digitalyart

An exhibition honoring Italy,
Host of the 44th Annual Meeting
of the Board of Governors
of the Inter-American Development Bank

Inter-American Development Bank • Cultural Center
February 20 to April 25, 2003

digitalyart

Fabrizio Plessi
at the IDB Atrium
Celestino Soddu and **Adriano Abbado**
at the IDB Cultural Center Gallery

The Inter American Development Bank

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The IDB Cultural Center was created in 1992 by Enrique V. Iglesias, President of the Inter-American Development Bank. The Center has two primary objectives: 1) to contribute to social development by administering a grants program that sponsors and co-finances small-scale cultural projects that will have a positive social impact in the region, and 2) to promote a better image of the IDB member countries, with emphasis on Latin America and the Caribbean, through culture and increased understanding between the region and the rest of the world, particularly the United States.

Cultural programs at headquarters feature new as well as established talent from the region. Recognition granted by Washington, D.C. audiences and press often helps propel the careers of new artists. The Center also sponsors lectures on Latin American and Caribbean history and culture, and supports cultural undertakings in the Washington, D.C. area for the local Latin American and Caribbean communities, such as Spanish-language theater, film festivals, and other events.

The IDB Cultural Center **Exhibitions** and the **Concerts and Lectures Series** stimulate dialogue and a greater knowledge of the culture of the Americas. The **Cultural Development in the Field** funds projects in the fields of youth cultural development, institutional support, restoration and conservation of cultural patrimony, and the preservation of cultural traditions. The **IDB Art Collection**, gathered over several decades, is managed by the Cultural Center and reflects the relevance and importance the Bank has achieved after four decades as the leading financial institution concerned with the development of Latin America and the Caribbean.

digitalyart

Featuring ROMA II, a video installation by Maestro Fabrizio Plessi in the IDB Atrium
and computer-generated works by Celestino Soddu and Adriano Abbado
in the IDB Cultural Center Art Gallery

An exhibition honoring Italy,
Host of the 44th Annual Meeting of the Board of Governors
of the Inter-American Development Bank
Organized by the IDB Cultural Center with the support of
the IDB Information and Communication Technology
for Development Division,
Sustainable Development Department,
and the cooperation of
the Istituto Italiano di Cultura, Washington, D.C.

INTER-AMERICAN DEVELOPMENT BANK • CULTURAL CENTER

FEBRUARY 20 TO APRIL 25, 2003

On the cover: Ambrogio Lorenzetti ***La Pace*** (Peace), detail from the fresco ***Allegoria del Buon Governo*** (Allegory of Good Government) at the Palazzo Pubblico, Siena.

Ambrosio Lorenzetti was born in Siena (d. 1348). He is considered one of the most delicately poetic minds of his generation. He excelled in lyric subjects, and attempted painting in a grand philosophical manner. His most important work is at the Palazzo Pubblico of Siena, the allegory of ***Good and Evil Government*** (1338-40), which was perhaps the first example of lay painting and art used to represent ideas and life following Aristotelian principles.

Art, Technology and Communication

The Inter-American Development Bank presents this exhibition in honor of Italy, host of the 44th Annual Meeting of the Board of Governors of the Inter-American Development Bank. DIGITALYART celebrates the experience of Italy, its mastery of art, science, and communication.

The Italian Renaissance conceived of society as a work of art, especially the city-state, an embodiment of political as well as aesthetic ideas and values. The ideal representative of the Renaissance, Leonardo da Vinci, was a philosopher, scientist, and artist.

This exhibition features works by Italian artists who use computers and information technology to explore the intersection of art, science, and communication, and to create virtual realities and worlds. The exhibition reveals new frontiers in art, science, communication, and economic and social development.

Throughout history, Italy has retained an extraordinary creativity, an ability to design and produce, to incorporate culture into development. This exhibition is a step toward enhanced understanding between Italy and Latin America, a bridge across the Atlantic.

Mirna Liévano de Marques
External Relations Advisor
Inter-American Development Bank

Technology and Culture
A New Context
for Development

Information and communication technology holds the promise of unprecedented economic and social development. Moreover, this technology is rapidly creating a new context for development. As the world economy is being integrated through information and communication technology, development policies need to be rethought to help developing countries connect to the new information-based world economy. The unfolding technology revolution offers a huge window of opportunity for making a tangible difference in the lives of the vast majority of the world's populations that still remain disconnected and economically disenfranchised.

The potential of information and communication technology to accelerate development, and its empowering characteristics generate a new sense of hope, especially for the poor, women, and youth. But for this hope to be realized, countries will need to adopt bold, innovative, and inclusive policies.

Although there are no ready-made or standard solutions for all country situations, there are some broad parameters for action. Strategies vary depending on specific needs and conditions, but the question is no longer, "either or," but "what and how."

The Inter-American Development Bank (IDB) is working to contribute to a constructive and encouraging climate for sustainable and equitable investment and growth, investing in people and their knowledge and capabilities, and bridging the gap and making the information revolution a more equitable tool.

With the purpose of achieving a common understanding on priorities and tasks, and in a spirit of openness, transparency, and dedication, the IDB supports the Latin American and Caribbean region's policies and initiatives for widespread application of information and communication technology. Not only governments,

but also industry and entrepreneurs are working to implement technology in all possible areas in the shortest possible time.

A proactive policy framework that fosters a fair and open competitive environment and promotes investment is fundamental for a comprehensive development dynamic. Policies must be transparent and inclusive and, above all, must be complemented by strong institutional capacity for follow-through and implementation. All of this has to reflect strong and compelling political resolve. The IDB is committed to supporting the translation of this political will into concrete actions to achieve common development objectives.

E-governance is one of the topics to be discussed during the proceedings of the Annual Meeting of the Boards of Governors of the IDB and IIC in Milan, Italy, in March 2003. The discussion will address the crucial role that e-governance plays in strengthening democratic processes in Latin America and the Caribbean.

In this context, the seminar "E-governance: Toward a New Approach to International Cooperation in the Knowledge Economy" will highlight the increasing number of e-governance efforts in the region, and provide guidelines to assist countries moving toward more comprehensive and systematic national and regional programs in the area of e-governance. The discussion of key issues and progressive efforts involving public sector deployment of information and communication technology will aim to energize the process of institutional transformation.

The focus will be on the executive, legislative, and judicial branches of state/local, national, and regional government to improve public administration, increase efficiency in the provision of public services, and make elected officials more accountable to citizens. To the extent that these efforts are comprehensive and reflect a commitment to openness, transparency, and accountability, a significant contribution can be made to increasing the level of trust between citizens and their public sector representatives.

In conjunction with the seminar, and in light of the broadening reach and scope of the Bank's activities and concerns in the area of information and communication technology, the IDB's Sustainable Development Division, the IDB's Cultural Center, and the Italian Cultural Institute in Washington, D.C. have made possible a challenging and stimulating digital art exhibition: digitalyart.

Through the Cultural Center, significant artworks from Italian artists active in the contemporary intellectual discourse on technology and culture, and who have contributed to the advancement of art by using technological means, have been commissioned to produce works for display at the IDB in Washington, as the

exhibition is a tribute to Italy and the celebration of the Annual Meeting in Milan.

Through this event, the Bank seeks to raise awareness and create interest in this fascinating realm, and show how technology can affect conceptions of place and location. The exhibition illustrates how the application of technology to culture can contribute to the creation of an environment that is conducive to human development and the eradication of inequalities.

