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Mission

ATINER is a World Non-Profit Association of Academics and Researchers based in Athens. ATINER is an independent Association with a Mission to become a forum where Academics and Researchers from all over the world can meet in Athens, exchange ideas on their research and discuss future developments in their disciplines, as well as engage with professionals from other fields. Athens was chosen because of its long history of academic gatherings, which go back thousands of years to Plato’s Academy and Aristotle’s Lyceum. Both these historic places are within walking distance from ATINER’s downtown offices. Since antiquity, Athens was an open city. In the words of Pericles, Athens“... is open to the world, we never expel a foreigner from learning or seeing”. (“Pericles’ Funeral Oration”, in Thucydides, The History of the Peloponnesian War). It is ATINER’s mission to revive the glory of Ancient Athens by inviting the World Academic Community to the city, to learn from each other in an environment of freedom and respect for other people’s opinions and beliefs. After all, the free expression of one’s opinion formed the basis for the development of democracy, and Athens was its cradle. As it turned out, the Golden Age of Athens was in fact, the Golden Age of the Western Civilization. Education and (Re)searching for the ‘truth’ are the pillars of any free (democratic) society. This is the reason why Education and Research are the two core words in ATINER’s name.
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Michael O’Brien
Athens Journal of Architecture
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President's Message

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Before you submit, please make sure your paper meets some basic academic standards, which include proper English. Some articles will be selected from the numerous papers that have been presented at the various annual international academic conferences organized by the different divisions and units of the Athens Institute for Education and Research.

The plethora of papers presented every year will enable the editorial board of each journal to select the best ones, and in so doing, to produce a quality academic journal. In addition to papers presented, ATINER encourages the independent submission of papers to be evaluated for publication.

The current issue of the Athens Journal of Architecture (AJA) is the third issue of the fifth volume (2019). The reader will notice some changes compared with the previous issues, which I hope is an improvement.

Gregory T. Papanikos, President
Athens Institute for Education and Research
9th Annual International Conference on Architecture
8-11 July 2019, Athens, Greece

The Architecture Unit of ATINER, will hold its 9th Annual International Conference on Architecture, 8-11 July 2019, Athens, Greece sponsored by the Athens Journal of Architecture. The aim of the conference is to bring together academics and researchers from all areas of Architecture. You may participate as stream organizer, presenter of one paper, chair a session or observer. Please submit a proposal using the form available (https://www.atiner.gr/2019/FORM-ARC.doc).

Academic Member Responsible for the Conference

- Dr. Nicholas N. Patricios, Vice President of Strategic Planning & Analysis, ATINER and Professor & Dean Emeritus, School of Architecture, University of Miami, USA.

Important Dates

- Abstract Submission: Deadline closed
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: 17 June 2019

Social and Educational Program

The Social Program Emphasizes the Educational Aspect of the Academic Meetings of Atiner.

- Greek Night Entertainment (This is the official dinner of the conference)
- Athens Sightseeing: Old and New-An Educational Urban Walk
- Social Dinner
- Mycenae Visit
- Exploration of the Aegean Islands
- Delphi Visit
- Ancient Corinth and Cape Sounion

More information can be found here: https://www.atiner.gr/social-program

Conference Fees

Conference fees vary from 400€ to 2000€
Details can be found at: https://www.atiner.gr/2019fees
# 9th Annual International Conference on Urban Studies & Planning, 3-6 June 2019, Athens, Greece

The [Architecture Unit](https://www.atiner.gr) in collaboration with the [Social Sciences Division](https://www.atiner.gr) of the ATINER will organize its 9th Annual International Conference on Urban Studies & Planning, 3-6 June 2019, Athens, Greece sponsored by the [Athens Journal of Architecture](https://www.atiner.gr). The aim of the conference is to bring together academics and researchers from all areas of social sciences such as urban sociology, urban geography, urban design, urban planning, architecture, etc. You may participate as stream leader, presenter of one paper, chair of a session or observer. Please submit a proposal using the form available [here](https://www.atiner.gr/2019/FORM-PLA.doc).

## Important Dates

- Abstract Submission: **Deadline closed**
- Acceptance of Abstract: 4 Weeks after Submission
- Submission of Paper: **6 May 2019**

## Academic Members Responsible for the Conference

- **Dr. Nicholas N. Patricios**, Vice President of Strategic Planning & Analysis, ATINER and Professor & Dean Emeritus, School of Architecture, University of Miami, USA.
- **Dr. Virginia Sisiopiku**, Head, Transportation Engineering Unit, ATINER, & Associate Professor, The University of Alabama at Birmingham, USA.
- **Dr. Jesus J. Lara**, Academic Member, ATINER & Associate Professor, The Ohio State University, USA.

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Color Architecture Landscape in the Ancient Mediterranean World Mural Painting, Analysis and Comparison: Mutual Influence and Contamination through the Mediterranean Sea

By Patrizia Falzone*

The basic themes are: A - The building, at architectural, building and urban levels, in the relationship between architectural, chromatic and decorative values. B - The theme of the landscape and of the environment, the built in relationship with urban spaces and territory. C - The theme, most important, about the mutual influences and contamination - colours and decorative types - resulting from dense web of relationships of populations across the Mediterranean Sea. Common to the themes is the very important aspect of the identification of places in relation to their prevailing colour components, or to the types of decorative and chromatic devices. If the interest of the writer for the color is developed in a wide span of time, the study of architectural-chromatic-decorative elements of the facades of historic buildings from the Middle Ages to the nineteenth century, here however they retrace the origins and history, to prove, both from what remains both the most from the ancient and authoritative sources, that this building and decorative practice, the decorative surface finishing function, either with exterior and interior architecture, is an integral part of architecture that has always been. It is the continuation of a very ancient and widespread practice in many countries bordering the Mediterranean, as in the Egyptian world, whose origins precede the fourth millennium BC, and in the neighboring cultures, Syrian-Palestinian and Phoenician. The same is found in the Greek and pre-Hellenic world, from what remains at Knossos in Crete, at Santorini and in Greece, as documented by the architectural type color treatment, pretending colored marble, the portion of the wall, rebuilt, kept at museum of Pella (Macedonia), referring to the 4th century BC, and the reign of Philip II.

Introduction

The theme of re-built environment and landscape colour component in the report with the form and the characters both buildings of urban spaces, is located within a wider and complex cognitive architecture method. A method which seeks to bring in evidence that still exists of colour components, a significant time and identity, not only architecture, but also places in their natural components: mainly in order to redesign the restoration and enhancement of this heritage. Two are the major fundamental themes in the subject matter:

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- The theme at architectural, building and urban levels of the built in relation to the chromatic/decorative values of its surfaces: vertical and horizontal.
- Landscape and environment theme, regarding the color interaction of the built with immediate spaces of space, with large urban spaces, and above all with the shape and character of the surrounding territory; moreover, the impact of the built in the environment.¹

Common to both themes is the aspect, very important, of the identification of places in relation to the prevailing chromatic components (both the natural element and buildings elements), or to the types of decoration. Therefore, knowledge (and survey) prospects in all their components, including decorative features, colors, type and material of any kind of technologies, constitute a fundamental element of historical-critical documentation and complete knowledge of the buildings, especially for the purposes of protection, enhancement and conservation.

But what appeared fundamental to a real deep knowledge of color component in the ancient Mediterranean world, which will merge then that of the centuries to come, especially in the "modern" era, is the study of reciprocal influences and contamination – materials, colors and decorative types – deriving from the dense Web of relationships of populations across the Mediterranean Sea since ancient times, for both political and commercial reasons. This in order to understand how and why decorative elements and behaviors occur in countries far away and different cultures, and what are the directions of development of the various attitudes.

Indeed, since the dawn of time, man has used to build the buildings, in each region/country, and especially in the Mediterranean, technology, materials, and their colors:

- primarily stone and/or brickwork (structural or coating), monochromatic or bicromous, horizontal or design, geometric, or decorative;
- simple colours, on all or part of the facade;
- decorative and geometric motifs painted, as carpets hanging on the walls, up to real wall paintings on the exterior and internal facades (and first on rock, both inside and outside, from prehistory to churches and monasteries excavated in the rock, as well as Cappadocia, or Matera-Italy);
- ceramic coatings, monochromatic, polychrome, both exterior and interior (domes, roof, exterior walls and interiors, doors and urban enclosures, garden furniture), typical of the eastern countries but diffused mainly in southern Italy, or in all places reached by the Mediterranean Sea;
- cobblestone mosaics, monochromes, bicromes or polychromes, from the earliest times, in the finest types of Pella (Macedonia), and throughout Greece, and then regular mosaics, widespread in Rome, in the Byzantine

world, and everywhere in Italy, up to the last few centuries, from the simplest and most essential forms (cobbled in the streets), to the richest and most decorative ones, geometries, scenes, figures, and architectural elements.

A use of color through materials with chromatic values – stones, marbles, pebbles, colored plaster, which varies from that constructive-decorative (ceramic elements to cover domes and roofs – walls-floors, or mosaics) to actual fresco painted facades decorated with architectural motifs, with or without figures or figurative scenes, or with decorative geometric, floral, symbolic and heraldic motifs.

So, if the interest for color, of those who write, has grown into a wide span of time in the study of chromatic-decorative-architectural facades of historical buildings in Italy and in Europe, and particularly in the study of façades painted with fresco, from the Middle Ages to the nineteenth century, here we want to retrace the origins and history. To demonstrate, both from what remains, both in reference to the most ancient authoritative sources and from modern discoveries, based on surface decorative finishes, (both external and internal) of architecture, is an integral part of the architecture since ever, aimed at the architectural facies, as well as to express political, religious, social content. What prompts you to reconsider the Mediterranean world and Middle East, the cradle of our civilization.

This examination of the Mediterranean world had already begun regarding the specific case of study of stone materials constituting the surfaces of architecture, especially of the exteriors, from study² which had emerged already a not unimportant concatenation of decorative mode in the Mediterranean basin.

State of the Art

Regarding this issue, it must be said that there are no specific extensive insights into the timeline, because existing studies typically face cultural, architectural and artistic scopes separately in each country, or of individual historical periods. Moreover, studies in the history of art and architecture take into consideration aspects or particularly significant artifacts usually under the artistic aspect. Therefore, it seemed interesting to try to delineate an excursus on the topic, as much as schematic e concise, us timeline anyway, in different cultures, characters and using decorative types, materials and colors in architecture.

