Chapter 4
Digital Animation for Representing Architectural Design

Roberta Spallone
Politecnico di Torino, Italy

ABSTRACT

Since the late nineties digital movies have emerged as one of the main methods for submission of architectural designs at international competitions, public presentations, and shares on websites of contemporary masters. The chapter highlights how the ability to access the fourth dimension, through the construction of a sequence of images, constitutes a specific prerogative of digital representation, which goes beyond the static constraint imposed by conventional methods of representation. The author investigates the methods, techniques, and languages of the fourth-dimensional communication of architecture. The chapter provides analysis and critiques of the case studies collected by the author from the beginning of the phenomenon and traces an ideal interpretation path, due both to the changing technologies and the emerging specific languages.

INTRODUCTION

Since the late Nineties of XX century digital movies have been emerging as one of the main methods for submission of architectural designs at international competitions, public presentations and shares on contemporary masters' websites, allowing to preview buildings, spaces and urban environments before their eventual construction.

The chapter highlights how the ability to access the fourth dimension, through the construction of a sequence of images, constitutes a specific prerogative of the digital representation, which goes beyond the static constraint imposed by conventional methods of representation codified by the Descriptive Geometry in the previous centuries.

The great complexity of architectural video production has led to the birth of new professionals who specialize in modelling, rendering, animation, graphics, montage, editing and post production and work in specialist studios. In the past, this had resulted in the generation of specific and recognizable

languages: the language of the design was overlaid by that of its narration, and they were not always in harmony one with the other.

The author investigates on the methods, techniques and languages of the fourth-dimensional communication of architecture, unexplored area of research thus far, already the subject of previous studies, relating them with the masters' personal poetics.

The chapter provides also analysis and critiques of several case studies collected by the author from the beginning of the phenomenon, and traces an ideal interpretation path, due both to the changing technologies and the emerging specific languages.

BACKGROUND

Digital modelling has affected the entire design process in recent years, starting with the conception through the control and communication of designs and finally to the provision of tools for building construction and then management activities. For the design stage of the process, these new modelling tools seem to have unified the constituent elements of drawing and design, reconstituting them within the etymological roots of the Latin term *designo*, the twofold meaning of which alludes to an abstract component, indicating the mental processes intrinsic to design, and another concrete component relating to the tangible operation of drawing (Garzino, Spallone, & Lo Turco, 2011).

These tools offer a possible answer to Rogers's wishes, who in 1990 said that "what is needed… is for the meaning of drawing (and therefore also the pedagogical and practical interpretation that is derived from it) not to be just the descriptive representation of an object generated by means of symbols, but for its ancient semantic value to return to it, which is summed up today by the English word design (as opposed to drawing), in which the symbols themselves contain the concept of thought, concrete intention and the design of an object" (Rogers, 1990).

Digital models have a syncretic nature which offers new opportunities to the scientific research and architectural design: tests and errors occur in a space in which our experience of problems are rendered fluid and immediate as in an architectural promenade, "3D computer models… allow more enhanced and more controlled interaction between users and models, they are able to cover the whole range of possible models in a single system of representation" (Maldonado, 2005).

Moriconi, an earlier scholar of infographics, underlined that "through the infographic support, digital drawing simulates a hypothetical reality, goes beyond the limitations of the static and allows interaction with any type of sign. With the creation of virtual images, infographic technology represents what is perhaps the most appropriate tool for interpreting the complexity of reality" (Moriconi, 2001).

According to Manovich the rise of the movie camera as a universal paradigm for the interaction with any data which is represented on three dimensions goes back to the 1980s and 90s. Indeed he affirms that "as the computer culture is gradually spatializing all representations and experiences, they become subjected to the camera particular grammar of data access. Zoom, tilt, pan and track: now we use these operations to interact with data spaces, models, objects and bodies" (Manovich, 2011).

As a new medium, the animation of digital models requires the establishment of relationships with several disciplines such as communication sciences and cinema engineering and with technologies like that of video games and it must also pass the test of comparisons with the established conventional technologies of film production. "Considering architecture as a form of art, we might learn from other artistic disciplines, such as moviemaking (cinematographic approaches, sequencing and animation),

Related Content

Postharvest Management Strategies
Rohanie Maharaj, Dimple Singh-Ackbaraliand Clement K. Sankat (2015). *Impacts of Climate Change on Food Security in Small Island Developing States (pp. 221-254).*
www.irma-international.org/chapter/postharvest-management-strategies/118027

Chemical and Biological Treatment of Dyes
Kiran Meghwal, Reema Agrawal, Srishti Kumawat, Nirmala Kumari Jangidand Chetna Ameta (2020). *Impact of Textile Dyes on Public Health and the Environment (pp. 170-204).*
www.irma-international.org/chapter/chemical-and-biological-treatment-of-dyes/240903

Development of Silica Thin Film as a Self-Cleaning Surface on Various Materials
Yayuk Astuti, R. A. Yunita Suci Rahayuand Esens Estetika (2023). *Food Sustainability, Environmental Awareness, and Adaptation and Mitigation Strategies for Developing Countries (pp. 167-181).*
www.irma-international.org/chapter/development-of-silica-thin-film-as-a-self-cleaning-surface-on-various-materials/319458

Technological Developments in the Determination of Emerging Contaminants in Water
Magali Kemmerich (2020). *Effects of Emerging Chemical Contaminants on Water Resources and Environmental Health (pp. 81-108).*
www.irma-international.org/chapter/technological-developments-in-the-determination-of-emerging-contaminants-in-water/248377

Global Implications of Sustainability and E-Society Infrastructure in Developing Economies
Biru Ramona (2018). *Promoting Global Environmental Sustainability and Cooperation (pp. 162-183).*
www.irma-international.org/chapter/global-implications-of-sustainability-and-e-society-infrastructure-in-developing-economies/205739