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Generative Design Lab

Significant development of research inquire in Generative Design

Our field of research covers two aspects:

Generative design approach works in imitation of Nature, performing ideas as codes, able to generate endless variations. The aim is the process and not only the result, following the tradition of Renaissance connected to actual not linear systems, fractals etc. GD performs the possibility to design AI and AL software able to work in the field of Architecture and Industrial Design using transformations rules written as algorithms. Developing a design path, variations define a particular species, that is possible to manage in an adapted evolution for subsequent requests. The leader of the GDLab, Prof. Celestino Soddu, is recognized over the world as the father of Generative Design. Using Argenia, his advanced software, the GDLab develops projects and exchanges with other international research units for more complex experimental results.

A important topic of Generative Design is in performing bridges between different research sectors, for this reason we called Generative Art our research developed in an international conferences (this year is holding the 10th edition), fitting the concept of J.Mignot. "*Art sine science nihil est*", that is our motto and Luca Pacioli is the logo of GDLab.

Town Identity Design: This approach fits the needs of managing the increasing complexity of actual town environments, specially in the fast growing areas, supporting the increasing identity and peculiar heritage of each city, versus the global homologation toward rediscovering the lost heritage of Cultural Identity. The possibility to identify and design an Artificial DNA of a peculiar City Identity was born in our GDLab This is our main field of advanced research and collaborations particularly with research institutions in Asia.

The philosophy of Generative Design is also a basic studio for developing creative ability in students.

*Leader of GDLab: Prof. **Celestino Soddu**, also Honorary professor at Shanghai University and Xi'an University. Chair of Generative Art International conferences. Co-founder and co-chair **Enrica Colabella**. Many other researchers from all the world collaborated with GDLab.*

Generative Design Lab – Contributions: *JUST PERFORMED GOALS*

Generative Design:

1. This field of research in architectural design was established in 1987 by the leader of the Lab, Prof. Celestino Soddu. His book "Citta' Aleatorie", was the *first generative operative approach developed over the world in the field of architecture.*

2. The GDLab developed this approach in the *industrial production of unique objects* with a generative project able to interact with industrial equipment for the production of unique objects; The GDLab has successfully experimented it in 2001 in the Industrial Centre of Hong Kong Polytechnic University. This approach is now growing its importance and peculiarity fitting the actual need of custom-designed unique objects.

3. Starting from 1998 the GDLab organized the *Generative Art annual international conference* (www.generativeart.com) that increased its role as world's reference meeting on Generative approach. More then 700 research papers were presented, by researchers coming from all the world.

4. GDLab *established other GDLabs* in Kassel, Eindhoven, Shanghai, Tianjin and is establishing others Labs in China and India, following the success of the 10th Asia Link program (2002/2005) founded by EC and coordinated by the GDLab

Town Identity Design.

This field of research was established in 2001 and developed with the organization of:

1. **International exhibition** concerning Cities Identity: Kong Kong museum, Los Angeles Pacific Design Centre, IDB, Cultural Centre of World Bank in Washington D.C., IFC, International Finance Centre Hong Kong, etc. All these exhibitions were focused on cities Identity designing codes of generative scenarios.

2. **International Seminars**: Identity&Design at Italian Embassy in Beijing, De Identitate, at CRUI, Rome.

3. Participation, as invited speaker (the only architect together with all development ministers and majors of main Asian cities), to **Cities Asia Summit**, Singapore 2002, for managing the cities Identities in the fast growing of East cities.

A sequence of **lectures** of the participants of GDLab in all the world in the last years. *HongKong, Beijing, ChongQing, Shanghai, Macao, LosAngeles, SanFrancisco, SantaFe, VirginiaTech, Chicago, NewYork, Boston, Kassel, Gmuend, Copenhagen, Roma, Ivrea, WashingtonDC, Alexandria, Muncie, Vienna, Urbino, Firenze, Napoli, Singapore, Nagoya, Istanbul, San Paolo, PortoAlegre, Madrid, Delft, Eindhoven, Xi'an, Changsha, Tianjin, Colorado Univ. Boulder, Daugavpils.*

Teaching activities linked to GDLab are in www.generativism.com, with 110 master thesis and thousands of homepages of learning works of students (together with www.generativeart.com is visited by 3000 people each day)

Generative Design Lab - *Future goals*

Consolidating the **existing Network** based on our annual GA conference (more then 1500 researchers in international universities and cultural entities) and increasing the relationships with all the world regarding advanced approach to design and Cities Identity Design, particularly with Asia, is the main field of the future schedule of GDLab.

Cities Identity Design, the fields of interest managed by GDLab is central in the future development of cities environments and really useful for managing their quality and uniqueness.

A book regarding our **design visions concerning the identity of five cities in the world**, Los Angeles, Hong Kong, Shanghai, Delhi and Milan is under implementation in US edited together with UCLA.

The use of **Argenia advanced software** designed and upgraded by C.Soddu and advanced tools like rapid prototyping, whose equipment is already acquired by the GDLab, will enhance the possibility to communicate visionary development of cities following their cultural multiple identities.

The **websites** of the lab www.generativeart.com and www.generativedesign.com, until now with a consolidated number of visitors, never less then 3000 each day during the last year, together with the GA international conference, gives us the possibility to be present in the upcoming great challenges concerning the upgrading of the **quality of cities and the preservation in progress of their cultural heritage and Identity**.

We established a project with **Argenia Onlus**, a non profit company, for giving the possibility to enhance our work with each person identity, both inside his own historical context either in a place of emigration. The primary exclusive objective of Argenia onlus is the search of the unique and unrepeatable identity of every human being as a dynamic procedure of discovering a collective truth. This important aim is focused in designing educational tools for children with pedagogues and for aged people too for rediscovering the ancient way in staying together for cultural interchanging.