But, even before that, the proposed theme, in addition to the recognition of the artifacts, and their comparison in time and in the various geographical areas, requires the recognition of historical, political, economic, as well as

artistic and archaeological events, of different civilizations and cultural areas in the Mediterranean basin. Recognition that offers a punctual reference to the connections, even the most distant, of typologies, of decorative apparatuses, of stylistic and representative modalities, of the artefacts object of this study

Civilization of the Ancient Mediterranean World: Influences and Relationships

The numerous and even more recent archaeological discoveries in mainland Greece, in Crete and in the Cyclades, have enriched and sometimes modified the knowledge on the Aegean civilization from the end of the Neolithic Age to the Bronze Age and those related to the initial phase of the Iron Age. This has also highlighted the important role that the different cultures present in the Aegean territories (Aegean civilization that includes the Cretan, Cycladic, Mycenaean civilizations), have assumed in the process of formation and development of the successive Protogeometric and Geometric Age, in which the process of integration between them takes place, as premise to the creation of the Greek civilization. But not only.

The latest research³ aims to better understand the Aegean cultural "facies", and the individual Cretan, Cycladic, and Mycenaean civilizations, from their farther past, and their reciprocal influences. In addition, in order to underline the existence of close relations between the Aegean and Middle Eastern peoples, although they were sometimes separated by significant geographic distances, the possible cultural referents outside the Aegean world are also considered, in Mediterranean or Middle Eastern countries.

The beginning of the process of formation of the Aegean civilization appears very marked by the strong cultural change of the populations of the Greek peninsula and of the Aegean islands, in relation to the contact with the Anatolian civilization, since the beginning of the III Millennium, with the knowledge of use of metals (gold, silver and copper), and of the megaron as a housing unit.

In the first half of the same millennium, the extension of their artistic repertoire and the modification of traditional customs and habits are due to the interweaving of commercial relations with the Middle Eastern populations.

In the last centuries of the III Millennium these effects are more evident in the Aegean territories, and, in particular, in the island of Crete, thanks to its favorable geographical position and the ability of its population in the art of sailing, which allows to establish flourishing commercial activities with the Mediterranean countries due to the supply of refined handmade bronze objects. The presence of arioeuropean groups that settle in the Aegean territories during the period of transition between the III and the II Millennium, which despite the sequence of disastrous seismic events, give life and vital signs in the Cretan society.

Crete, after the destruction of the main palatial centers around the 1700 A.C., for reasons still not completely clarified, crosses in the neopalatial period (from the end of the XVII C. until the first decades of the XV century B.C.), a period of great political, artistic and economic splendour, assuming the role of the main pole of cultural irradiation not only of the Aegean, but also of the Mediterranean.4

In this phase Cretan merchants resume and intensify trade relations both with Egypt (where they could freely exercise their business with the consensus of the Pharaoh), and with Syria (in whose coastal range they had bases). In this period there are osmosis of knowledge and relationships also with artistic and cultural aspects, as well as building, with architectures characterized by a great monumentality, perhaps due to oriental suggestions.

The monumentality is also addressed to the sanctuaries already existing on the peaks, in a prominent position, with the addition of terraces and new structures, which accentuate the role of the place people faith devotion, and that of territorial control.

The renovation also extends to the Cyclades islands but, if the Cycladic continue to integrate the iconographic schemes in their architectural and decorative language, the decorative parties and the constructive systems derived from the Cretan architecture. The elegant wall decorations of Akrotiri in the island of Thera (Santorini), still preserved, show to be the highest, original and valuable expression of what is produced in this sector in the Aegean world.

The birth, between the end of the XV and the beginning of the 14th century, of the complex Mycenaean palatial system, with its policy of control of the transmarines of metal supply, determines the ascent of Mycenae to the rank of great political center of the Argolide and of Greece, as well as a reference pole for the populations of the regions on Pontus Euxine/Black Sea (rich in mineral deposits), for those of Cyprus, of Western Anatolia, of Troad, of the Balkans, of the Iberian Peninsula and of southern Italy, and Sicily. The Mycenaean invade the island of Crete and the Cyclades around 1425 B.C., becoming undisputed masters of the Mediterranean, even for internal conflicts or weakening of the central Cretan power caused by the earthquake, referring to the period 1550/1530, but they transpose the Cretan and Cycladic customs, bringing together in the new state unit, Mycenaean, the motifs derived from the traditions of the three geographical areas. Moreover, in the last decades of the 13th century B.C., the disasters for the seismic events and the threats of the Balkan peoples so weaken the palatial Mycenaean system that in the beginning of the XII century, there is the collapse of the great Mycenaean civilization.

Methodology

The method to reconstruct this cultural and architectural heritage, even from the smallest signals and traces of colors in architecture, use:

4. Ibid, 10-14.
the more general bibliography, art and architecture, about individual countries;

- the existing specific bibliography;

- archives, both in Italy and abroad: of the Superintendencies, the historical archives of the municipalities and of the State Archives;

- museums and how to preserve these paintings or wall coverings, or documents;

- travel and the project visits undertaken personally over time, with specific attention to this aspect, and related documents, to build a path of color in architecture behaviors in the countries of the Mediterranean basin, from its origins and over time: buildings, urban episodes, cities, territories and historical environments in general.

Critical to this investigation is not only what is still preserved almost everywhere in the Mediterranean world, in the countries faced to it, but also the pictorial production of representation of built by artists and scholars of the past; especially the one that derives mainly from the documentation of the Academy of France in Rome pensionnaires of the nineteenth century. In addition, since February of 1845, the Académie des Beaux-Arts in Paris that was the Academy's pensionnaires Villa Medici in Rome was allowed to spend a year in Athens to prepare or explore the themes of their mails and packages. So, by 1846, the École Française of Athens, founded in 1846, welcomed french pensionnaires who attended numerous.\(^5\)

They, besides the measured survey and the study of single building, represented in the orthogonal projections, in color, designed and/or painted images even with high landscape value regarding ancient artifacts perception, and the relation between buildings/cities and the territory. Basically even as they draw and paint scholars, archaeologists, historians, artists, or just fans, both English and Germans, Italians, French, giving an important contribution in this direction, starting from the end of the eighteenth century to the early 20\(^{th}\) century,\(^6\) what the huge corpus of watercolors by David Roberts on Egypt.

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Color Behaviors in Architecture in the Countries of the Mediterranean Basin

With respect to two levels, A and B, for reasons of space the theme is here considered together in every age and country, except in the case of Greece, which is particularly significant for the presence of the corpus of drawings in color, very nourished even in environmental, by the pensionnaires of France, which already expresses awareness of the importance of this aspect, in the wake of what has been done by David Roberts (1796-1864) in Egypt, Nubia and the Holy Land.

The use of color in architecture is very ancient and widespread practice, developing in many countries overlooking the Mediterranean: from Egyptian world, whose origins predate the 4th millennium BC, and from neighboring cultures, Syro-Palestinian and Phoenician, to that, even more to the east, Mesopotamian, very articulate, to the Aegean, Cretan, Cycladic and Mycenaean, flourished during the 3rd and 2nd millennium BC, in the area of the eastern Mediterranean basin, with its two main centers of development, the island of Crete, in the Aegean sea, and the city of Mycenae in the Argolis. In Central Italy the culture of the Etruscan world already use widely this practice, as witnessed by the 11th century BC in the complexes rich graves painted equipment of the tombs of Cerveteri and Tarquinia: pictorial culture which flows then in Roman, with the overlap of the Romans to the Etruscan civilization.

Colors and Decorative Features in the Egyptian World: Use and Characters

Already in the Egyptian world, one of the oldest civilizations before the 4th millennium BC, color and decoration components appear important and widespread, in relation to the strong symbolic content than depicted in wall paintings (both political and religious issues), as well as in neighboring cultures (Syro-Palestine and Phoenicia), with which a remarkable artistic exchange interweaves over the centuries.

This civilization develops into a long period of time, from the archaic period or Tinita (3150-2700 BC), until the late period (672-343 BC), producing constantly carved, painted, or sculpted devices and paintings, with very lively colors, on the external and internal walls of temples, palaces on the and especially with strong religious and symbolic meanings in the many tombs.

The tablet of King Narmer (or Menes, lived around 3125-2850 B.C.), Pharaoh of the Egyptian of the first dynasty, introduces you to the wonderful world of rich Egyptian mythology, and is one of the oldest documents of the first Egyptian Kingdom, the Thinita Kingdom (3000-2778 B.C.). In this realm writing was born, but mostly were defined the iconography of deities, which will remain unchanged: Horus, the God of the Sun, depicted as a Falcon; the snake, protector of the King, as the Stele of King snake in the Louvre in Paris, and numerous other sacred animals like the ox, cat, crocodile, scrabble.

With the third dynasty, which begins the Old Kingdom (2778-2220), and moves the capital to Memphis, founded around 3000 on the delta of the Nile by
the first pharaoh Menes, the city develops with grandiose monuments, and sculptures.

The five centuries of the new Kingdom (1580-1085 B.C.) are the richest of artistic works in the history of Egypt, especially in the field of wall paintings. Are elaborate pictorial and plastics shapes rich, varied, imaginative, in some cases by releasing figures from usual fixity and rigidity, as in the grandiose funerary temples arose around Thebes that replace the pyramids. The temple of Queen Hatshepsut at Deir-el-Bahri is a single episode of monochrome architecture-environment, with large sloping terraces adjoining the rock, made in the same color, creating a unique among the natural and built context, and an insertion in the environment of great visual effect.

In bigger temples, tombs and in the most important buildings dominating the decorative component – of design and chromatic - always strongly religious and symbolic celebration of the figure of the Pharaoh: Temple of Thutmose III in Karnak, dedicated to the god Amun-Re; of Amenofis III in Luxor, dedicated to the divine triad Amon-Mut-Khonsu, terminated later by Ramesses II, with extensive decorations on relief and long colonnades.

The highly engrave drawing of the outlines, with a strong chiaroscuro effect (temples of Edfu, Philae), used to reinforce and emphasize the characters, animals and objects of the narration, is very widely used.

The iconographic repertory consists mainly in ceremonial scenes, with the Pharaoh, the gods, court characters, sacred animals and plants, neatly composed at times with hieroglyphs and religious symbols, as in the funeral chapels of Thutmose III and Haremhad (Figure 1). Figures and scenes, decorations, animals, and hieroglyphics operate a scan of the surfaces, and then space, and a dimensional reference, including through the presence of the human figure: thus the painted decoration creates architecture, especially when this is very simple.

Figure 1. (Left) Funeral Chapel of Thutmose III. Fresco of the Back Wall (Right) Tomb of Haremhad. Wall Fresco. Sakkara. Kings’ Valley

In the Temple of Hator at Dendera the duotone vault, with a bright blue background, presents a procession of relief figures, of earth color of light shade, enclosed within the figure of the goddess Nut, with the solar disk.
But the façade of the Temple also shows the presence of bright and vivid colors in the suggestive watercolors of David Roberts, in the frieze and capitals formed by the heads of the goddess Hator, with a rich polychrome hairstyle in bright colors (Figure 2, on the right, below).

![Figure 2. Temple of Hathor at Dendera](Source: Egitto, vol. I (Milan: Fabbri Editors, 1997-98); https://tinyurl.com/yd2bfum2.)