Information and communication technology and culture maintain a close relationship. Not only as a broadcasting medium, but also as a creative tool, the Internet is becoming an invaluable player in the promotion and development of culture across the world. The "democratization" of the Internet will be achieved by offering as many people as possible access to an Internet of public interest, a cultural Internet.

Culture industries and cultural services are central business sectors in developing economies, providing employment for hundreds of thousands of people. Art markets, books, magazines, newspapers, publishing and graphics, television, records, cinema and film animation, the audiovisual sector, multimedia publishing sectors, and video games are all main economic industries. But the stakes are not merely economic; the meeting of information and communication technology and culture should allow everyone free and straightforward access to high-quality educational and cultural initiatives.

The IDB realizes that in this innovative global environment, every country in Latin America faces two major challenges: to promote culture by offering the whole world access to its heritage, and to encourage new ideas by allowing both companies and creative individuals to develop in a favorable environment. In taking up these challenges, several issues and concerns will be pushed forward. Countries will need assistance in developing original cultural and educational content, and in reinforcing the presence of national content and national languages in technology initiatives. The region should introduce programs aimed at creating a "cultural Internet" listing artistic, cultural, and scientific sites, and providing access to fields as varied as architecture, cinema, photography, video art, computer graphics, and digital music. Countries will need help in taking initiatives to advance understanding of digital tools and improve the dissemination of knowledge; strengthening cooperation among cultural institutions, public research bodies, and companies; and supporting ministries of culture and communication. The effort will also require creating digital libraries as an asset favoring the development of countries' languages on the Internet, and establishing multimedia art centers that encourage experimentation with

information and communication technology tools in creative work and artistic expressions.

These are only a few ideas and suggestions, but the challenge is to draw on these considerations and to implement a strategy that stimulates direct technology transfer, draws more resources to the region, develops networks and long-term relationships, disseminates information on best practices, identifies financial assistance vehicles, and provides training and human expertise.

The information and communication technology revolution provides the opportunity to infuse a renewed sense of solidarity in international cooperation. It is a wave of extraordinary dynamism with great potential for fostering opportunities that will overcome long-standing deficiencies and obstacles in the region. In this wave of new events that are taking place globally, new themes are emerging, the broadest of which concerns the notion of a "digital dialectic," where new digital technologies can be used to represent the human experience in all its aspects.

Far-reaching change will come from the fact that everyone—individuals, organizations, and companies—will be able to become a creator and provider of information. As a consequence, people will identify new goals in development processes, and new technology tools will become commonplace.

The digital revolution is still in its incipient stage. It has yet to be absorbed into the mainstream of the world economy. Looking back, it took more than 40 years for electric power to transform industrial production at the turn of the 20th century. Of course, change will be far more rapid this time around. However, the fact remains that the new information economy is only beginning. The great challenge before the world community is to ensure that rich and poor alike can participate and share its benefits fairly; this is not only an ethical question, but also an economic imperative. The new economy can be productive and sustainable over the long term only if it spreads worldwide and responds to the needs and demands of the people of the world.

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Italian Digital Style

Generating images via computer, working on a product's interactivity to define the relationship between artist and user, and creating new expressive narrative forms are some of the main aspects of the artistic debate and digital research in Italy.

It all started in the 1980s, in research movements as the diffusion of personal computers and graphical workstations first spread out. Actually, in the 1970s, as a result of international interest in Cybernetic, early movements experimenting and theorizing the use of new technologies began to come out. In Italy it began with the Arte Programmata - Programmed Art, based in Milan and Padua; the production of the Video Art Center in Ferrara; and an interesting music experimentation with computers by Tommaso Grossi in Florence. In the 1980s, schools and specific aesthetic movements really spread out, especially in Milan, where Italian digital style was initiated.

In the early 1980s, the scene was dominated by general indifference from the official culture and the art market toward innovative artistic forms based on new technologies, including video art. The circuit of all festivals dealing with the relationship between art and technology represented, for long time, the only way to satisfy the curiosity of an increasing public. Some organizations, such as Palazzo Fortuny in Venice and the Video Art Center in Ferrara, supported this research by organizing exhibitions and promoting international meetings.

The first art groups, with their intuitions, faced the complexity of creative digital production using the only available devices and proposed heterogeneous expressive solutions, building the basis for today's Italian development. It is important, then, to briefly go through the main events in Italian digital history, in order to have a better comprehension of the present scene, and to highlight the distinguishing characteristics of digital production, which is often neglected on the international scene.

Especially in Milan, the 1980s were characterized by a sort of handicraft apprenticeship, the so-called bottega. In addition to the computer artists of the early post-production companies (Digital Video and Futura Film in Milan, Studio Vanzetti in Rome, and S.T.A. in Turin), some spontaneous meeting points arose, where creations with 3-D images were produced not for commercial purposes, but for the sake of research.

The evolution and research of expressiveness, mainly realized through bi-dimensional digital images, were so prosperous in the beginning, that even official art criticism was, maybe just marginally, interested in the phenomenon. The term "computer art" was coined to mean all production related to the digital images circulating in the exhibitions. An important event was the Computer Art exhibition, organized in the early 1980s by Renato Barilli at the Rotonda della Besana in Milan.

In 1986, the Biennale Arti Visive of Venice, quite in advance of the whole art market, opened to new technologies, and presented an exhibition/workshop at the Corderie "Network Planetario." The exhibition was dedicated to the most advanced media and information experiments, with an international show of synthetic images. Among the Italian artists, the outstanding ones participating in the exhibition were Adriano Abbado, Michele Bohm, and Marco Tecce. Public Italian Television (RAI) was interested in digital production, and asked a group of artists—Mario Sasso, Giacomo Verde, and Mario Schifano—to produce a show for television. Some artists began to consider the computer as the new paintbrush, and this idea brought some confusion or a limited vision of the expressive potential of the new instrument.

In order to produce an original work, it was considered enough to put a famous artist in front of a keyboard. This did not give credit to the research behind the change in the artistic modus operandi to an approach to the creation of images mainly based on immateriality. It is no coincidence that the most innovative reflections and intuitions, both in linguistic and theoretical fields, come from authors with a visual and informatics background, acquired through long apprenticeships, such as during the Renaissance.

The first works in computer graphics were slow, brief, and at low resolution. They were poor compared with the magnificence of the 3-D images already realized at that time. Nevertheless, using the personal computer was a suitable and stimulating choice for the pursuit of a new visual language, a "synthetic" one, and for the creation's immediateness and the computer's abstract and artificial nature. In Italy, personal computers represented, from the beginning,

the only media able to start and sustain digital experimentation. Low resolution became, for example, the distinguishing element, opposite to the unceasing reality simulation carried on by industrial production.

Among the first groups theorizing this kind of aesthetic, Giovanotti Mondani Meccanici (Fashionable Mechanical Boys) was founded in February 1984 by Antonio Glessi and Andrea Zingoni, creators of the first computer strip in the comic's history. Giovanotti Mondani Meccanici extended their contribution to video, music, theatre, video installation, and the Internet. They considered the characteristics and color in the computer as the visualization of thinking. Exploring the low-resolution monitor was an adventure. It represented the acquisition of a new visual language, apparently unrefined, but actually rich and eclectic. Low quality became synonymous with the new imagery.

The Crudelity Stoffe, composed by Michele Bohm and Marco Tecce, was also active. It launched the artistic manifesto of Arte Abolizionista (Abolitionist Art) in a 1983 exposition at the Museum of Modern Art in Paris, with a work called "Abol City." To be abolitionist meant using the computer in antithesis with the electronic formalism. Through a particular elaboration of images obtained by a self-produced software able to edit polygons, it was possible to generate a minimal but metaphoric passage from one image to another.

