

PER ■ UNA ■ ARCHITETTURA ■ DELLA ■ RESPONSABILITÀ | FOR ■ AN ■ ARCHITECTURE ■ OF ■ RESPONSIBILITY



Con il numero 37 la rivista “Abitare la Terra”, a quattordici anni dalla sua nascita, cambia il suo formato, ma non il suo obiettivo: la tutela dell’ambiente e la promozione di una architettura, che abbandonata la tendenza all’esaltazione individualistica delle grandi personalità creative, che ha condizionato la produzione architettonica degli ultimi decenni, torni ad essere una disciplina rigorosa, che ha per obiettivo il miglioramento della vita di tutti gli esseri viventi e per questo non rinuncia a utilizzare i frutti di una esperienza secolare che coinvolge le diverse civiltà umane. Il termine Geo-architettura, che si legge nella testata, è stato coniato da Le Corbusier, nel 1942 per la sua riflessione su *Les trois établissements humains* e allude a una architettura che abbracci tutto ciò che l’uomo ha costruito sulla superficie terrestre. Per noi oggi Geo-architettura vuol dire una architettura umile, che, sia arte senza per questo ammantarsi della superbia del nuovo fine a sé stesso, che si faccia carico della necessità di proteggere l’ambiente, di ridurre i processi di inquinamento, di combattere la disuguaglianza tra i popoli, di ridurre i processi che attraverso i cambiamenti climatici rischiano di distruggere gli equilibri del pianeta e il suo paesaggio. Per fondare la Geo-architettura è necessario a nostro parere: imparare dalla natura e dalla storia, rispettare l’identità dei luoghi, recuperare la “coralità” degli spazi urbani, abbattere gli sprechi di risorse non rinnovabili e di tempo umano, contrapporre a uno sviluppo senza limiti, che presuppone una impossibile “crescita infinita”, una crescita spirituale di cui si avvertono i primi sintomi anche nella architettura.

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Fourteen years after *Abitare la Terra* was published for the first time we have decided to change its format, but not its goal: to protect the environment and promote architecture. No longer an architecture that has abandoned its tendency to praise and exalt larger-than-life creative individuals and the architectural works that have influenced recent decades, but an architecture that is once again a meticulous discipline focusing on improving the lives of all living creatures; an architecture that exploits the ‘fruits’ of its centuries-old history and many different civilisations. The term Geo-architecture at the top of the front cover of this issue number was coined by Le Corbusier in 1942 when he wrote *Les trios établissements humains*; the term refers to an architecture that embraces everything man has built on the earth’s surface. For us, Geo-architecture means humble architecture, an architecture that is art without necessarily the arrogance of being an end unto itself; an architecture that assumes the responsibility of protecting the environment, reducing pollution, fighting inequality between peoples, reducing the processes of climate change that may destroy the balance that exists here on earth and its landscapes. We believe that to create Geo-architecture we need to: learn from nature and history; respect the identity of places; reinstate the “choral nature” of urban spaces; drastically reduce the way we waste non-renewable resources and human time; and replace unlimited growth (involving impossible “endless growth”) with spiritual growth, the seeds of which are now beginning to grow in architecture.

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IN COPERTINA / FRONT COVER  
Monumental Architectural Complex of the Incurables in Naples, the interior of Pharmacy.  
Photo by Carmine Gambardella





# EXPOSOMA and BIODESIGN

## From the big scale of Landscape to the detail of Architecture

CARMINE GAMBARDELLA

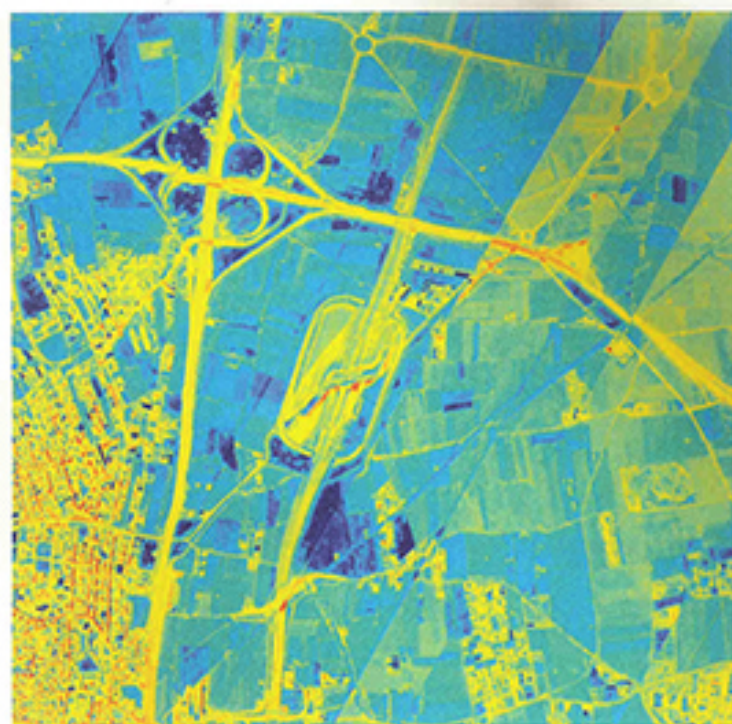
The XVII Forum "World Heritage and Heritage" addresses the issue of the handed down in the sense of transmission over time of generation, at the state of knowledge, the material and immaterial heritage that comes from the past. A generational commitment to operate, in the cyclical temporal process, in order to preserve and protect the cultural heritage and habitat for humanity; a duty of the present generations to deliver to the future generations the legacy of the past at least in the same conditions in which it is received, but above all scientifically orienting protection