Thus, in the exterior and interior of the grandiose temples the decoration marks everything, from walls to columns, trabeation and vaults, they almost always assimilated to the vault of heaven, like the case of the Temple of the goddess Hathor at Dendera, and of the great tombs (Tomb of Ramesses II, Tomb of Ramesses V and VI, Nefertari's Tomb, ...) with the iconography of the goddess Nut, Lady of the sky, which binds all the time in one paginates, curving arc to embrace the whole time on the three sides.

Few are the colors used, but always very lively: red, ochre, light blue, blue, then white, green, black.

At the same time there is also the presence of a stylistic-decorative typology with a strong naturalistic component, and more joyous, defined by softer and rounder lines, and more delicate colors, strongly decorative, proves instead with evidence linking with the Cycladic and Cretan civilization, deriving from the dense commercial network existing between the two countries, as mentioned above, in art forms but also in subjects, representing episodes of life: hunting, parties, dances and domestic life, such as the most lively paintings perhaps coming from the Tomb of Nebamon (Figure 3).

The comparison between the frescoes of Akrotiri in Santorini and Knossos in Crete shows this strong parallelism, especially in reference to the joyful component of a life in total immersion in the natural environment (Figure 4).
Returning to the grave paintings, in the King Tut’s tomb is made with the classic essential interior painted architecture, consisting of a base and range from full-height walls punctuated by the impressive figure of Pharaoh with the...
gods and, in the hallway, by the two guardians – big dogs/Anubis-, with the vault all minutely written in hieroglyphs (Figure 5).

**Figure 5. King Tut’s Tomb. Entrance Hall and Funeral Hall**  
*Source: https://tinyurl.com/yd2bfum2.*

With the 19th dynasty, of Ramessidi, in addition to the extensions of Karnak and Luxor are born new temples carved into the rock, with face characterized by giant statues of Pharaohs and extensive bas-reliefs, as the two temples of Abu Simbel (Figure 6), that still refer to the unity between architecture-environment, of great landscape value, both for the continuity of materials and that of color, meanwhile does not change, in the Interior, the use of the painting, according to represent Pharoah and religious scenes or symbolic.

**Figure 6. The Two Temples of Abu Simbel. The Wall Paintings of the Interior of the Great Temple, with Gigantic Figures, and the Current Environmental Insertion. The Picturesque Landscape of Rock-cut Temples Primordially Stems from 19th Century Watercolor by Hector Hereau**  
*Source: Egitto, vol. 4 (Milan: Fabbri Editors, 1997-98).*
The funeral chapels of the Pharaohs, increasingly monumental and architecturally complex, show ever richer wall paintings, forming a real interior design, as in the Tomb of Ramesses I, in Ramesses II, Ramesses V and VI, and of all the Pharaohs of the dynasty.

Figure 7. Tomb of Ramesses I. The Pharaoh with Horus and Anubis
Source: https://tinyurl.com/yd2bfum2.

In particular, the tomb of Nefertari, one of the wives of Ramses II, contains one of the most beautiful and representative both painting cycles of the decorations and the highest technical level of the 13th Century B.C.

Figure 8. Nefertari’s Tomb. Tebe
Source: https://tinyurl.com/yd2bfum2.
The rich and complex decoration of the tomb of Ramesses V and VI. The back wall of the alcove is painted in light tones, in horizontal bands best with thick ceiling decorations and hieroglyphs, and thickly painted in horizontal bands, embrace the figure of the goddess Nut. Monumental figures mark the pillars and walls, creating also here a supernatural path.

Figure 9. Tomb of Ramesses V and VI
Source: https://tinyurl.com/yd2bfum2.

The Temples

Regarding to the temples, for both the exterior and the interior, the studies of archeologists and enthusiasts, and the many documentation arising from production of watercolors of David Roberts and other artists/archeologists in the
19th is key to reconstruct the chromatic component applied to dense drawings carved on columns (stems and capitals), trabeation, walls, pillars, external fronts.

Exemplary the case of Karnak (Figure 10), documented now in colors only by watercolors of Roberts, from which flows all the importance of polychromy, who had both emphasize the stories represented in units of the stems of the columns and walls, of the stems of the columns and walls, both to create fantastic and unreal, between where power and religion.

Figure 10. (Left) Karnak. Watercolours by David Roberts. "The Great Hypostyle Hall of Karnak Temple, built by Seti I and Ramesses II and Next a Hypostyle Hall." (Right) The Current Status, with only the Engravings of the Drawing on the Columns, Now Devoid of the Rich Colors

Figure 11. Luxor. Color Values in the Environment. Present, and Pictorial Tract of Interior Color Values at Present
Source: Photographs by Author.
Figure 12. (Up) Philae. Watercolours by David Roberts. Hypostyle Hall of the Temple of Isis and Details of the Decorations (Below) Environmental Situation and Bank before Moving to the Construction of the Aswan Dam
More to the east, the art of the world of Mesopotamia does not have the same homogeneous characteristics as Egypt because the alternation of peoples of different race and culture, but from the founders, the Sumerians, continues a tradition that permeates the development of the next artistic cultures. The Sumerians (2800-2016), the Babylonians (2016-1595), the Assyrians (1245-612), the Neobabylonians (604-562) and finally the Achaemenids (559-330) succeed each other.

In the Babylonian period, with the Semites (2016-1595), more than in Babylon, the main center, completely renovated at the time of Nebuchadnezzar, is the nearby city of Mari (brought to light in the excavations of 1933-1955), which in the imposing ruins shows the remains of the temples, and the great palace with valuable works, such as the bronze lions of the temple of Dagan and the stele of the famous Code of Laws of King Hammurabi. But, even more interesting, and rare, are the wall paintings, in the passages with sacrificial Scene, and an investiture, with few but decisive colors, that with expressiveness and elegance of the design confirm what is documented on the relationship between the Babylonian civilization and that, equally evolved, Cretan, in the same centuries.

In fact, thanks to the news written on the tablets found in the archives of the Mari palace, about the relations between the Babylonian and Cretan civilizations, the existence of commercial exchanges between Crete and Mesopotamia is certain, and it flows from the Syrian ports to export to Crete huge quantities of tin that the caravans coming from Mari brought to the coast after having crossed the desert.

Above all the posture and the representation of the figure and of the faces show a remarkable compliance: the bust is always three-quarters, the head in profile and the eye in front. All defined by a strong and dark line. But, in this regard, it’s necessary to point out that the same mode of representation the figure is also widely found in Egyptian culture, with which it is documented that Crete, in the neo-palatial period (from the late 17th Century B.C. until the first decades of XV century B.C.), a period of great political, artistic and
economic splendor, in which it assumed the role of main cultural irradiation center of the Aegean and the Mediterranean. Crete entertained important commercial relationships, both with Egypt (where they could freely exercise their activity with the consent of the pharaoh), and with Syria (in whose coastal strip they had bases).

Figure 14. Sacrificial Scenes; Mural Paintings of the Palace of Mari. Aleppo, Archaeological Museum. On the right, above and below, Details of frescos in the palace of Knossos: Cupbearer, and "The Parisian"


Between the 9th and 6th Centuries, the Babylonian art flourishes with Nebuchadnezzar II, (Neo-Babylonian period, 604-562 B.C.). The city of Babylon builds grand palaces with gardens, temples, towers-ziggurat; at the urban level, strong walls, documenting with few parts retained as Ishtar Gate (575 A.C.), the strong and vibrant color component resulting from coatings in light blue, blue and turquoise glazed tiles, on which stand out in horizontal bands lions, dragons and bulls in golden yellow, with, also, great chromatic effect that mark the great belt even from afar.

In 539, with the conquest of Cyrus, Babylon became part of the Persian Empire. With the reign of Cyrus II, the founder of the Achemenide dynasty, the great expansion began and it continues with the kings Darius, Xerxes I, Artaxerxes I and II, who carries the Iranian armies to Egypt and to the gates of Greece. If in large capitals shutters, Pasargadae, Persepolis, Susa, the grand palaces are richly ornamented with stone carvings that celebrate the grandeur of the Achaemenid dynasty, in some cases we find here also the adoption of Kassite relief and enameled bricks technique, like those that make up the beautiful and evocative Frieze of archers and lions, in Susa. The discovery, in Persepoli and Susa, of Greek ceramics and sculptures, which reveal the commercial and artistic relations between the two countries, is very important.
to highlight the relationship between the different artistic cultures, documented by the presence of Greek sculptors in the great building sites of the Persians palaces, mixed with various influences of local artistic cultures.

So in the East the importance of color is expressed especially in ceramic materials in bright colors (light blue, blue and green, yellow), either in monochrome, or in decorative patterns; colors that identify frequently domes and walls of mosques, tombs, or madrasas, as shown by some of the many examples of decorated surfaces with minute drawings ceramic materials of the Oriental world. This is transmitted and spreads in the Islands (Sicily, Sardinia), and in coastal areas of southern Italy traveled by direct Mediterranean routes to the Iberian Peninsula. In Sicily, where there are numerous polychrome domes with decorative drawings, often geometric, such as in Palermo, or in Naples, Amalfi and Positano, and also in the use of colored ceramics, as in the garden of the Convent of Saint Chiara.

**Figure 16.** (Top) Palermo. Sicily. Dome of the Church of Major Carmine and Dome of the Church of the Teatines (Below) Dome of the Collegiate Church of Morano. Calabria. Ceramic Domes in Positano, Amalfi, and Polychrome Majolica in the Garden of the Convent of Saint Chiara in Naples, which Show the Acquisition of this Decorative Practice
Figure 17. Samarkand (Top) Complex of the Mausoleum Gur-i Mir. (Middle) Domed Tombs (Right) Ulugh Beg Madrasa (Below) Bukhara. Chor Minar. The Four Minarets of the Madrasa. The Shah Mosque, Isfahan. Bukhara. The Landscape. Here is Counterpointed by Domes and Minarets that Identify the Territory and Culture.

Color and Decorative Features in the Phoenician Culture: Use and Characters

The Phoenician civilization is of fundamental importance in the history of ancient art, and for the topic at hand, for function that plays (ca. 2750 B.C.-550 B.C); in fact, this people of tradesmen and experienced navigators spreads Egyptian and Asian art throughout the Mediterranean basin, as from their coastal centers as Ugarit, and from the two large trading emporiums of Tiro and Sidone it exerts a strong and wide action for exchange and linkage between the various cultures of the people of Asian and African hinterland. Their artistic production was very greatly influenced by art of the countries with which they traded. In particular, the Phoenician influence, as well as Cretan one, in the formation of Greek civilization is also evidenced by the adoption by the Greeks of the Phoenician alphabet since the 9th Century B.C.

In fact, Egyptian, Assyrian, Hittite and Cretan influences are frequent in their works: mainly they are manufactured articles, mainly sculptures and reliefs, but also gold jewelry and metallic artifacts, of which there are notable examples. Important are the numerous gold death masks, used in the Mycenaean civilization,
which refer to the civilization of the Aegean world. A vast trade of bronze and gold existed (which are supposed to exist in real industries) with the exporting of products to all countries of the Mediterranean and the Middle East.