The concept of interactivity is part of the cultural background of other artists, such as Correnti Magnetiche (Magnetic Currents) from Milan, that have worked on computer generated images and interactive art. Interactivity is not a new concept in art. For example, there were artistic vanguards in the 1950s, such as Kinetic Art and Programmed Art in Italy in the 1960s and 1970s.

Although some artists used kinetic art to create an artistic product that would catch people's attention, the Programmed Art group proposed a more direct experience, like the one suggested in Italy by Gruppo N and Gruppo T. As milestones of its work, the Programmed Art group experimented with research involving the public, stillness elimination, work uniqueness, and group work. It tried to represent motion through pattern or texture studies instead of the 3-D virtual images created by the computer. These initiatives still represent an important moment in recent digital art.

During the 1980s, video art started to spread out in Italy. Video installations are one of the most interesting expressions in contemporary art. The public can experience an expressive and narrative form using more than one monitor, simultaneously involving the concepts of space and time. These are interactive works rather than contemplative ones and, although still belonging to

an analogical language, they represent the most interesting experiences in worldwide artistic research.

Fabrizio Plessi is perhaps the most representative artist of this movement. Another group in Italy working in this context is the Studio Azzurro in Milan, which is interested in different expressions, including cinema. Studio Azzurro is creating difficult videos, making contact with the public, and providing special narration through the invisible use of digital technology. The main achievement is the message and the research of new languages.

Correnti Magnetiche arrived on the digital scene in 1985, founded by Mario Canali, Riccardo Sinigaglia, and Adriano Abbado. Correnti Magnetiche began exploring the expressive potential of the computer, rather than that of video. Recently, other artists, informatics experts, and musicians have participated in the movement, caught up in its fluidity and research based on collective work.

Correnti Magnetiche pushed the artistic expression toward new dimensions, mixing languages and technologies, and creating a synthesis among images, forms, colors, and sounds. The group represents a thermometer of technological, linguistic, and expressive evolution. Its works pass, in a special way, through all moments of this 20-year journey of virtual language: from processing animated and static synthetic images, to processing abstract forms, to searching for an interaction between man and machine.

A more evolved and original audiovisual language has developed, but it is still an independent path in an era of experimentation, moving toward narrative and aesthetic forms and new frontiers in technology. At the beginning of the 1990s, the Virtual Reality wave arrived in Italy (Mondi Virtuali, Palazzo Fortuny, Venice, 1990). And once again, Correnti Magnetiche was the first to accept the fascinating commercial and technological challenge.

Since then, the technological experience of expression and narration has focused on relationships with the public, through navigation and sensorial immersion devices. Many artists participate in interactive and virtual installations. Images generated through manipulating mathematical languages and based on interactivity among artist, user, and the work itself represent the starting points of today's cultural debate.

Virtual reality installations highlighted the need for a leading role in communication processes, demonstrating the principles of dematerialization and analysis of physical reality. In this sense, man as a subject is at the center of the

dialogue, and his body is only the terminal of a mutation whose steps are still obscure. Thus, physical involvement becomes evidence of existence, an attempt to affirm and rediscover happiness and sensibility.

A similar message comes through the research of those artists who consider virtual space as a place for emotions and reflection. Research on artificial life provides a starting point for reflection. The generative work by Celestino Soddu, the artificial work by Piero Gilardi, and works by other artists interested in this domain are intelligent and demonstrate autonomous behaviors in the performance process, and, as in Soddu's creations, adaptability and responsibility.

These installations represent both scientific and artistic research, trying to find a common path. Interactivity is in fact the keyword of this union, reached through the processing of genetic algorithms, which represent the matrix of evolution art. The artistic expression is based on images of artificial worlds that the user can manipulate in real time.

The debate in Italy has moved to questions of network diffusion. This area has a long tradition, which began in the 1970s with the Media Art movement. That movement anticipated concepts as networks and shared information with researchers in the field of the aesthetics of telecommunications. Some theorists and artists understood this great potential before the Internet, exploring group work or remote dialogue in real time (for example, Mario Costa and Giuseppe Salerno).

The objective of artwork had been discussed before the diffusion of the new technologies. The key is public participation, realized through a creative process with all subjects involved, and with a continuously changing meaning.

Research on new communication, expression, and narration formulas has yielded various results over time. For example, Ennio Bertrand and Adriano Abbado have had interesting experiences on the Internet. The Internet is not the only frontier for a diffusion of creativity based on knowledge of digital instruments, but it represents a continuous and mutant ground, unsteady and provocative, and a chapter that has yet to be written.

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Presentation

The Cultural Center of the Inter-American Development Bank, in cooperation with the IDB's Information and Communication Technology for Development Division, and the Istituto Italiano di Cultura, of Washington, D.C., has organized DIGITALYART, an exhibition honoring Italy, host of the 44th Annual Meeting of IDB Governors in March 2003.

It has become the Cultural Center's tradition to honor the member country hosting the Annual Meeting with an art exhibition, bringing to Washington some of the most significant cultural expressions from those countries. These exhibitions demonstrate the tangible relationship between culture and development.

Technology summarizes the dynamic of the world in the 21st century. The "revolution" that started at the end of the past century has brought many unresolved issues into the beginning of the new one. Technology has always been entangled in the socio-cultural evolution of civilization, but has never before played such an important role. Technology is assumed to be an expression of advancement; its goals are linked to the improvement of life and the elevation of humankind. However, technology has not always brought people better understanding, refined their nature, or made them wiser. If not these, what other purposes should technology have?

The artists selected for this exhibition represent a variety of current perspectives within the ample framework of artists working with technology in Italy. Maestro Fabrizio Plessi (b. Reggio Emilia, 1940) is one of the most admired and celebrated contemporary Italian artists. For this presentation, the Cultural Center was able to secure his piece ROMA II, a single-channel video and sound installation with a variable number of television monitors and marble, that is currently in the collection of the Solomon R. Guggenheim Foundation, New York (as a promised gift by Marino and Paola Golinelli). The monumental scale reminiscent of the Roman Coliseum, the bold statement resulting from the combination of marble and video, and the sensible use of water imagery speak of the utopian balance between past and present: the reference to history for

people to remain alert to recurrent errors, and the awareness about everything else people must share in life if humanity aspires to a common good. Plessi's position on the international scene is that of an artist deeply committed to develop a contemporary language inspired by the newest and most advanced resources available without renouncing to ancient humanistic concerns.

Architect Celestino Soddu (b. S. Maurizio di Brunate, Como, 1945) has dedicated his entire career to investigating the possibilities of generative design. He creates software that endows the machine with the capacity to produce multiple alternatives to a given program, generating designs that depart from cultural and physical DNA.

Adriano Abbado (b. Milan, 1958), is concerned with the relationship between music and image, the versatility of the computer as a tool, and the idea of facing the infinite. To develop his ideas in the contemporary world, sensibility has to be guided into new dimensions, where both aesthetics and intellectual thought coexist with technology; the resultant imagery cannot be rejected under the traditional arguments or modes of perception.

For the IDB Cultural Center, it has been very rewarding to bring together such an interesting and varied group of efforts and realizations, departing from a common premise. This exhibition marks the first time the work of these three artists has been exhibited in Washington, D.C.

