

Preface

The Graphic Horizons motto captures the profound meaning of research in the field of architectural graphics, symbolizing, in that horizontal line that is never fully reached, a task of continuous exploration that propels us into the future with the hope of expanding the boundaries of knowledge. This metaphorical horizon, closely linked to the tradition of adventure and discovery in two Atlantic cities like A Coruña and Porto, inspires us to look beyond the immediate and face new challenges creatively, opening the doors of exploration in the *Expresión Gráfica Arquitectónica* (EGA; Architectural Graphics) area to a wide range of specific topics. Graphic Horizons implies not only a commitment to architectural graphics research but also a willingness to engage in debates and critical reflections on the challenges and opportunities that continuous changes pose in the realm of visual representation in architecture.

Acknowledging the swift pace of change in our contemporary society, where events unfold with urgency, the graphic expression in architecture is depicted as intimately connected to this dynamic reality, highlighting the necessity to creatively respond to current situations. The future trajectory of our discipline hinges on our collective ability to adapt with flexibility and innovation, underscoring the pivotal role of graphic expression in navigating and shaping the architectural landscape.

This edition contributes to the dissemination of our research and teaching experiences that originated from the first *Jornadas EGA* in 1984 in A Coruña. It reflects a continuous and renewed commitment to discussion, spanning the 19 biennial editions that have unfolded without interruption since the 1986 Congress in Seville. Starting from the III EGA Congress in Valencia in 1990, these gatherings have acquired an international character.

This special edition takes place in the historic city of Porto, thanks to the collaborative efforts of the EGA department at the Universidade da Coruña and the Faculdade de Arquitectura da Universidade do Porto. It is a proof to the enduring commitment to fostering dialogue and exchanging ideas.

This volume emerges as a result of the 20th International Congress on Architectural Graphics, held in Porto in May 2024. The scholarly contributions within are aligned with the objectives of the *Sociedad Científica EGA (Asociación de profesores de Expresión Gráfica Arquitectónica)*. Each author or group of authors contributed an abstract in their native language, which has been incorporated into the Congress proceedings published by the Universidade da Coruña.

As an independent and external activity, and with the intention of contributing to a broader dissemination of research and advances in the field, the Scientific Committee selected a series of authors who were invited to contribute to a collective work with a distinct and more comprehensive text on various topics related to the main issues in architectural graphics included in this volume. The Organizing Committee proposed to continue using the key topics raised in the 19th edition as a reference: Analysis, Thought, Education, Production, and Knowledge.

More than 280 researchers actively participated in the selection process, submitting a total of 163 research works with the intent of being included in this publication. The featured works underwent a rigorous selection procedure, involving a double-blind peer-review of the full papers. A carefully chosen panel of 74 reviewers, esteemed experts in the discipline of architectural graphics and representing diverse countries, played a pivotal role in this process. After this extensive review, 136 papers were ultimately accepted and systematically categorized according to research topics: 36 chapters for Analysis, 40 chapters for Knowledge, 16 chapters for Production, 33 chapters for Education, and 11 chapters for Thought. Consequently, this publication consists of three volumes distributed as follows. *Volume 1: Graphics for Analysis and Thought* with 47 chapters, *Volume 2: Graphics for Education and Production* with 49 chapters, and *Volume 3: Graphics for Knowledge* with 40 chapters.

Graphics for Education

This section unfolds as an illuminated map tracing the diverse paths of architectural education through the prism of graphic expression. From the development of physical simulations with artificial intelligence for BIM methodology to playful and didactic experimentation in a cultural landscape, each chapter is an educational journey through the infinite possibilities of visual expression in the architectural realm. Exploring the teaching of surfaces between geometry and stereotomy to the application of augmented reality in graphic motivation and communication, various pedagogical approaches converge here. From the examination of conic curves in portraiture to the persistence of the tradition of hand drawing against emerging digital technologies, each article serves as a window into the creative and evolving teachings that nourish the very soul of architecture. This section invites educators and students alike to explore the richness of the learning process, embracing traditional methods and digital frontiers and fostering an inspiring dialogue between tradition and innovation in architectural education.

Graphics for Production

This section unfolds as a dynamic stage that unveils the multiple facets of architectural production through graphic expression. From the transition from replication to emulating the creative process to the application of virtual reality to assess interiors with different color palettes, each chapter represents an exploration at the frontiers of architectural production. Advancements in architectural technology converge here, ranging from text-to-image tools for plan generation to digital models and sensory substitution devices. From the utilization of Building Information Modeling (BIM) to visualize the impacts of buildings to the exploration of digital manufacturing technologies as tools for representation and visualization in architectural design, each article provides a window into the innovative horizon redefining architectural production and representation. This section invites professionals and researchers to delve into the intersection of technology,

design, and visual expression, creating a stimulating dialogue that opens new avenues in architectural production.

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