A network of techniques, styles, decorative features, materials, which is transmitted for knowledge and for actual spreading of the artifacts but sicuramente also for the mobility of artists and craftsmen in a sea so frequented by all these people. Instead there are not traces and findings of painted apparatus and colors, except for some small sculptures with traces of polychrome. Their art, even if not characterized by elements of particular originality, has, however, for the diffusion in this epoch, notable influence on the minor production of many close (Syria, Palestine) and very distant countries.  

Figure 19. Small Bas-Relief Artifacts, in Precious Materials or in Stone on the Theme of Navigation; Last one, the Bas-relief with an Assyrian Ship, of Phoenician Production

Colors and Decorative in Cretan Civilization-Mycenaean: Use and Characters

The Aegean civilization flourishes in the early 3rd Millennium B.C. in the Eastern Mediterranean area, and in particular on the island of Crete, in the Greek mainland and the Cyclades Islands, following the invasion of the city of Troy, (on the coast of Minor Aia – today’s Turkey), politico-economic and cultural centre of gravity between East and West, with trades and exchanges with the internal regions of Anatolya. The effects of this migratory event occur mainly in the introduction of both the megaron as unit in the central-northern part of Greece (Boeotia and Thessaly), and the use of metals (gold, silver, copper), giving rise

to the formation of metal civilization; in the first half of the 3rd millennium even by the interweaving of business relationships with Middle Eastern populations, which broadens artistic repertoire.\(^9\)

The invention of bronze (2400 B.C.), and the subsequent occupation of Indo-European peoples of Anatolia and Greece (2200–2100 B.C.) marked the takeoff of the Cretan civilization oligarchic and allow the King of the main cities of the island to promote an intense building activity (first palaces of Mallia, of Knossos and Phaestos) and acquire a significant power in the Aegean (2100–1700 period). Historical events immediately following the earthquake occurred probably in 1700 B.C., after about four centuries of invasion of Troy, the recovery and development of material culture and Mycenaean and Cycladic style, as is attested by the splendid palaces of Mycenae, Tiryns and Orchomenus, and the magnificent display of the frescoes in the residences of Thera (modern Santorini) that are the most elegant frescoes of the Aegean world.

These frescoes are characterised by sinuous lines, continuous but resolved that make alive, as at the time of the representation, figures, animals, plants, from strong decorative taste and color. Interesting then are the wide representations of landscapes and seaside city, which develops high sequential narratives compositional and decorative taste, accompanied by a playful symbolism. This valuable heritage of frescos emerged mainly from the excavations of Akrotiri, 1968, reporting a few examples relating to the Western House and the House of the Ladies (Figure 20).

The importance assumed by the Mycenaean and Cycladic centres, shortly after 1700 B.C., fails, however, to stop the growth of Cretan hegemony in the Mediterranean port: the latter, becomes permanently, since the mid of the 17th century B.C. until the first decades of the 15th Century unchallenged power in the Mediterranean, as B.C. testified from the presence of luxurious palaces rebuilt in neopalatial period or second palazzos, with joints and icnografici schemas that correspond to the needs of comfort and refined decoration fresco wall or plaster that adorn the rooms and large halls (Megara). At this stage the Cretan merchants taking and intensify their trade relations both with Egypt, both with Syria, and construction activity resumes characterized by a grandiose monumentality, perhaps due to oriental touches, therefore the reconstructed buildings and the many 'villas' built in the territories of their administrative relevance are distinguished by the refinement of composition.\(^{10}\)

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Figure 20. (Starting from top left) The House of the Ladies, Ladies Room, Two Female Figures (next) Naked Young Fisherman, by Combing Libyan Source (under) Young Boxers, with the Same Hairstyle. Next, a Young Priestess, African Features, and Two Gazelles, the Typology that Frequently Appears throughout the Egyptian Art. Underneath is the Long Frieze Known as the Libyan or Miniature Naval Expedition, which is precisely to Imagine a Story that Unfolds between the Sea, the Coasts and the Seaside city. This Fresco Fragments Saved from Three Walls was appointed by Subject (below, first) the Second City and Warships, Including the Flagship (second) The Rest of the Fleet and the Third Largest City. Under still a detail, most Valuable, the Representation of the City and the Natural Environment, both in Map and in Vertical Projection with its Elements, Architectural Forms and Construction Materials, including the Animals, that Inhabit the Land and the Sea


With the political rise of Knossos, Minoan culture expands into mainland Greece, the Cyclades, the Dodecanese, the Anatolian coasts, and even into Egypt and Galilee. In fact, refined Minoan objects are found in tombs in Mycenae, in the necropolis of Argolis and Messenia, attesting the Minoan presence in the Peloponnese. Stone vessels of Egyptian origin circulated in Knossos, while the scenes of the Keftûs in the tombs of the early XVIII Dynasty and the Minoanizing paintings that decorated the palace of Tell el-Dab‘a-Avaris confirm the close relations between the Minoan and Egyptian worlds. The pictorial fragments and a frescoed floor of the Palace of Tell Gabri in the Western Galilee are other evidence of direct relations between the Cretans and the Hyksos.11

11. Ibid, 74.
Figure 21. In these Two Reconstructions, the Composition, the Figures, and the Narration Clearly Show the Sacredness of the Egyptian and Eastern World in General

Mycenaean occupation of Cretan’s Cycladic territories, that took place around 1425 B.C., created rapid changes in political Mediterranean geopolitics, because now is the city of Mycenae holding the political supremacy in the Mediterranean, keeping it unchallenged over the next two centuries. The arrival (1200 B.C.) of different ethnicities, coming perhaps from the East, put an end to the political power of the Mycenaean civilization, but the gradual stabilization of the new invaders does not have the force to cancel the established tradition of the Aegean civilization renumbered by now constant reference in the process of formation of Greek civilization, giving a strong contribution to the development of an absolutely original art.

In the context of the Cycladic culture, the Cretan art show characters absolutely new and original. Symbolic and religious content abandoned tighter, using color and decorative features, extended everywhere in both the exterior and the Interior of the Royal palaces in their various phases of construction, as evidenced by those still preserved. Here the themes related to nature and festive life wildlife (flora and fauna) are shown with a short but lively colors, in immediate contact with those of nature.

The first Royal palaces of Knossos and Festos are erected at the beginning of the 2nd Millennium B.C. on the island of Crete; they went then in ruins around the 17th Century B.C., during the period of the first palaces or Minoan medium (ca. 2000-1700 B.C.) they are reconstructed as great royal palaces and, after being completely destroyed around 1700 A.C., they are rebuilt again.

From the point of view of landscape it is essential the placement in the environment, on a hill, served by steep stairs and narrow passages; corridors
and paved courtyards served numerous environments, distributed according to function, with a rich internal decoration, marble floors and painted walls.

But it is in the period of reconstruction of the Minoan palaces, the recent seconds (1700-1650 B.C.), original development of this civilization with great centers at Knossos, Phaistos, Hagia Triada, Mallia. The new palaces, that reuse for much of the facilities of the first palaces, have a plant even more complex, and are much larger than before; real architectural complexes, which stand in a relationship of continuity between architecture and territory, between man and nature. Planimetric systems of the neighborhoods surrounding the central courtyard have a greater compactness of the parties. Central courts, the hubs of the building continue to be held for bullfighting and surrounded by colonnades, stairs and corridors.

The importance on the environmental level of color component is demonstrated especially by what remains at Knossos: a lively polychrome, now mostly lost, only partly restored, enriched by frequent opening to the outside and the nature of the loggias and porticos with elegant wooden pillars in smooth trunk should taper down, circular, often painted red (sometimes fluted vertically or spiral), supporting with the widest part, the upper one, capitals pulvinus, or cube. The walls were painted, with various techniques; one consisted of the fresco technique itself; the other technique was to apply the colors on the plaster dry. Finally a particular technique is the inlay, which is to cut out, from the dry plaster, parts to decorate, which were then filled with fresh and colorful plaster.

It must be emphasized that in the frescoes figures of men and women, bulls and griffins, shaped in bas-relief, are often represented in real scale, as was the case in Egypt; technique that is probably stated between 1550 and 1470. Just the colors used, very lively and strong, both in the exterior and the interior, and easy to fact: red, ochre, black and blue, reinforced by the contrast with the green of the surrounding landscape and equally bold colors of sky blue, in immediate contact with the building, and with the rocky soil crisp clear sound component.

The subjects of Cretan wall painting, especially at Knossos, are often scenes of life: scenes of athletic games, ritual dances, religious ceremonies or personages, willing to profile, elegant and dignified, where there is the presence of sharp boundary lines marked by evident influence by Egyptian art, whose typical patterns seem to be inspired by the setting of the figure, with a three-quarter bust or opposite, the most representative view, legs in profile, to indicate a space in the proceeding solemnly in profile, but with an eye in front, that which gives maximum expression.

Another feature of these figures is chromatic differentiation, with dark skin color for men, and clear for women; a practice that also seems often used to distinguish the ethnic (Asian or African) origin of the figures, such as in the ritual scenes of the painted sarcophagus found at Haghia Triada, and in the palace of Knossos; a practice often used also in Egypt.
Figure 23. The Lively Polychromy in the Interior and Exterior, although Consisting of a few Colors, it Creates a Highly Harmonious with the Colors of the Natural Environment, which are also Strong and Shiny. The «Bastion Porch» at the Northern Entrance of the Great Palace, and the Detail of the Fresco with the Bull

Figure 24. The Interiors. West Wing; View of the Remains of the Monumental Propylaeum. Beside and under are the Colonnades of the Peristyle which Leads to the King’s Megaron and at Queen’s Hall, Painted with Geometric Motifs and Naturalistic (Dolphins). Under is the Throne Room. The Frescoes Depict Pairs of Heraldic Griffins, Facing the Throne, Yellow on Red Background in front of a Palm Tree, according to the Mycenaeans’ Taste. Assembly and Detail

Another reference to the Egyptian culture still originates from the palace of Knossos where, in the hall of the six columns in the upper floor of the western part was the fresco representing a moment of court life, with young ladies sitting on
folding stools, dressed in refined clothes (fresco of the *Blue Dames*), among which the female figure called the «Parisian» stands out. This fresco has been compared to similar Egyptian depictions of the New Empire, in an outdoor banquet scene.

The rich also interior decoration: halls with colored marble-floors, friezes above doors, walls lined with alabaster and colorful paintings clogs (red, yellow and blue: the primary colors or pure), together with black and white. The ornaments are both geometric patterns, such as spirals, cables, waves, circles, both architectural backgrounds in colonnade, or figurative, with, in addition to the figures, animals, flowers, plants, often inspired to the flora and fauna of the island: lotus flowers, lilies, crocuses, palmettes, or bulls, monkeys, partridge, but also marine subjects: fish, mollusks and shells on the island.