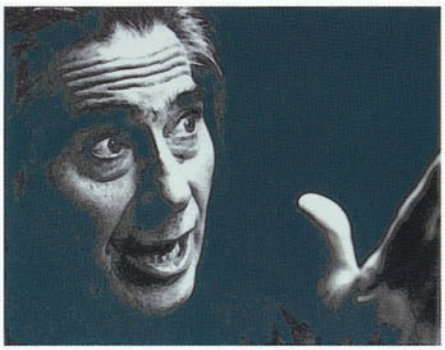
Félix Ángel
Curator, Cultural Center

The Artists and Their Work

FABRIZIO PLESSI

www.plessi.it

Born in Reggio Emilia in 1940, Fabrizio Plessi attended the Liceo Artistico e all'Academia delle Belle Arti in Venice. In 1968 he began using water as the central theme of his installations, films, and performances. In 1970 he began participating in the Venice Biennials, and since 1975 he has presented several works in public spaces in Italy, Monaco, and Brussels. Plessi was invited to show at the Venice Biennial and the Venice Film Festival, and in 1982 he exhibited his entire video work to date at the Pompidou Center in Paris.



In 1985 Plessi exhibited **Video Going** in Milan, the first video environmental installation in Italy. At the 1987 Documenta 8, in Kassel, Germany, he participated with **ROMA II** and at that point his stature as an innovator was recognized at the international level. The same year, he received the international award for electronic images in Bologna. The following year, the Museo de Arte Contemporáneo in Madrid presented a retrospective of his work (14 mayor installations), which was then shown in Zaragoza. For the inauguration of the

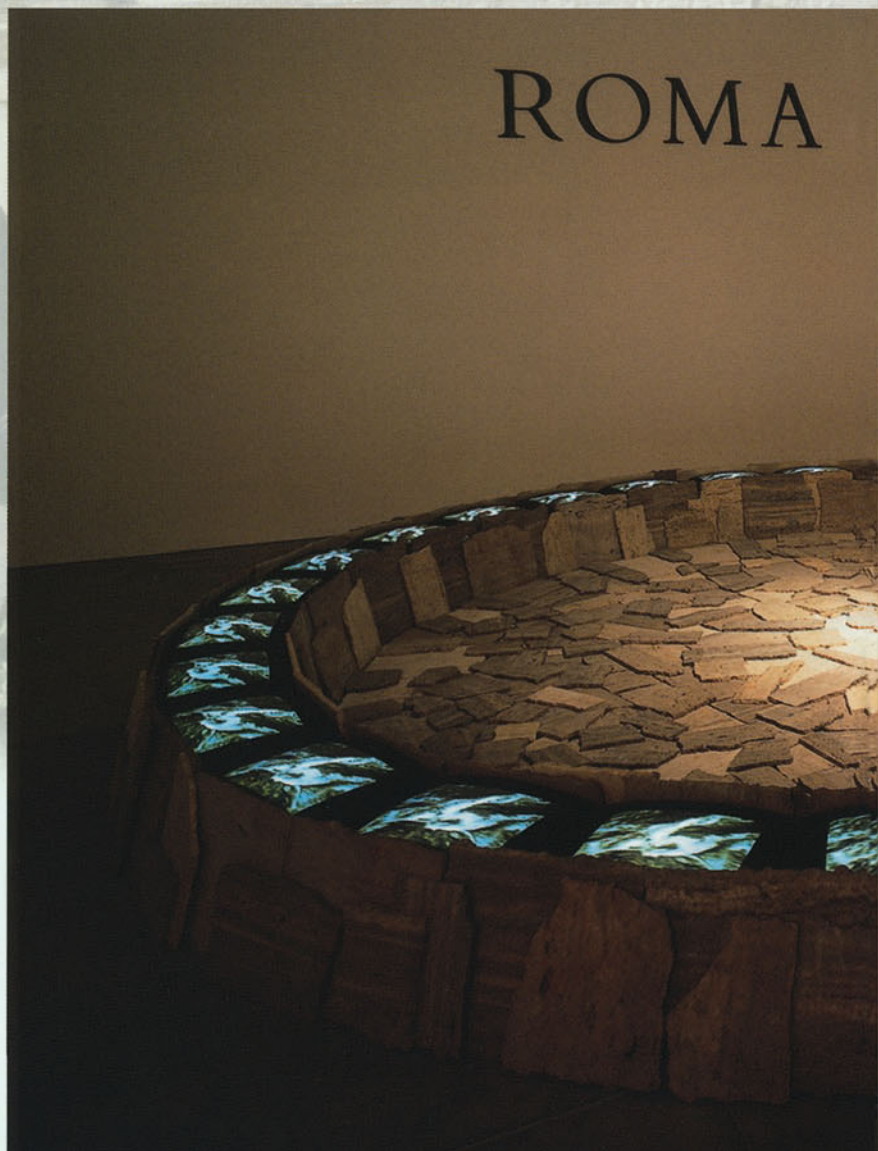
In Plessi's words:

"...when I sketch out a project on a paper napkin in a bar, even if it's the most complex idea, I know that it is overflowing with the skill and energy to transform itself into a gigantic baroque machine—full of technology, movement, sound and images. Sometimes, the drawings wait patiently on the paper napkin in a drawer in my studio; they can wait there for years, along with many others; but eventually they reveal themselves in all their vitality..."

Center Luigi Pecci of Contemporary Art, he installed **ROMA II** and collaborated as stage designer for the TV1 Italian Television (RAI1) program **Immagina**. At the 1989 invitational VideoSkulptur in Cologne, he exhibited **Materia Prima**. That same year, he also exhibited in Denmark and Japan, and was commissioned to create the stage design and costumes for **The Fall of Icarus**, an opera with music by Michael Nyman and choreography by Frederic Flamand, a production of the National Opera of Brussels. The following year, his hometown honored him with an anthological exhibit on the occasion of his 50th birthday.

In 1991 Plessi recreated **ROMA II** for the Museum Moderner Kunst, Stiftung Ludwig in Vienna. Since then he has produced an extraordinary number of video and electronic installations, such as the electronic stage for Luciano Pavarotti's concert at Central Park in 1993, and the opera **Ex Machina** (another collaboration with Flamand, in 1995), which was presented at the Venice Biennial that year in celebration of the Biennal's centennial.

Fabrizio Plessi, Roma II, 1986. Single-channel video and sound installation with
Dimensions variable. The Solomon R. Guggenheim Foundation, New York. Promised



About ROME II

"...Behold! Sanguine ROME emerges from its circularity laden with history, a little Cine Citta, a little De Chirico. Evocative, mysterious, metaphysical shadows, steeped in a cinematographic, dusk-like light..."

The body of work Plessi has created in the past five years includes the impressive electronic cascade for the Sony Building in Berlin (1999) and the 2000 installation **Naufragio della Pittura** (The Sinking of Painting) at the Palazzo d'Accrusio in Bologna. At the World exhibition in Hannover, and commissioned by the Italian government, he created **Mare Verticale** (Vertical Sea), which, at the time, was the largest technologically constructed sculpture. Later, in Passau, he created **Il Fiume della Storia** (The Smoke of History), this time utilizing images of fire.

Plessi has been invited to participate in events around the world, and has been honored with retrospectives. He has represented Italy in a number of international events, such as the Korea Biennial in 2000 and the Cairo Biennial in 2001. One of his latest realizations is the newest installation utilizing movement for Calvin Klein stores in New York, Dallas, and Paris. He lives and works in Venice and Mallorca.

variable number of television monitors, wooden structure, and travertine marble.
gift, Marino and Paola Golinelli, 1999. T245.99

"...A large circle of monitors inside of which flows the electronic water of the Tiber..."