activities to regenerate the contaminated landscape and the architectural and historical-artistic heritage. A commitment that takes on an even more meaningful significance in a historical moment that is crossed by destructive and iconoclastic wars and by great migration phenomena involving abandonment of territories undermining the identities of places, traditions, material and immaterial culture, which characterize the Cultural Landscapes. A re-appropriation by humanity of the value of a biological continuity that is traceable in its genetic complexity as a custodian and bearer of the memory of the

past and, at the same time, belonging to those who live in the future by living the present. Moreover, "to the state of knowledge" should not be interpreted as a limitation but as an exhortation not to live on the position income and above all to remind men that they were not "made to live like brutes but to follow virtues and knowledge". Knowledge therefore contains an evolutionary value in the history of progress. Where knowledge is substituted by acts or policies conducted by brutal and unreasonable actions against Humanity and its material and intangible heritage, a fracture on historical continuity is created,

which produces a negative value due to the great expenditure of economic resources and loss of human values. Therefore, in the awareness that the value produced by the past generations, which have given us and above all entrusted as heritage to be transmitted to the future is not commensurable to the value of time to re-establish and restore continuity to the regenerative space of the common good, it is impossible to activate more and more moments of reflection and I would say to monitor the behavior of supranational cultural policies. This in the spirit of inducing to avoid the disastrous temporal intervals





that involve serious losses of the human heritage, which break the glue that binds the generations. Architecture, Cities, Infrastructures and Landscape not only represent the form of time but all the disciplines that have contributed to and contribute to their characterization. The form of time is the body of a cultural program of society and the modification project makes use of the knowledge at the date. Economics, mathematics, physics, biology in one the sciences are always traceable in the construction of man's works, from the simple artifact to monumental architectures, to cities, to large infrastructures. In fact, places exist because they are perceived by man, but places are also contaminated and

polluted by men who paradoxically produce very serious biological damage to themselves and for future generations. In this essay two examples are presented, from the apparently disjointed areas but to be taken as a paradigm based on the same research methodology. The different scales at the base of the investigations must not confuse the reader, as to better communicate what I intend to demonstrate, I took as an example a part of the polluted landscape of the Campania Region, the so-called "Land of fires" and a Monumental Architectural Complex, the Hospital of Santa Maria del Popolo of the Incurables with hosts the Pharmacy of the Incurables.

This has recently been evacuated and closed to the public as insane construction works, including illegal construction, which have compromised the static of the buildings and some historical artistic works with a very valuable decorative register.

The common denominator of both examples is founded on the integral of disciplinary competences implemented and supported by technological prostheses of remarkable scientific innovation for the detection, monitoring and management of large volumes of data.

The two examples are being researched by the Benecon Competence Center, which I have the honor to chair and which hosts the UNESCO Chair on Landscape, Cultural Heritage and Territorial Governance. Benecon is a University Consortium of five Campanian Universities and by Statute it can commit all the disciplinary skills and laboratories of the associated Universities. Also, it belongs technologies, terrestrial, airborne and marine sensors that characterize it as a unique experience in Europe.