Figure 25. Museum of Iraklion. Bullfighting Scene Fresco, and Fresco of the Prince of the Lilies; Palace of Knossos. Fresco by Cupbarer with Rython. Female Figure known as «La Parisienne». Fresco of Blu Dames
Figure 26. Museum of Iraklion. Fresco of the Sacred Wood Arts, showing a Suggestive and Bucolic Representation of the Natural Environment. Representation of the City, very Abstract and Symbolic Way, but the Representation of Architecture and Life in the City is very Precise (Under) Ceramic Tablets from the «House of Mosaics». Knossos. Period as the New Palaces (1600-1500 B.C.). Tablets depicting Mesominoiche Age Houses are very Realistic, with Doors, Windows, Floors and Decorative Building Elements, and Colors.
The scholars, for the post-palatial period, with the Mycenean Conquery and the destruction of the Knosso Palace, testified that the other sites (Kommos, Haghia Triada), deep the exchanges with Cypro and the Syro-Palestinian territories.

Figure 27. The Colours of the Natural Environment and Local Stones Dot the Landscape where it is Placed, Harmonically, on Top of a Hill, but not Far from the Sea, the Building, in an Area along the Landscape of the Area. Theater’s Area. From this Point is developing the Regal Lastricated Road

Around the Grand Palace are other mansions and aristocratic residences, including the «House of the frescoes», located near the porch steps to the South of the Palace of Knossos, unassuming, but where there are multiple layers of valuable fragments of frescoes, where monkeys and blue birds are also represented. In another room were found fragments of vases rituals with double axe drawings.

In Mycenae, the spread of Cretan art on the Greek mainland is already around the 17th Century B.C., perhaps as a result of the close trade relations between the two peoples, documented by numerous items of Cretan production found in Mycenaean area. In the tombs of the ancient Mycenaean period many items of Cretan production were also found, which perhaps served as models for their nascent craftsmanship.

On the other hand also by the discovery of Egyptian artifacts at Mycenae and the Mycenaean pottery in Egypt testifies to relations with the latter country during the New Kingdom.

And if the repertoire of Mycenaean decorative motifs reveals the clear Cretan derivation, many iconographies and figurations show the inspiration to more distant models, typical of Middle Eastern artistic cultures.

While the scant remains of wall paintings, from topics such as treasure hunts, wars, religious ceremonies, the most basic and Cretan painting styles show schematic. In the late Mycenaean period (1400-1100 B.C.), the new palaces, which definitely fortified, enriched by extensive interior richly decorated with reliefs with «Megara», polychrome marble and murals, they appear again pleas Cretans as octopuses, dolphins, bullfighting hunts and ceremonies, but most often reduced to pure compositions schematic stylizations.

Unlike the other palaces (Mycenae, Thebes, Orcomeno), from the great palace of Nestor in Pilo ruins (Messenia), splendid frescoes and painted stuccos have emerged from the excavations, which, although only by fragments, testifies the original luxurious mural and floor decoration, so much so that, some scholars
put forward the hypothesis on the Minoan character of some solutions of the first palace of Pilo.

Especially in the representation of the gigantic bull in a procession of bearers of gifts represented in the frescoes of the room in front to the hall and in the scene of the bull offering present in the megaron hall; in the representation of the griffins associated with two lions at the bottom, that are facing by heraldic. They reminiscent of those in the Knossos Room of the Throne; in the representation of winged griffins similar to those that adorn the eastern hall of the Palace of Knossos.

Moreover, scenes depicting sacrifices of bulls and banquets were customary in the Cretan and Near East frescos. A bull sacrifice is represented in the sarcophagus of Haghia Triada; processions of bearers of gifts accompanying a bull to the sacrifice, are painted in the frescoes of the Palace of Zimri-Lim in Mari, in the Egyptian palace of the New Kingdom in Malkara, and in the Palace of Knossos. In the early 12th Century you experience the collapse of Mycenaean civilization.

![Figure 28. Reconstruction of Frescoes in the Palace of Nestor in Pilo](Source: Ciotta, 2013, fig. 223.)

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Colors and Decorative Features in Greek Civilization: Use and Characters

The Temple

In the Greek world the polychromy is used both in protective and decorative function, as on top of temples to protect wooden structures from the ravages of time and weather, continuing even with the use of stone building materials (sec. VIII-VII BC) and marble (from the 5th Century B.C.). From the 5th Century, the few colors till then in use-black, brown, yellow, blue and red-giromie are added as red and light blue, or green and red, contrast between complementary colors, to mark the various parts of the building and decorative elements.

The Greek world expresses the most taste for color in the temple; the color highlights the constituent parts: the column (stem and capital), the entablature and pediment; and decorative ones, the moldings. But while the columns often have bright colors, both of stone materials constituting and from the colors applied, are above all the decors of the entablature and pediment of constituting significant element, both in terms of color, as figurative that are sculptural cycles, painted with figures of gods, scenes and narratives of Greek mythology. Also the walls, mainly external, are often painted with figures of gods, often to gigantic size, heroic scenes or scenes of Olympus. So the colour is an important part of the architecture, which points out in its parts, and it operates an articulation for contrasts, often with few colours - blue, green and red and ochre.

Few but definite traces remain of this practice, on which has developed a very broad debate in the 19th Century; practice documented by surveys of the many Pensionnaires of the Academy of France in Rome, representing the Greek temples throughout the nineteenth century, until the early 20th Century, with a chroma key sometimes perhaps too pronounced in the excessive zeal of the discovery of the color. These testimonials, are rich and numerous, are confirmed by the numerous tracks on objects that can be seen in Museums, which show even today the fundamental function of color for the purpose of 'architecture', in the temple, but also in all other artistic expressions: sculpture, and painting, and in building materials, buildings and urban spaces. That is, color is fundamental in the Mediterranean world, and in particular in Greece where all the artefacts receive completion and meaning through the use of color. Just visit the Museum of Athens to realize it. On almost every artifact there are traces of the colors that completely covered every surface.
Figure 29. J. Carrey or A. De Vuez, 1674. West Pediment of the Parthenon. Drawing. The Blue Background is Evident, from which the Sculptures Stand Out

Source: Author (2017), from a Video in the Acropolis Museum, Athens.

Figure 31. J. I. Hittorff. Reconstruction of the Façade of the ‘Temple of Empedocles’ in Selinunte, 1851. A. Touraine, Detail of the Temple of Apollo at Delphi, 1894.
**Figure 32.** Olimpia. Pediment of the Treasure of Gela (Archaeological Museum at Olympia). Details of the Decorations Paintings of the Mouldings

**Figure 33.** Archaic Pediment Sculptures. One of the 'Small' Pediments, Recomposed from Fragments found in the Acropolis Excavation, with Evident Traces of Color. Represented is the Apotheosis of Erakles, with Hermes behind him
Figure 34. Athens. The East Pediment of the Great Doric Temple of Athena Poliás. (Parthenon Archaic). About 570 B.C. Acropolis Museum. The Poros Limestone Pediment Consists of Tree Ensemble. In the Middle are Two Opposed Lions Attacking a Bull, at the Left Edge Herakles Wrestles with a Sea Creature, Nereus, and at the Right Most Probably Zeus, whose Figure is Lost, Struggles with Typhon or the Three-bodied Daemon, a Creature with Three Winged Torsos and Serpentine Tail. A few Colors but Lively Show the Total Lively Polychromy of Sculptures


Figure 35. Detail of the Treatment in Polychromy of the Scales of the Newt

Source: Photograph by Author.
Figure 36. Acropolis Museum. Decorative Parts of Temples, Preserved in Classic Greek Decorative Shapes, Painted, very Elegant, in a few Simple Colors. Scale Motifs, Wave-bound Discs, Spirals, Petals
Source: Photographs by Author.

Colors and Coloring Matters
In the civil architecture, documenting this practice throughout Greece, rather than exhaustively in his strong chroma key, which often refers to the nobles, with the design and color, is the architectural type color treatment, imitating colored marbles, testified in the portion of the wall, reconstructed, preserved at the
Museum of Pella (Macedonia), referring to the 4th Century B.C., and the reign of Philip II (359-366). An extremely important document, which testifies to the connection between architecture and color, which has already reached a high level of culture and achievement. The same Macedonian tombs testify to the use of wall paintings and figurative scenes, already in the second half of the 4th Century B.C., the golden era of Greek painting, when the color enters forcefully into the definition of surfaces of temples, the construction of important buildings but also minor.

The Landscape and the Environment, Concerning the Chromatic Interaction of the Built with Spaces of Immediate Context, with Large Urban Areas, and Especially with the Shape and the Characters of the Surrounding Area; in addition, the Impact of the Built Environment

For the theme to the landscape and environment, the survey, different levels of reading, examines this relationship in the Greek world, the cases documented by pictures sent from France, the 19th Century's copious Pensionnaires until the early twentieth century. This report is well highlighted and expressed in representations of great landscape and environmental value of «Envois», mails
and packages. In fact, at all scales, as already the binomial environment and built both acknowledged as inseparable, particularly as sites of worship draw their expressiveness not only by geographical and environmental values of the land, to which they relate form and insert mode, but also by mutual colors. The view of the Acropolis of Athens indeed captures the relationship between the shape of the territory and settlement, which is emphasized by colors: first cold ones, that is, blue sky and blue sea, against which rises the town, situated in the plain towards the sea, at the foot of the ridge on which you have raised, as on a stage, the Acropolis, whose colors are burned by the light: an extremely charming, unicum as still appears from the top of Lycabettus Hill.


In Lindos, Rhodes, the upward movement of the main whitewashed cubic houses, climbing from the port towards the top, stands still, among the few patches of green, still preserved in the landscape, marked by the Acropolis, whose profile ends and stands still significantly from the Hill, although its facilities are only partially preserved. The watercolor painting allows you to compare the situation at the beginning of the twentieth century with the current one, 20th Century with the current one, pretty much remained intact, where in
the built landscape and nature are coordinated in a harmonious relationship and respectful.

For the closer distance other pictures documents the very important relation between built, territory, landscape, color, that did not escape to the scholars of the time. The high angle view, reconstruction of the Parthenon and its Esplanade; the prospectus in orthogonal projection of the complex seen from the sea; the overall East-West section, which relates the built the land slope, as the West façade of the Propylaea. Many representations show the inseparable connection between nature,
geography and topography of the area, especially in the buildings of a religious nature. The striking landscape linked to the presence of water (sea, rivers, etc.) also serves as a symbolic element, in addition to contrast, the colors of the built, along with the sky always brilliant light blue.

Colors and Decorative Features in the Etruscan Civilization. Use and Characters

The Etruscan civilization, which dates back to the 11th Century B.C. has a long period of development, with Apex around the 6th Century B.C. The complex and rich paintings of Etruscan tombs of Cerveteri and Tarquinia testify this practice already from the 11th Century B.C., and the development of Cerveteri culminates around the sixth century B.C. in relation to contacts with Greek culture and trade with the Phoenicians and Carthaginians.