CELESTINO SODDU

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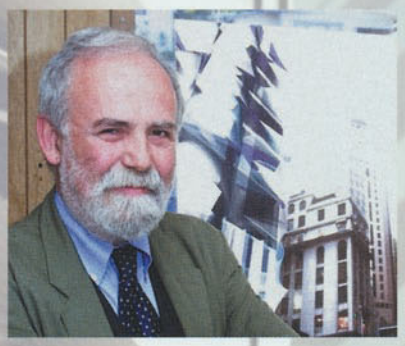
Born in S. Maurizio di Brunate, Como (Italy) in 1945, Soddu graduated as an architect from Rome University "La Sapienza" in 1970. He is a registered architect, active in the fields of architecture, architectural object design, art, and music, with offices in Milan and Rome. He has taught at Italian universities since 1971, and is a tenured Professor of Architectural Design, Environmental Design and Technology at the Politecnico di Milano University, Faculty of Engineering-Architecture.



In 1978 Professor Soddu founded and directed the Audiovisual Center of the University of Reggio Calabria. In 1979 he began research on the dynamic evolution of artificial systems, designing sequences of original software to emulate and control architectural, environmental, and industrial design processes and to improve industrial manufacturing processes. In 1984 and 1985, he gave his first series of lectures on the subject in the United States and Canada, and, as expert of the Italian Foreign Office, in Somalia.

In 1986 he designed the first original software to control the dynamic evolution of the **genius loci** (a mix of cultural and physical identity of a particular environment) of artificial environments, and created generative codes of identity and harmony.

Since 1992 his research has concentrated on the design of species, the morph genetic codes of architecture and artificial industrial objects, and the innovation of manufacturing processes. Each of his architectural projects, realized with generative software, can generate a sequence of architectures/environments characterized by the same **genius loci**. With this tool, it is possible to evaluate the quality of the incoming architectural changes during the increasing complexity of design processes. He has used this generative software in designing town environments while preserving the identity of a particular **genius loci**.

Soddu designs original software applicable to representation. His patent of 360-degree anamorphic technical representation, for instance, is used today in advanced design installations and in the field of 3-D creative interpretation of 2-D

artwork. For industrial design, his devices are useful in managing and controlling the quality and complexity of new industrial products. These devices are able to generate an endless sequence of 3-D models of industrial objects, all unique and unrepeatable, but all belonging to the same design concept and the same functional requests.

In 1997 Soddu founded and, at present, he is the director of the Generative Design Lab at the Department of Architecture and Planning of the Milan Polytechnic University in Milan. In 1998 he began organizing the annual International Conference of Generative Art, which took place in 1999, 2000, and 2001. The conferences have been accompanied by exhibitions of generative design, music, and artwork, along with the participation of researchers from the United Kingdom, Germany, Finland, the United States, Israel, Canada, France, Romania, Belgium, Sweden, The Netherlands, Japan, Hong Kong, New Zeeland, Australia, Spain, Sweden, Brazil, Peru, India, Slovenia, and Italy.

Lorenzetti's "Peace", digitally reinterpreted by Celestino Soddu

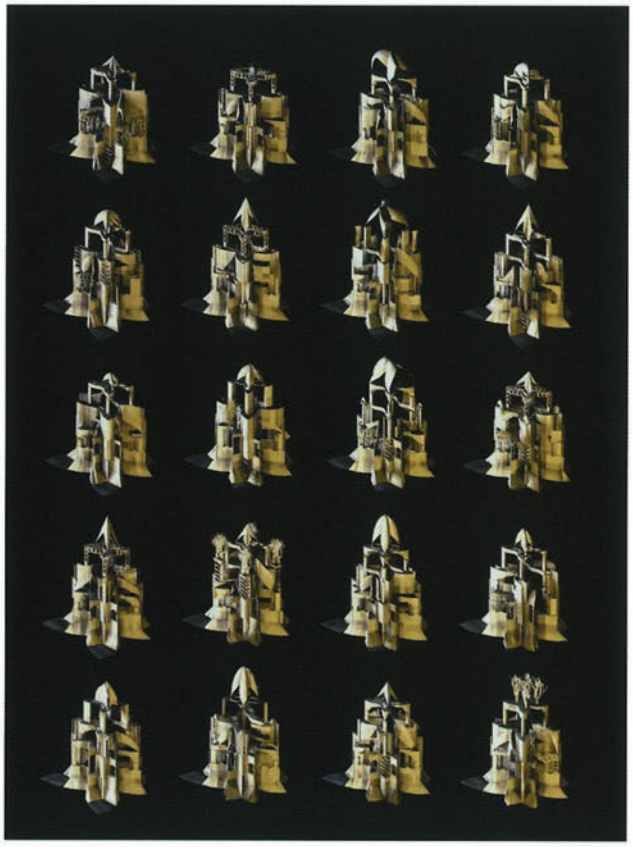
Between 1991 and 2000, Soddu presented his design research at several international conferences and workshops, and lectured extensively around the world. In 2001, as Professorial Research Fellow at Hong Kong Polytechnic University, he improved his generative software to realize, as direct output, an endless sequence of unique and unrepeatable physical objects made by rapid prototyping devices. That was followed by a series of exhibitions, including the 2002 "Generative Art, Visionary Variations by Celestino Soddu," at the Hong Kong Museum, Visual Art Centre and, in May 2002, at MF Gallery, Los Angeles. With funds from the European Community, he has been able to enlarge the activity of his Generative Design Lab with other Generative Design Labs in Europe (Kassel and Eindhoven) and China (Shanghai and Tianjin).

GENERATIVE VISIONARY DESIGN

Celestino Soddu

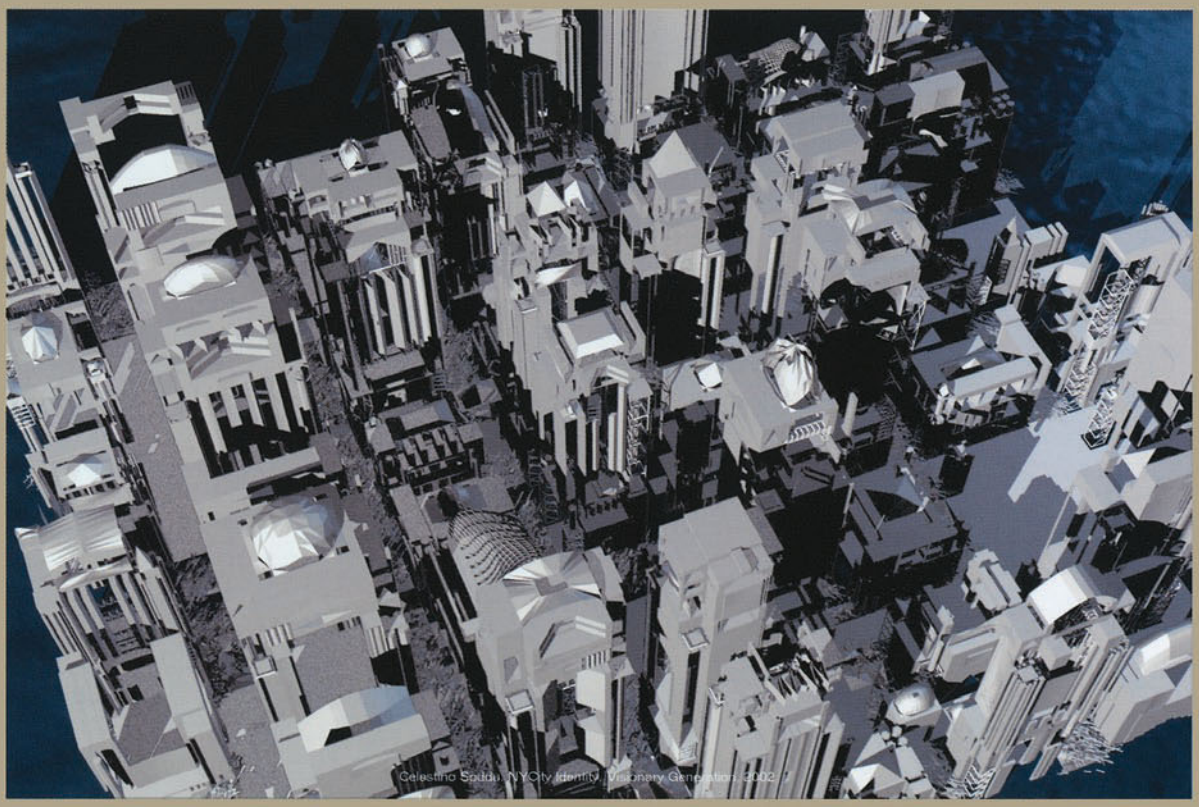
Generative design is a scientific art process that identifies a genetic code as the idea of artificial worlds. The generative project is a concept-software that works producing 3-D, unique, nonrepeatable events as possible manifold expressions of the generating idea identified as a subjective visionary proposal of a possible world. This idea/human creative act renders explicit the unpredictable, amazing, endless expansion of human creativity. Computers are simply the tools for its storage in memory and execution.