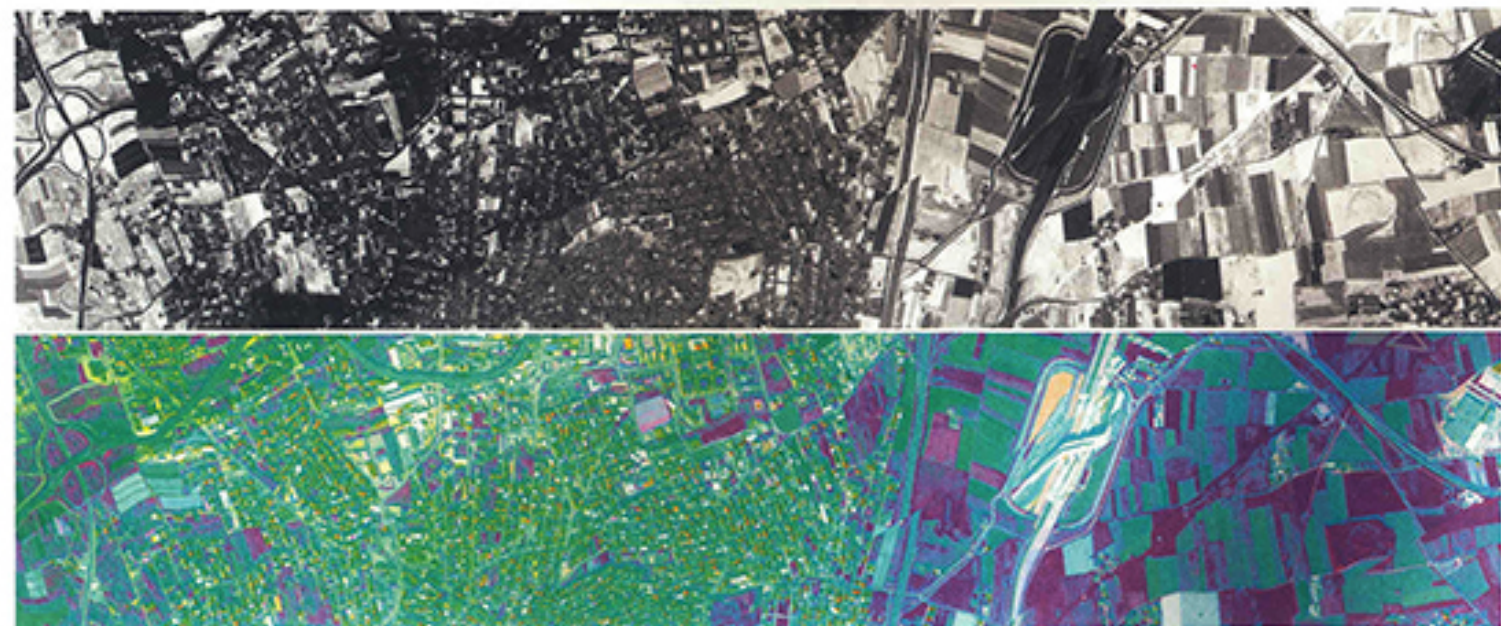
The first is characterized as EXPOSOMA and polifocality in cancer prevention in the 'Land of fires'. With this survey and investigation activity, the link between the action of research and the fight against environmental pollution is linked to the need to recover the identity matrices of the places. Once these were characterized

by flourishing agricultural productions and traditions, expression of a local and sustainable economy that for centuries defined the landscape and structured the architecture of city centers, before uncontrolled urban expansion and a lack of territorial management spoiled the value of places.

The detection by airborne sensors, sensors positioned on the ground and the sampling of multiple environmental geochemical matrices subject to specific laboratory investigations were crossed by multiple disciplinary skills to guide the landscape regeneration project in relation to the quality of agricultural products and, therefore, to the quality of life.

The second, the sixteenth-century Monumental Complex of the Hospital of Santa Maria del Popolo degli Incurabili, on the Caponapoli Hill in the Historical Centre, moreover built on pre-existing archaeological foundations of the city, as mentioned above, hosts wooden stalls and vases of the eighteenth-century of great historical and artistic value.

It is no coincidence that this example is also a place created for human care; here the great schools of Neapolitan medicine and the most important realization of pharmacy-therapeutic science were born. Moreover, due to the size of the complex, for its genius loci it assumes a great environmental landscape value.







The integrated use of diversified disciplinary competences and the technologies placed in field for the investigation on the landscape, on the built and on the polluted products of 'Land of fires' have concretized a unique methodology of applied research whose quantifiable results have shown the goodness of the scientific address adopted.