This civilization begins its decline from the 5th Century, until in the 3rd and 2nd Century B.C. gradually to it overlaps Roman. Also the history of the Etruscan town of Tarquinia begins in the late Bronze Age and early iron age (IX-X Century B.C.).

As for the paintings of the graves in the Egyptian civilization, even the numerous Etruscan tombs still retain, though they too much depleted, a remarkable and valuable heritage of wall murals, painted in polychrome, with architectural and decorative motifs and almost constant presence of figures and symbolic animals. Basically these are the two richest heritage wall painting preserved from antiquity.

The oldest documents of Etruscan painting are some clay slabs painted, perhaps intended to cover religious buildings or graves, with strong influences of ionic and Corinthian painting according to the five Slabs Boccanegra, dated to 550 B.C., found in Cerveteri.

Two of the plates relating to the Etruscan mythology, with two monstrous creatures of culture, highly decorative, the Chimera and the Mermaid, as well as the Centaur and the Gorgon, of Greek origin, but also the three plates of processional character, enriched at the base by coloured vertical bands and over disc pattern linked to wave, are of interest because they resemble the geometry of the Aegean world.

The important Etruscan centers of Cerveteri and Veii retain the oldest production of tombal painting cycles, like the Lion Tomb paintings in Cerveteri and the Tomb Campana in Veio, dating from the 6th century BC, where there are influences of vase painting of Rhodes, in the grounds at palms and fantastic animals, along with those of the Corinthian and Ionic painting, constitute the main components of the archaic Etruscan painting (see below the Tomba dei Tori in Tarquinia).

The largest and most interesting documentation, starting from the middle of the 6th century BC, is located in Tarquinia, where the graves of the 6th and 5th century BC show a qualitative and stylistic diversity, some related to the simultaneous presence of local artists and of Greek origin, then outdated.
Prevalent topics of murals are scenes with great figures, often with animals and joyful moments of real life: banquets, dances, games, treasure hunts, fighting. Here are used, as in the Aegean and Cretan world in particular, fewer colours but lively and at odds with each other, often complementary, primary colours, and also that they create a pleasant effect over that brisk: red, yellow, blue (the latter in short fields because rare), and green, in addition to white and black. Warm tones prevail, from red to yellow, and even dark contour lines, black, are very clear. The figures, according to oriental use, the feminine ones are clear, and the dark ones are masculine, almost always represented with a three-quarter bust, and face in profile, but with an eye in front, as in the Egyptian and Aegean world.

In the oldest paints the colour is applied directly on the walls of Tuff; later on a layer of plaster, which sometimes ran a brief sketch, but it definitely wasn't a real "fresco" as described by Vitruvius in Book VII of his De Architectura. Among the most ancient murals of Tarquinia are those of the tomb of the Bulls (mid-6th Century B.C.), where the subject of Achilles approaches the ambush to the son of...
Priam, Troilo, who proceeds to horse, shows that the reference of the archaic Etruscan repertoire is still that derived from Greek mythological themes painted on vases, such as schematic style, influenced by the Ionian vase painting.

In addition, there is the purely architectural motif in polychrome marble slabs feints or alternating red and green tiles and light box, which can also be the only kind of treatment of the walls, as in the case of the first example of a very archaic, and it still appears in many other tombs as a type of decoration of the vault.

In the interior of the graves there are typical motifs of Egyptian tombs and smoother and imaginative motifs of Cycladic and Cretan art. Here too, as in the Egyptian world, you find a composition that adapts to architecture, and scans regularly surfaces and time, creating a unified, highly chromatic, decorations representing scenes and figures in a real space of symbolism unreal. In particular it should be noted that the ' eardrum ' that you create in the wall, because of the rise in time, almost always a barrel vault very low, often ferocious animals almost always addressed hosts, in pairs, like panthers, lions and leopards, which sometimes bite prey. The painting of the Tomb of Greetings, circa 530-520 B.C., is still guided by the ion, but with taste issues and iconography following Etruscan life and costume by now.

The painting of the Tomb of the lionesses, so named for the presence of two Panthers faced in the tympanum of the back wall, dating back perhaps to the 530 B.C., presents figures a banquet laid on beds, and dancers, and an interesting lower frieze in which small dolphins diving in the water are interspersed with ducks in flight, natural taste. In addition to the Tomb of hunting and fishing (520-510 B.C.), also with painted strong naturalistic, include the Tomb of Baron, always in Tarquinia, and the Tomb of chariots, rear, showing similarities to the attic red-figure vase painting.

The tomb of Leopardi, dated between 455 and 475 B.C., very well preserved, very bright colours both in thick figures in light and dark, which fund Banquet, and in walls and the vault, is very interesting because iconographically show the end for the taste for Ionic’s dresses, and on top of that the graffito preparatory drawing. The two big leopards faced stand out decoratively as the time all treated in coloured boxes from geometry that follows the slope of the roof. And with regard to the represented wild beasts, it must be remembered that the leopard is the animal that always accompanies Dionysus, the Greek God, who represents fertility and nature.

The Etruscan tomb painting of the second half of the 4th Century B.C., still shows the subjects in the Greek myth which often accompany images of demonic Etruscan deities, which progressively change the character from festive to dark and disturbing. The influence of Greek art is usually weak and late, except the famous sarcophagus of the Amazons found at Tarquinia, considered one of the highest and singular episodes of Etruscan painting. In the Hellenistic period the Etruscan painting is again sensitive to the Greek influences, as they show many tombs of Tarquinia, including the two Tombs of Orcus (between the 3rd and 2nd Century B.C.), the painting of the famous Tomb
of the Shields (mid-3rd Century B.C.), with Banquet Scene, leaning against a Cretan-wave range.
Colors and Decorative Features in the Roman Civilization: Use and Characters

From the Eastern world and Greek, whose painters also work among the Romans, this practice spreads across the Mediterranean and arrived in Rome, which has already been affected and in continuity with the nearby Etruscan culture, as evident from wall treatments, especially of the graves. In Rome earn great fortune and spread, even to the characteristic to be a not unimportant element of social distinction, and often political, of the client. And from Rome to the wider world as that of summer homes of Pompeii Herculaneum and Campania in General.

The Roman world also uses a lively polychrome, and decorative features increasingly complex following a remarkable evolution, and different relationships with the architecture (from simple sheet music to draw on the walls, painted fake and complex architectures at fictions plants of gardens with flowers fruits and animals such as the House of Livia on the Palatine, or paintings incorporated into the wall. These decorative types are well described by Vitruvius in his De Architectura Libri Decem, in chapter V "of reason of painting in gli edificij", that there is even to describe painting techniques and colors used.
Figure 45. Pompei (Top) Basilica. Current State (to the Right and Below) House of Sallust. Details of the Atrium and an Oecus (Under) Casa del Fauno and Other Types of Decorative II – III – IV Style, including the House of Venus in the Shell, and the House of Livia on the Palatine Hill in Rome
Source: Photographs by Author.
A valuable reference for both understanding and typological and iconographic interpretation than preserved this archaeological heritage and the painted facades that over the centuries have perpetuated these decorative patterns, particularly since the Renaissance, in the treatment of the exterior architecture, which still remain to mark the historic building heritage.

The XIX Century Iconographic Documentation: The Surveys

Figure 46. A Valuable Iconographic Documentation, both for the Number of Houses Measured, both in the Relief of Colors, but also Attentive to the Landscape Aspect, is that Produced by the Niccolini Brothers, Published in: Niccolini, F., Niccolini, F., Le case ed i monumenti di Pompei. Disegnati e descritti [Homes and Monuments of Pompeii. Designed and Described] (Reissued anast. 1854-1896) Sorrento (NA), Franco Di Mauro
Source: Photographs by Author.
The original colors were found in sites in their vials, along with the frescoes preserved, as well as at the time of the eruption, and analyzed by Selim Augusti and edited in: *Pompeiani colors*, De Luca Editor, Rome, 1967.\(^\text{13}\)

Figure 48. Pictures of Vials and Color Samples of Pompeii taken from: Augusti, S. Pompeian Colors, 1967 (From the Top) Tav. VIII – Tubes Containing Samples of Pompeian Colors. TAV. V-Tubes Containing Samples of Blues and Violets Pompeians. TAV. IX – Pompeian Red. TAV. X – Yellow Pompeians. TAV. VII – Purpurissum-Tav. II-Light Blue Pompeian in Beads. TAV. III – Light Blue Pompeian

Conclusions

As extensively explained for the different cultures of the Mediterranean world, the common themes and the relative modes of representation are now compared with respect to:

- The Egyptian Word and Cycladic civilization and Cretan.
- The comparison between the architectural decoration from Mesopotamia and Egypt, or from Babylon and Crete
- The artistic relation between Persian Empire and Greek word
A Treatment Modality of the Exteriors Recurring over Time in Mediterranean Countries

Analysis of wall treatments so far made leads us to record the occurrence of many decorative features, and especially the colors, almost always a few simple but lively, often the primary colors and complementary colors. One of the most interesting attitudes, readable since the ancient times, significant attitude, in painting, 'mimesis' real architecture, which is fundamental and recurrent, always is that of a type of apparatus that appears across the centuries and cultures of the Mediterranean, seen from the preserved widely.

This is the architectural motif, polychrome marble slabs-decorative faux stucco, then painted, used to mimic high quality materials, to cover both inside and outside of buildings; common theme that we find from the Aegean world, from Greece and Macedonia (Pella), tombs, the Roman world and, in particular, how preserved or documented at Pompeii and Herculaneum, which coincides basically with the first style of Roman painting described by Vitruvius.\(^{14}\)

In particular, the interest in decoration type I style, developed by the 2\(^{nd}\) Century B.C. until the beginning of the A.C., from 150 B.C. until 80 B.C., called “faux marble incrustation”, is motivated by the architectural objectives: that is, not only to feign masonry equipment materials, but to "do architecture".

Joyful and colorful architecture, which creates on the walls stucco encrustations worked in relief, then painted as horizontal slabs of marble, rusticated mock architectural elements of horizontal and vertical partition walls as columns, columns, pilasters, cornices, capitals and indented, smooth in few recurring red, ochre, and vivid colours: blue, green and purple, and then black and white.

This is found in many examples, from the famous ones of Pompeii of the Basilica, the House of Sallust, the House of the Faun, and many other buildings.\(^{15}\)

Another variant with more decorative purpose is the creation in painted color boxes, which somehow pertain to polychrome stone materials. Also, that even more decorative, is variegated marble painting representation, especially

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\(^{15}\) Ibid.
in the base of the wall, as in Pella, but even more in Crete, in the throne room of the Palace of Knossos; a type that will meet great fortune over the centuries, to form sometimes very high plinths and bases, in painted walls.