Designing this artificial genetic code was, for me, an enthusiastically creative operation. I have found myself returning to the cultural approach of the Renaissance, capable of combining science with art. I have created ideas formulating a harmony code that, as it is born of the history of man and his relationship with nature, identifies and represents my subjective vision of the possible, my imprint as an architect. The code of harmony, like all codes, contains some rules that trace certain forms of behavior. Therefore it is not a sequence, a database of events or forms, but a definition of behavior patterns: transformations of what exists into a possible visionary world.

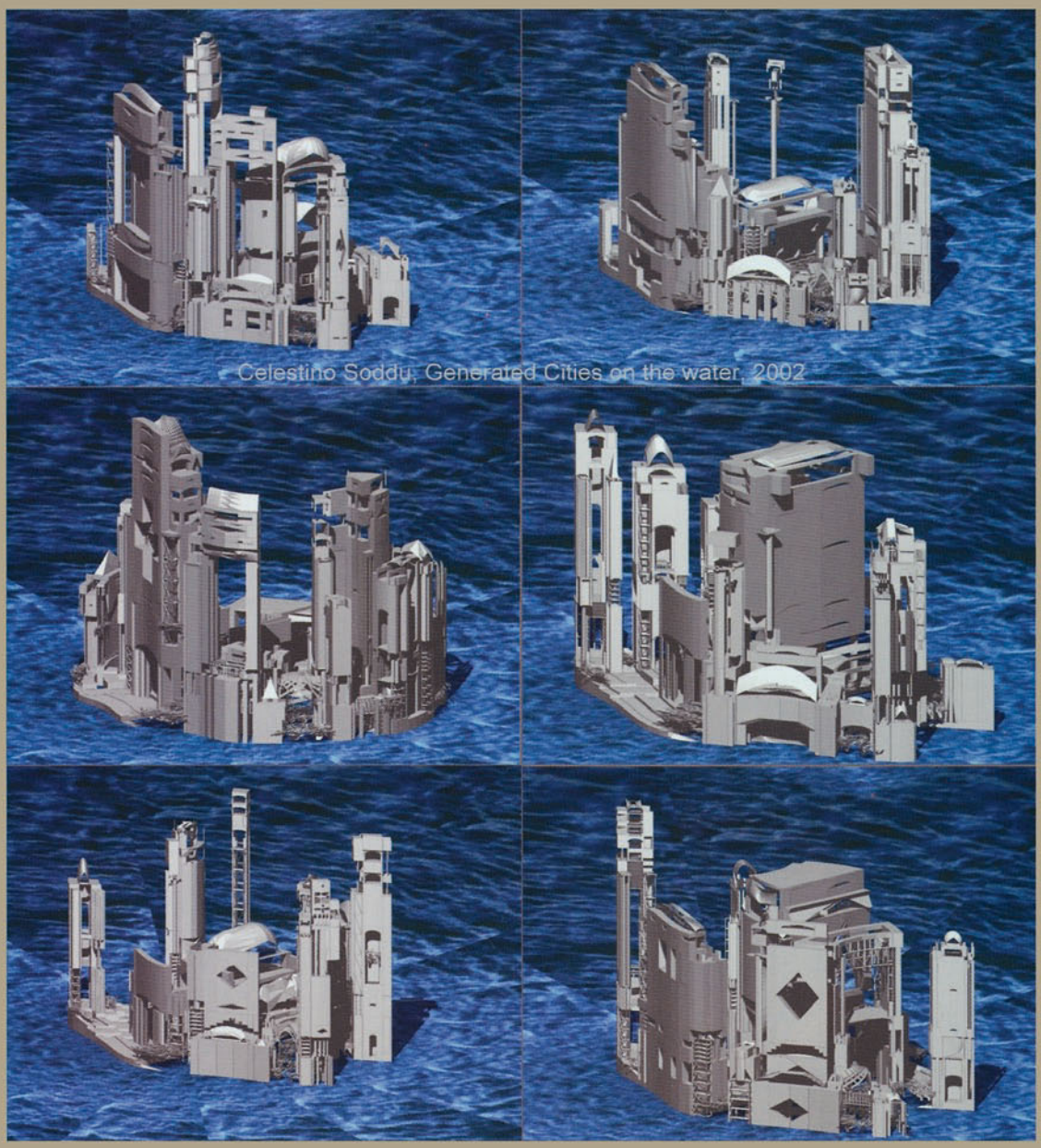


A sequence of generated castles following medieval identity codes realized by interpreting Giotto frescos as medieval DNA.

The design act changes from forming to transforming because each form is only one of many possible parallel results from an idea. This approach suddenly opened the possibility of discovering possible fields of human creativity that would be unthinkable without computer tools. If these tools, at the

