Italian architecture and planning. From this point of view, the city is an expression of the complex oscillations in taste of the Fascist regime between Fascist style, monumental rhetoric and desire for modernity.

Carbonia was originally modeled on the garden city type but was also based on the organic morphology of ancient cities in an attempt to promote dialogue between urban fabric and monument, between major and minor architecture. It was a structured 20th landscape, within a broader and more complex landscape/territorial system, with its minor villages (Carbonia, Bacu Abis, Cortoghiana, Portoscuso), infrastructure and places of production.

In 1937, with the discovery of large Serbariu coal deposits, the design of the new city began to take shape. Inaugurated in 1938, according to a first phase project which provided for a population of 12,000, the city was designed for rapid growth to a population of 50,000, a number the city reached during the war.

The 1937 master plan is marked by the deployment of two-storey, four-family dwellings, a building type that developed according to seven different architectural solutions, representing the self-sufficient alternative to the more traditional English cottage type and a symbolic expression of the rural and preindustrial dwelling. Alongside the extensive urban fabric were some large public buildings such as the Hotel for Bachelor Workers.

The construction of the extensive city clashed, however, with the ever increasing need for new housing. Between 1938 and 1940, the city grew dense in the open spaces of the original gardens expanding around Mount Rosmarino with standardized four-family homes and new multi-family housing developments that introduced what were at the time novel forms of intensive urban development. 1940 witnessed the expansion of the mining village of Bacu Abis, the construction of the new workers' village of Cortoghiana designed by Saverio Muratori and the Portoscuso Plan by Giuseppe Pagano, this last one an exemplary project of the new Italian urbanism at the time.

Carbonia and its villages thus take on the form of a territorial project, a landscape/machine that after the war, despite population growth and the prospects for the development of mining activities, culminated with the closure of Sardinia's coal district. The industrial crisis in Europe which led to the decommissioning of the widespread stock of factories and the emptying of the large containers that housed them also concerned the Sardinian mining industry. In the early 1970s, after a period of bare and mute survival, the island's coal mining history virtually came to an end, its heritage ignored until the birth of the new millennium.



The historic coal mining landscape

During the 1960s, the great Serbariu Mine, recognized in 1937 as the largest coalfield in Italy, went into crisis and closed. However, those 25 years were enough to significantly reshape the area's geography: new coal waste heaps, roads and railways converging on the great mine and leaving it again for cities and ports.

The 1960s crisis left behind an impressive industrial landscape, decommissioned and stripped bare, subsequently subjected to improper and deteriorating re-use. During the years after its closure, the abandoned mine site underwent a rapid process of degradation. Some buildings were illegally occupied by the homeless or transformed into temporary warehouses. Others, especially the large ones, emptied of the machinery they housed, were stripped of building elements, such as windows, roofing, cladding, mechanical systems, and transformed into illegal dumps or places for illegal activities. The vast exterior spaces, where uses and flows (of people, vehicles, Decauville railways) had followed the functional logic typical of a specialized industrial structure, were subsequently transformed with the infestation of spontaneous vegetation and by the cutting of new trails/paths created randomly by unregulated activity.

The mine originally covered an area of 30 hectares on a flat terrain upon which 25 buildings were constructed. The entire complex was dominated by magnificent steel shafts, visible symbols of the mine and its activity. Some of the original buildings have disappeared, such as the mammoth washery dominating the old photographs of the site, while others, such as the Lampisteria, the Machine Shops/Forge complex and the Power Station, constituted the main structures involved in the recovery project.