Figure 49. Italy. Etruscan Tombs. Polycrome Slabs Decorations Centuries Pretending Marbles or Decorative Boxes, also in the Vaults, or most definitely Painted. Red, Green, Ocher. Tombs with Artificial Painted Plates; Tomb Bartoccini, Tomb of the Lionesses and Tomb of the Leopards

Figure 51. Pompei. Italia. House of Sallustio. For this Building was carried out by the Author of Color Survey, in Situ, with Direct Method, with Samples of Munsel Book of Color

Main Surveyed Colors

red 10 r 3/10 but more saturated, tend to 10 r 3/8
red 10 r 4/12 discoloured
ochre 7.5 yr 6/8
green 7.5 gy 5/2
green 10 gy 4/2 darker spots legibles
wined dark red 10 rp 2/4
wined light red 10 rp 3/4
B – Figures Decoration: Criteria and Representation Modes of the Characters and of the Spatial Insertion of Human Figure in the Various Cultures

Here you want then waving, just a nod, another attitude, very important, spanning centuries and cultures, which concern the mode of representation of the human figure in ancient times.

Traveling from Egyptian world, and even before, which may appear naïve and lack of experience in the design, but in fact remains in different cultures as it responds to a precise purpose.

A way in which the bust is almost always three-quarters represented, and the face in profile, but with the eye in front, and legs still in profile.

In fact the three-quarter or front bust is fundamental for the identification of the represented person, and of its space, like the legs in profile, which indicate movement, and the face, though in profile, presents the eye in front, which makes the maximum characterization of the represented person.

This mode is widely found in the Egyptian culture, in the Babylonian, in the Cretan culture, and then in the Greek and Etruscan, all civilizations in close contact over the centuries.

Moreover, the figures, according to oriental use, are almost always clear, the feminine ones, and the masculine ones dark.
Figure 54. The Human Representation in Different Cultures of the Ancient World
Just a mention, instead, to the aspect, of the animals’ representation, that at a first recognition is offered to different considerations: for the recurrences in the types of animals represented (those of the Mediterranean and Eastern world) and the relative representative modes, often addressed to a very joyful decorative component. Dolphins in Knossos, in the Queen's Hall; dolphins in Tarquinia, in the Tomb of the Lionesses, together with gazelles. And then symbolic animals like griffins, sacrificial bulls, and above all wild beasts such as leopards, panthers and lionesses.
D - The Themes

Also the themes often repeat aspects of life, customs, religiosity, and environmental aspects of the different territories, even very far away. They are above all:

- Religious themes
- Sacrificial themes
- Political and self-congratulatory themes of the men in power
- Daily life themes
- War themes
- Themes on the nature and environment of various peoples

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Falzone: Color Architecture Landscape in the Ancient...
Reading the Transformations of an Urban Edge: From Liberty Era Palermo to the City of Today

By Vincenza Garofalo *

To honour the battle of 27 May 1860, when Garibaldi and the Thousand defeated the Bourbons at the Admiral’s Bridge and entered Palermo, decreeing the annexation of Sicily to the Kingdom of Italy, in 1910 the Palermo City Government decided to realise a commemorative monument. The site initially selected for the triumphal arch, in proximity to the theatre of the battle, was the quadrivium between Via Lincoln, Via Garibaldi and Corso dei Mille, near the Admiral’s Bridge, a symbolic site of the battle and now part of an Arab-Norman itinerary declared a UNESCO World Heritage Site. The successive location was, instead, very far from the former, at the far end of the extension of Via Libertà, one of the city’s primary axes, the first section of which had been completed between 1848 and 1849 by the Sicilian Revolutionary Government presided over by Ruggero Settimo. ¹ A position at the centre of a large circular plaza, yet to be realised – today’s Piazza Vittorio Veneto – with a diameter

Introduction

To honour the fiftieth anniversary of the battle of 27 May 1860, when Garibaldi and the Thousand defeated the Bourbons at the Admiral’s Bridge and entered Palermo, decreeing the annexation of Sicily to the Kingdom of Italy, in 1910 the Palermo City Government decided to realise a commemorative monument. The site initially selected for the triumphal arch, in proximity to the theatre of the battle, was the quadrivium between Via Lincoln, Via Garibaldi and Corso dei Mille, near the Admiral’s Bridge, a symbolic site of the battle and now part of an Arab-Norman itinerary declared a UNESCO World Heritage Site. The successive location was, instead, very far from the former, at the far end of the extension of Via Libertà, one of the city’s primary axes, the first section of which had been completed between 1848 and 1849 by the Sicilian Revolutionary Government presided over by Ruggero Settimo. ¹ A position at the centre of a large circular plaza, yet to be realised – today’s Piazza Vittorio Veneto – with a diameter

¹See C. De Seta and L. Di Mauro, Palermo (Bari: Editori Laterza, 1988), 150.
of roughly 100 meters, was of have afforded the monument a greater solemnity. The square was to have constituted the terminus of an elegant artery at the edges of the city, with the monument serving as a backdrop. The other roads leading into the plaza were to have remained secondary, to maintain a quality of isolation. The square was also to have represented the connecting ring with the Parco della Favorita and with the villages to the north of the city.

The Monument Commemorating the 27 May 1860 by Ernesto Basile (1909-1910)

The commission for the “Monumento commemorativo del 27 maggio 1860” was awarded by City Council in December 1909 to Ernesto Basile who did not conceal his concerns about the scale of the square, which he considered too large to host the monument, prejudicing its perception. Given the imminence of its inauguration, the monument was completed very rapidly, in little more than two months, by the contractor Salvatore Rutelli.

The monument designed by Ernesto Basile, constructed in limestone and white marble, consists of a large rectangular block, resting on three steps and framed at its two ends by two slightly taller pilasters, topped by decorations of garlands of leaves and woven ribbons, each surmounted by a cartouche and a crowning cornice (see Figures 1 and 2). The left cartouche bore the date 1860, the year of the battle, and the right that of its fiftieth anniversary, the year 1910.

2 In December 1909 Palermo City Council approved the construction of the square and the final section of Via Libertà, as far as Via Resuttana, according to the project by the engineer Giuseppe Autore. Due to bureaucratic hurdles, the works were assigned to the contractor only two months prior to the ceremony to inaugurate the monument.

3 Ernesto Basile (Palermo 1857-1932), son of the architect Giovan Battista Filippo, earned his degree in Architecture in Palermo, where he was later a University Professor and Director of the Royal Academy of Fine Arts. A leading exponent of liberty architecture in Sicily, “la sua influenza sulla cultura architettonica in Sicilia nel primo ventennio del secolo è assai grande, tanto da determinare il formarsi di una scuola che sopravvive alla sua morte e ritarda [...] la penetrazione a Palermo della cultura architettonica razionalista” (his influence on architectural culture in Sicily during the first twenty years of the 1900s was immense, to the point of creating a school that survived him and delayed [...] the penetration of rationalist architectural culture into the city of Palermo). U. Di Cristina, “Basile Ernesto,” in Dizionario degli Artisti Siciliani. Architettura, I. (ed.) L. Sarullo (Palermo: Novecento, 1993), 39. He was the author of many important works in Sicily, as well as in Rome and abroad.

The sculptor Antonio Ugo was entrusted with the realisation of the sculptural group for the base. It consists of two high-reliefs in large rectangular bronze panels, measuring 5.30 x 2.50 meters. The right panels symbolise “The Battle” and depicts a mounted Genio Italico leading the Sicilian people against the enemy. In the backdrop is a bas-relief of the Admiral’s Bridge, the site of the battle. This panel is completed by depictions of armed men leaving their women, children, animals and lands to head off to battle. The left panel symbolises “The Triumph”, depicting the Genio Italico bearing the symbol of Winged Victory and proceeding on horseback among the people and the survivors of the battle, preceded by the heralds of triumph. The procession is formed of a multitude of women, children and the elderly bearing baskets full of fruit, laurel wreaths, bunches of flowers and grain, symbolising the return to wellbeing, normality and reacquired freedom. The two definitive high-reliefs were installed only in 1930; in occasion of the inauguration of the monument in 1910, in their place were two temporary plaster copies, as there was insufficient time to cast the final bronzes.


At the centre of the monument, above a marble pedestal projecting from the base and placed atop a pyramidal stair of eight steps, is the 3.5 meter high group of bronze statues entitled “Sicily Joins the Motherland”. The sculpture consists of two allegorical figures of women embracing one another, which opens toward the plaza. They are clothed in soft drapery, with crowns of laurel leaves on their heads. The largest and most majestic female figure represents Italy, the Motherland. With a proud and solemn gaze, she originally held a sceptre in her right hand, topped by a crown of oaks around a star, while her left hand grasped a smaller and younger woman, symbolising Sicily. This latter figure presents a hint of a smile of trust in the future, thanks to the freedom reacquired. In her left hand, originally, was the symbol of Winged Victory on a globe.7

On the main elevation only, a host of festoons and ribbons completes the base at the centre of which, atop its own corniced base, is an obelisk, some 28.60 meters in height. Its quadrangular tapering section is visible also from afar. The plinth at the base of the obelisk is decorated on four sides by encarpus motifs of ribbons interwoven with festoons of laurel leaves and vertical palmette; the four upper faces feature garlands of woven ribbons and branches8 (see Figure 3). The primary face of the obelisk is inscribed with a commemorative epigraph by Mario Rapisardi, exalting the feats of the Thousand. “Splenda nella memoria dei secoli l’epopea del 27 maggio 1860, preparata da cuori siciliani, scritta col migliore sangue d’Italia, dalla spada prodigiosa di Garibaldi. Riecheggi nella coscienza dei

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7. Today, the largest female figure is without the sceptre and the star, and the smaller figure holds only the globe.

8. All of the ornamental parts of the base and the obelisk, realised in accordance with the drawings by Ernesto Basile, were engraved by the sculptor Gaetano Geraci (Palermo 1869-1931), a close collaborator of the sculptor Mario Rutelli.
popoli il tuo ruggito, o Palermo, sfida magnanima a tutte le perfide signorie, auspicio di liberazione a tutti gli oppressi del mondo.”

Figure 3. Preparatory Studies for Ornamental Parts: (left and top) Commemorative Plate for the Back of the Obelisk; Crowning of the Obelisk and Cornice of the Central Office; Decoration at the Base of the Obelisk; Crowning of the Pilasters. Perspective of the Monument in its Original Layout (by Ernesto Basile)
Source: Fondo Basile.

Ernesto Basile produced various studies for the monument that, despite small variations, clearly depicts the initial idea, translated into the final monument. One of his preparatory drawings also includes the study of a statue on top of the obelisk that was placed twenty years later.