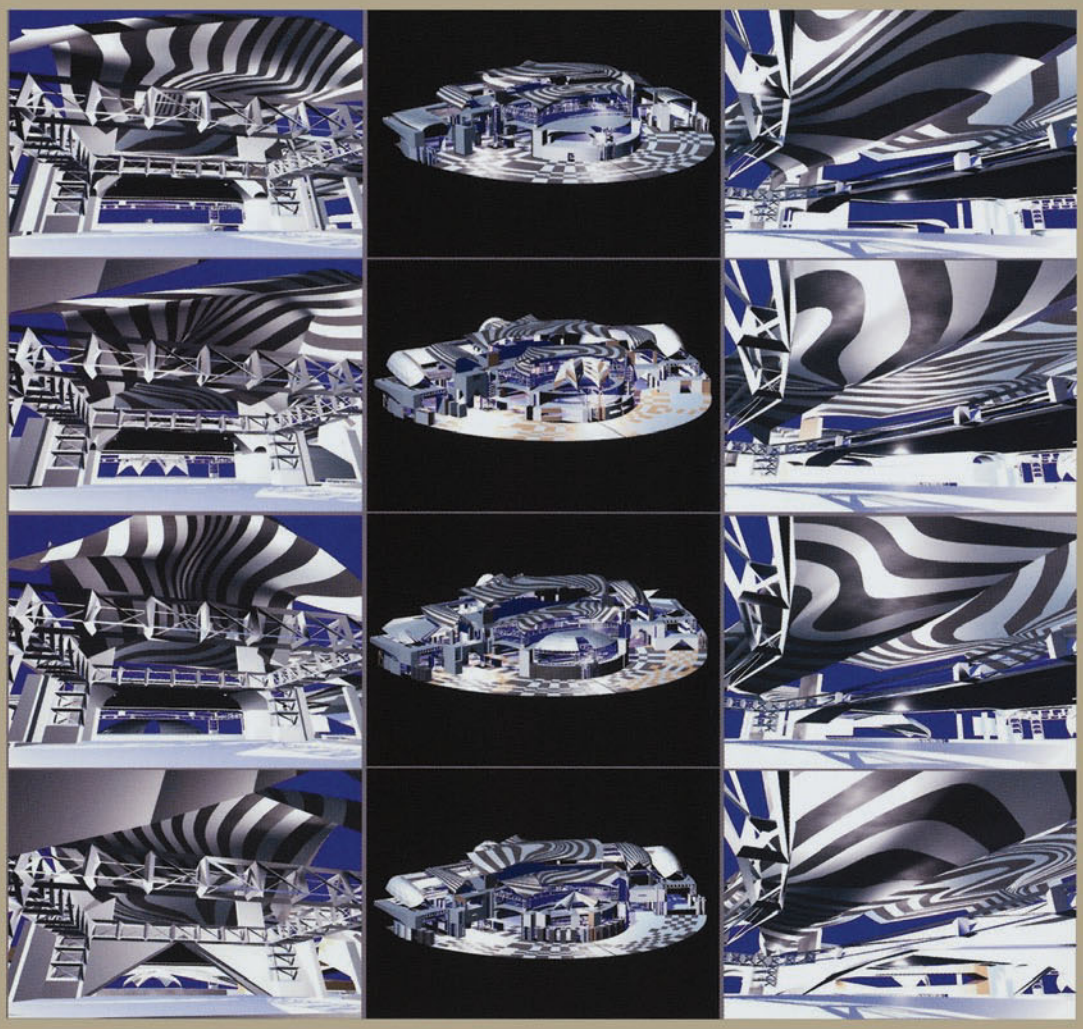


A visionary generation
of New York City's identity.



Above: Generated cities on the sea with the same code.
Right: A generated tower in Los Angeles.

Visionary scenarios of Nagoya (Japan)
increasing identity sequences.



Generated sequences
of different bus stations
with the same artificial DNA

Generated sequence of chairs with the same artificial generative code.

Generated sequence of different coffee pots with the same generative project.

A sequence of generated skyscrapers for the Hong Kong waterfront.

beginning of the computer era, seemed to extinguish human creativity, today they have become tools that open new fields, enhancing the understanding of creativity.

After 200 years of the old industrial era of necessarily cloned objects, the one-of-a-kind object becomes an essential answer to the long-neglected human need to live in a world in which each environment, architecture, and artificial object mirrors the aura of uniqueness and unrepeatability of every person. In an epoch marked by repeated attempts at the cloning of natural beings, design returns in advanced technological fields, such as nonlinear dynamic systems, to the notions of artificial life and artificial intelligence, the aesthetic and ethical pleasure of rediscovering the processes and characters of nature. The pleasure is to identify and appreciate identity and uniqueness.

With the generative approach to architecture and urban design, it is possible to design visionary variations of the city's identity. Identity is "how to look at the future" following a concept of the possible. Each generative town design is a visionary representation of a city changing within its evolutionary codes. The challenge is to design the city's identity, rediscovering something like its artificial DNA, to be able to generate endless evolutionary sequences of the city's artificial life through increasingly complex processes.

The design and intelligent production approach opens a new era in design and industrial production: the challenge of a new naturalness of the industrial object as a unique and unrepeatable event, a mirror of the uniqueness and unrepeatability of man and nature. Once more, man emulates nature, as in the act of making art.

Argenia is the term I have coined for this genetic code of artificial ware that, like DNA in nature, identifies not only an object but also a species of objects. Industrial design will no longer be the idea and realization of an object, but the idea of a species of objects and its industrial generation. The 3-D models produced using **Argenia** are soft, multiple, endless results of the same idea, and can be directly utilized by industrial manufacturing equipment, such as numerically controlled machines and robots, which already represent the present technologies of industrial production. This generative and automatic reprogramming device of robots makes it possible to produce unique objects with the same equipment and with costs comparable to those of objects that are cloned identical, like a printer that can produce pages that are all the same or all different, at precisely the same cost.

ADRIANO ABBADO

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Born in Milan (1958), Adriano Abbado studied electronic music at the Conservatory of Milan. In 1979 and 1981, he toured 10 countries in Central and South America, giving lectures and concerts about electroacoustic music in Italy. In 1981 he began working with computer graphics. Several of his audiovisual works have been shown at international exhibitions, among them the Locarno Videoart Festival and the Venice Biennale.

Abbado co-authored the book **Immagini con il computer**, published by Arnoldo Mondadori Editore; founded the Computer Graphics Department at the Istituto Europeo di Design of Milan; and taught electronic music at the Conservatory of Turin. In 1986 Abbado received a grant from the Fulbright Commission and the MIT Media Laboratory, where he earned a Master of Science degree with a thesis on Perceptual Correspondences of Abstract Animation and Synthetic Sound. Most recently he has created several images, animations, and interactive works. The CD-ROM **animazioni** contains some of his animations, and the book **Sonic Graphics**, published by Thames and Hudson, shows several of Abbado's prints. His most recent works have been shown in Barcelona, New York, Strasbourg, and Paris. He is currently living in Milan, where he is working as an author of multimedia artworks.

MY ARTISTIC PATH

Adriano Abbado

KEY POINTS

A few key points have determined my artistic path since the early 1980s: my interest in the relationship between music and image, the versatility of the computer as a tool, and the idea of facing the infinite.

THE RELATIONSHIP BETWEEN MUSIC AND IMAGE

I have found similarities between music and image ever since I began studying electronic music. I soon realized that other artists had the same feeling. This led me to think that I was on the right track. I then thought that a computer would be the ideal tool for audiovisual art, being flexible and not geared per se toward any particular direction. During one of my journeys, I met John Whitney, one of the fathers of this discipline, who encouraged me to keep up with this idea.

In 1988, after two years at the MIT Media Lab, I wrote a thesis entitled "Perceptual Correspondences of Abstract Animation and Synthetic Sound," in which I established four rules of audiovisual correspondence: space, time, intensity, and visual appearance/timbre.

The basic principles of this thesis are still of great importance to me. Perhaps the most important of all is the fourth: there is a special relationship between musical timbre and visual shape. Shapes are in turn related to spatial frequencies, in other words, to the sharpness of an image. Later I also realized that it is fundamental to be able to escape from any rule. A right balance between rules and freedom of expression is the ideal alchemy.

Lorenzetti's "Peace", digitally reinterpreted by Adriano Abbado

Versatility of the Computer

Today people often speak of the computer as an interactive tool, but it is much more than that. A computer **can** be an interactive tool: we can decide what this instrument is, we can mold it as we like. In my case, I can create a still image, a sound, an animation, or an interactive work: all give me the chance to express myself, and I know other ways it can be used. This gives freedom to the artist, and it goes in the direction of variety, which is, in my opinion, one of the keys of life.