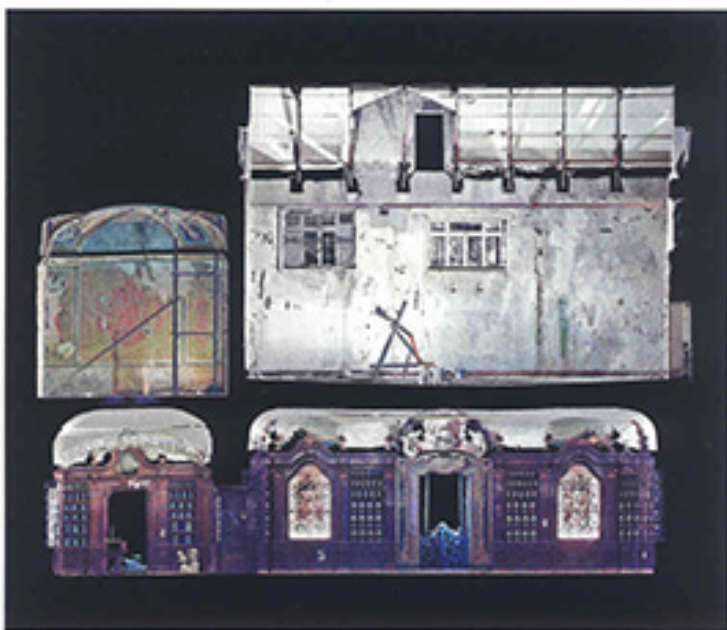
At the same time, a guarantee model was put in place, represented by the creation of seventeen editions of the International Forum "Le Vie dei Mercanti", which has created an interdisciplinary community of about 6000 scholars and researchers, coming from over 50 Countries of the World. These have presented realized projects, theoretical research, good practices, technological innovations, which are recognized in the principles and actions to be carried out so that the Planet with its species can always adapt itself to the needs of humanity in a sustainable reciprocal relationship for the salvation of the same Planet. And if Beauty will save the world, the principles and actions shared in these sixteen previous years will find with the seventeenth Forum a moment of evaluation of the state of art so that they can increasingly reach, interest and belong to as many people as possible such as Governments, Institutions, Universities, and Enterprises. This is to create and disseminate a new Humanism that acts as a generational glue through a review of the inheritance concept, or of an

ongoing heritage formed by resources intended as lot, which, declined as an income statement, create solidarity, peace, trust, work with art and quality of life.

For these reasons and for the history of the Forum, I am sure that the scientific community will establish a debate in Naples and Capri on 6th, 7th and 8th of June which will bring further richness to the discussion among researchers who have faced the protection and safeguard of heritage handed down to us and the researchers who through their works will be the bearers of the future legacy.

In the 'Quaderno' - Notebook of 'Abitare la Terra/Dwelling the Hearth' dedicated to the XVII Forum on the theme of World Heritage and Legacy, some essays by scholars participating in the Forum are published, which will bring further wealth to the international debate among researchers who have faced the protection and preservation of the legacy handed down to us and the researchers who through their works will be the bearers of the legacy for the future. ■

1. Hyperspectral image on the so-called "Land of fires" in Campania Region (on the left); the image was represented in "RedVegetation" sampled in shades of red in relation to the presence of vegetation, for the representation of vegetated areas (shades of red); this representation in false color associates to each red, green and blue channel of the monitor respectively the channels at 789, 675 and 542 nm; this representation enhances the greater or lesser density of the vegetation with shades of red; / North-West longitudinal section of the Pharmacy rooms on the ground floor and of the Rooms above (on the right)  
2. TABI images. The configuration of the Ires TABI-320 thermal sensor, which has only one acquisition band, was aimed at







maximizing both the radiometric and the spatial resolution of the acquired pixels. With different colors from red to blue we can consider different temperature of the scanned materials during airborne remote sensing activity.

3. Comparison between different type of hyperspectral index on the so-called "Land of fires" in Campania Region;

MSAVI images (Modified Soil Adjusted Vegetation Index), sampled with increasing gradations from white to black in relation to the greater or lesser chlorophyll activity of the vegetation, for the representation of plant areas with greater concentration of chlorophyll activity; this index is less sensitive than the NDVI to soil variability; The MSAVI

is related to the density of the vegetation cover which, compared to other spectral indices, has the advantage of not being influenced by the underlying soil variability.

PC images (Principal Components), sampled according to a statistical processing of acquired electromagnetic bands that maximizes the variance of

spectral data and filters electromagnetic "noise".

4. Monumental Architectural Complex of the Incurables in Naples, longitudinal view of the interior of Pharmacy.

5. Monumental Architectural Complex of the Incurables in Naples, drawings on longitudinal view of the interior of Pharmacy.







6. Monumental Architectural Complex of the Incurables, longitudinal section of the Pharmacy rooms on the ground floor and of the Governor's room above.

7. Monumental Architectural Complex of the Incurables in Naples, longitudinal view of the entrance open gallery to the Pharmacy.

8. Monumental Architectural Complex of the Incurables in Naples, view from the top of the entrance to the Pharmacy.

9. Monumental Architectural Complex of the Incurables in Naples, point clouds of the interior of the Pharmacy.

10. Monumental Architectural Complex of the Incurables in Naples, point clouds of the interior of *Spezieria*.

11. Monumental Architectural Complex of the Incurables in Naples, drawings on longitudinal view of the interior of *Spezieria*.

12. Monumental Architectural Complex of the Incurables in Naples, longitudinal view of the interior of *Spezieria*.