Facing the Infinite

When I sit in front of a computer screen, I feel I am facing the infinite. When I start creating a new image or a new sound, I

only have a bare idea of what I want. In fact I like to consider myself an explorer. But instead of exploring the universe, I explore the digital domain that I create and that exists in front of me. And the more I work, the more ideas come to my mind. After more than 20 years, I am still excited every time I sit down to work; it is an endless pleasure.

Works

The following works may help the viewer to understand my ideas.

latino

latino is an interactive installation that features views of Latin America. Each view is chosen by clicking on rotating panels: once touched, the panel vibrates as if hit by sine waves. An animated sequence then starts, and shows several images related to the topic. The panels can also be rotated. This work is the only one that shows real world images, instead of abstract ones. The images are digitally manipulated, creating original visual effects.

oggetti

oggetti is an interactive 3-D environment composed of 18 abstract objects. Navigation and scene manipulation allow the user to create views. The user can dolly, pan, and rotate the camera, as well as rotate and move each object. Clicking on each object triggers events chosen among a set of 30 animated sequences and seven sounds. These events are not interactive.

The 3-D objects appear as smooth, wire-framed, or rendered as points according to the type of object: smooth ones trigger animated sequences that are the artist's view of that object. Wire-framed objects trigger animations that are totally abstract. Point objects represent sounds.

colori

colori features an interactive 3-D environment composed of seven abstract objects put one inside the other. Each object is tied to a sound: by moving through the objects, the user triggers different sounds, which fade out smoothly. By going to the very center of the world, all sounds are triggered, and the world becomes colorful. The user can dolly and rotate the camera, creating personal views of this abstract audiovisual world.

prints

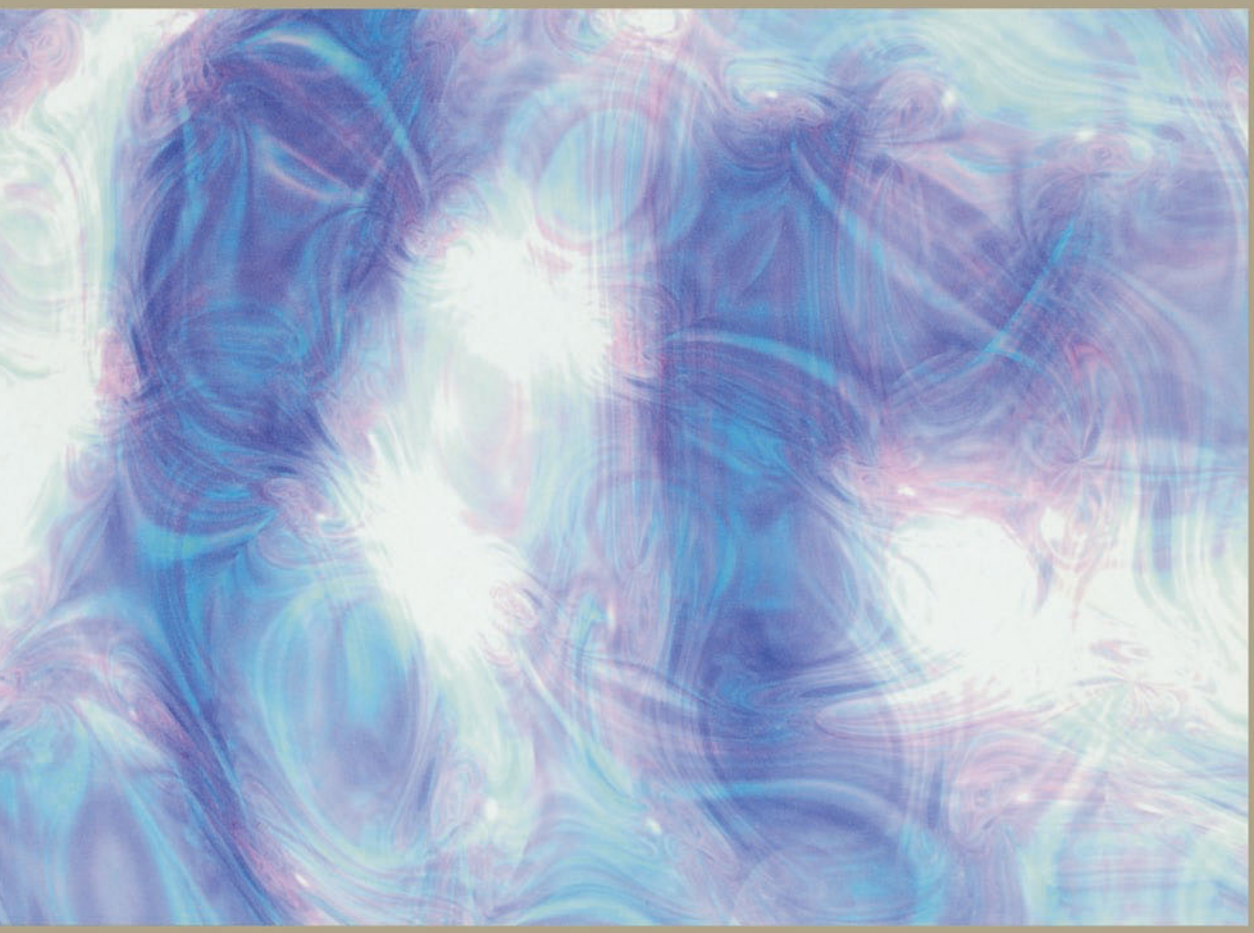
This slide show presents more than 30 abstract images made in the past five years. A first set was made in 1998, its natural evolution was made in 1999, a black and white series was made in 2001, and another set shows a different direction the author has recently chosen. The first two series are made by exploring crystal, curved solids. The virtual camera is put inside them, the result being a very colorful world. The black and white series is obtained by creating cylindrical and spherical projections (instead of perspective projections) of abstract solids. The last set is more traditional and less colorful compared with the first two sets, but simpler and more essential.

variazioni

variazioni is an animation that features 3-D objects and stereo sounds set in relation to each other. The music comes from digitizing various already-existing audio sources, and subsequently manipulating them. The hundreds of sounds that resulted from this process were selected according to their possible visualization and finally mixed. Once the soundtrack was completed, the 3-D objects representing the sounds were created, often but not always following the correspondences established in the aforementioned thesis: Perceptual correspondences of abstract animation and synthetic sound; and time, space, intensity, and timbre/ visual appearance. In general, although some general rules were applied, exceptions were allowed whenever it was deemed appropriate. The animated sequences were then created directly within the 3-D software, without video editing.

motion picture II

This animation, motion picture II, is a sort of painting in motion. The objective was in fact to create a dynamic painting in constant change, an idea that can now be rendered by using flat screens. In particular, motion picture II is meant to be viewed on a 16:9 format plasma display. motion picture II evolves extremely slowly, almost imperceptibly, and gives the impression of being endless. Regarding the method employed to create this animation, motion picture II shows the top orthogonal view of the 3-D software used. The model is a simple plane, the surface of which is highly reflective and modulated by waves that evolve over time. Two images are reflected on the surface, creating the fluid light effects that constitute this animation's peculiar feature. The first one, closer to the observer's point of view, is semi-transparent, so that the second surface below can also be seen. The resulting texture is rich and complex.



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Laura Catrani is the soprano in Mr. Abbado's works.

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