Basile also designed and built the gardens of the plaza surrounding the monument, beyond which ran a circular road that delimited and concluded this space. The selected solution, among the various proposals advanced, featured a series of hedgerows with a geometric design symmetrical with respect to the two axes of the monument, with entrances in correspondence with the streets serving the plaza (see Figure 4.) This design was removed in the early 1930s to obtain a larger open space for Fascist rallies.

9. “Shining in the memory of the centuries, the deeds of the 27 May 1860, prepared by Sicilian hearts, written in the best blood of Italy, by the prodigious sword of Garibaldi. O Palermo, may your roar echo in the conscience of all peoples, as a magnanimous challenge to malicious domination and a hope for liberation from all oppressors around the globe”.

10. The drawing is conserved by the Fondo Basile, Scientific Collections, Department of Architecture, at the University of Palermo.

11. The design of this solution was adopted for the layout of Piazzale Alcide De Gasperi, situated 700 meters from Piazza Vittorio Veneto, along Viale Croce Rossa, in the north-west direction. The Piazzale and the section of Viale Croce Rossa, beyond Piazza Vittorio Veneto, were realised in occasion of the 1990 World Cup.
Figure 4. (From Top) The Definitive Plan of the Garden of the Monument Commemorating the 27 May 1860: Preparatory Studies (Redrawing by Vincenza Garofalo from Sketches of Ernesto Basile)
The Colonnade by Ernesto Basile (1931) and the Consecration of the Monument to the Fallen

In 1924 the City of Palermo held a competition for the design of a monument to Sicily’s fallen heroes, to be erected in a space to be identified between Piazza Vittorio Veneto, already home to the commemorative monument by Ernesto Basile. The first phase of the competition concluded with an ambiguous result and the decision was made to hold a second phase to evaluate six of the sketches presented to the first phase. The Brief for the second phase identified the definitive site for the monument inside the English Garden, along Via Libertà, a choice that would prove highly controversial. Not even the second phase produced a concrete decision. In 1927, a committee composed of the podestà, the prefect and the commander of the Armed Forces, directly awarded Ernesto Basile with the commission to realise the monument, selecting a site in the Parco della Favorita. In 1928 Basile designed an octagonal chapel with seven altars, though this version was never built. Finally, based on a proposal by the podestà, the decision was made to ask Ernesto Basile to transform and complete the monument he had already realised to commemorate the battle of 27 May 1860, adding an architectural backdrop that would also complete the plaza.

In 1930, in occasion of the celebrations of the XII anniversary of the victory of 4 November 1918, the monument would also be dedicated to Sicily’s fallen during the First World War. The top of the existing obelisk was thus crowned by a statue of “Winged Victory”, realised by Mario Rutelli between 1910 and 1911. When this bronze
sculpture, approximately 3 meters in height, was installed, on this same occasion, a showy *fasces* was placed in Victory’s left hand.\(^\text{17}\) Also substituted was the date 1910 on the cartouche of the right pilaster of the base, with the year 1918, the year the First World War ended. The rear façade of the base was fitted with two commemorative plaques in white marble, featuring a transcription of the war bulletin from the 4 November 1918, dictated by General Armando Diaz, calling an end to the war of 1915-18. At the centre of the rear elevation of the base, supporting the obelisk and markedly projecting from it, is a bronze plaque with a cornice, designed by Ernesto Basile himself, bearing the coat of arms of the City of Palermo at the top, to the left the coat of arms of the House of Savoy, and to the right the *fasces* with a dedication of the fallen from the First World War (see Figure 3).

Basile’s new project, in its first version, called for the completion of the monument with a continuous masonry and steel fence, separated by columns and tall piers. The fence, erected beyond the circular road, would have enveloped the entire square and the ring road, interrupted only by entrances near the streets flowing into the square, and dividing it into four sectors (see Figures 5 and 6).

![Figure 5. Monument to the Fallen: First Version of the Fence (Left and Top) Perspective and Study of a Sector (Ernesto Basile. Source Fondo Basile). (Right) Plan (Redrawing by Vincenza Garofalo)](image)


part of the complex, interrupted at the centre by a large gate that allows access to the square and to the back of the monument (see Figure 7). The two sectors of the exedra consist of a series of columns set atop a tall base accessed, from the concave part, via a continuous stair of four steps.

Figure 6. Monument to the Fallen: First Version of the Fence (Top) Views of the Front and Rear Faces of 3D Model (by Vincenza Garofalo)
The composition is completed by a continuous trabeation above which, on axis with the each column, are a series of truncated-pyramidal solids that accentuate the rhythm of the colonnade. The two circular sectors of the colonnade conclude with rectangular pylons, flanked by other columns atop which it turns back to conclude the trabeation with a soaring truncated-pyramidal solid. Along
the trabeation, in correspondence with alternating columns at regular intervals along the inner face, are the coats of arms of the eight Sicilian provinces, with the exception of Palermo that, together with other sculptural works, were realised by Nino Geraci. The coat of arms of Palermo is instead located on the pylons at the ends of the two sectors of the colonnade, alternating with the symbol of the fasces. The different elements of the colonnade were realised in Billiemi marble, bardiglio grigio from the Apuan Alps, Cosimo stone and Carini tufa stone.

Opinions of this addition to the original monument were not, in the majority of cases, positive. This delusion is probably due on the one hand to a progressive rigidity of the language of Italian architecture between the two World Wars and, on the other hand, to an inexorable impoverishment of Basile’s creativity, so evident in the low quality of the decorations.

Basile “reinterpreta, con elegante vena accademica, sue soluzioni precedenti, autocitandosi per i particolari architettonici e per i repertori decorativi (…). Ne è indicativo persino il silente ellenismo del colonnato di recinzione del Monumento ai Caduti a Palermo (già Monumento Commemorativo della Redenzione Siciliana) che nel 1931 chiude la sua attività. (…) È dunque un modo di procedere riflessivo, più che compromissorio, che forse è da intendere anche come consapevole (e probabilmente anche distaccata) volontà di conferma della validità della sua precedente propositività progettuale, a prescindere dalla idoneità a fornire aggiornate risposte affini a quei recenti indirizzi estetici dei quali non si sentiva partecipe.”

The New Urban Context

When the monument was realised, it was to have constituted one of the terminal elements of the city, for which no significant expansion plan were foreseen beyond the square. Moreover, Via Libertà, to which the monument was to have served as a backdrop, represented a principal artery and no one yet imagined that the other streets arriving at the square would have played a crucial role in the city anytime in the future.

The successive development of the city, instead, engulfed the square in the midst of tall and anonymous buildings, “melma edilizia che sarebbero i nuovi

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18. Nino Geraci (Palermo 1900-1980) was the son of the sculptor Gaetano Geraci.
19. See S. Dalia, Scoprire Palermo. Guida alla Città Moderna (Genova: De Ferrari, 1999), 149.
20. “reinterpreted his previous solutions in an elegant academic vein, referencing himself in the architectural details and the repertory of decorations […]. Indicative of this is even the silent Hellenism of the colonnade around the Monument to the Fallen in Palermo (formerly the Commemorative Monument to Sicilian Redemption) that, in 1931, ended his activities. […] It was thus a reflexive, more than a compromised way of working, that is perhaps to be intended also as a conscious (and perhaps even detached) desire to confirm the validity of his previous design proposal, regardless of its suitability to provide updated answers comparable to the recent aesthetic approaches that he did not feel he belonged to.” E. Mauro and E. Sessa (ed.) Collezioni Basile e Ducrot (Palermo: Mostra documentaria degli archivi. Edizioni Plumelia, 2014, 42).
quartieri medio borghesi della Palermo dei giorni nostri” realised, beginning in the 1960s, without any order of relations, stripping the surrounding fabric of its identity (see Figure 8).

While the new colonnade embraced and ideally concluded the monument, at the same time it separated it from the ring road around it, in reality causing its isolation and introducing a variation in the very perception of the square. Furthermore, Via Libertà is now a one way vehicular artery travelled ‘away’ from the monument, rather than toward it. This axis continues on the other side of the monument and becomes via Croce Rossa, a wide three lane road. The square itself is now served by other roads that reduce it to a traffic clogged roundabout. The square has thus become a ring travelled by cars and trucks heading in other directions (toward the city centre, the Parco della Favorita, the stadium, the area to

21. “a sludge of construction that would become the new middle class districts of the Palermo of today.” De Seta and Di Mauro, Palermo, 1988, 169.
The north, the Villa Sofia hospital, the bypass road) and the constant and obligatory centrifugal movement contributes to the perception of a space that is little more than an anonymous void. The circular path travelled by the observer conditions the perception as much of the square as the monument it contains, together with the dynamic hierarchy of the elements of which it is composed and those that define its edges. The square and the monument have lost their characteristic of being the terminus of an urban plan and their symbionic intentionality. Tall and dense trees, planted when the monument was realised, cover the view of the colonnade and contribute to the perception of a physical separation from the monument. The square has lost its architectural identity and its role as a space of coexistence and social relations. It is sufficient to consider that there are no pedestrian crossings from the external ring of the square toward the monument at its centre, which is left unnaturally void and isolated, except when it hosts official commemorations. There is no longer any continuity between the monument and the urban fabric, even if the collective imagination continues to identify with the monument and not with the space hosting it, to the point that Piazza Vittorio Veneto is commonly referred to by citizens of Palermo as La Statua (The Statue), in other words, a space of a symbolic representation that remains distant.

The Drawings of Ernesto Basile

The Fondo Basile, Scientific Collections, Department of Architecture, at the University of Palermo conserves a series of drawings relating to the Monument: 12 concerning the first configuration of the Monument Commemorating the 27 May 1860, 16 concerning the studies for the continuous fence, 20 concerning the Colonnade and the consecration of the Monument to the Fallen.22

For his drawings, partially signed and dated, Basile used pencil, charcoal, pastel, ink or china on various types of paper of different sizes.

The modus operandi adopted by Ernesto Basile was characterised by a great deal of attention toward drawing, through which the architect expressed and distinguished the creative moment of the concept and the phase of representation of the idea.

“L’approccio infatti al disegno e il conseguente ausilio dello stesso al concettamento dell’idea progettuale si costruisce attraverso un processo strutturato sulla successione di tre fasi principali nelle quali i supporti, il tratt e il tipo di rappresentazione adottata cambiano, anche in funzione di ciò che si vuole rappresentare.”23

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23. “In fact, the approach to drawing and the consequent support it offers to the development of a design concept is constructed through a structured process based on the succession of three main phases, during which the supports, the line and the type of representation adopted change, also in relation to what is to be represented.” P. Miceli (ed.) La “Professione” della Qualità. Cento Disegni a Matita di Ernesto Basile (Palermo: Grafill, 2008), 27.
The first phase corresponds with the creative moment when the idea is represented as lines, signs and decisive and strong sketches. During the successive phase, the idea is studied and defined; the drawing serves to verify choices only previously hinted at. During the third and final phase, which serves to verify and control the idea, the drawing extends to the level of detail.

The choice of the sign, the supports and the instruments of representation is commensurate with the importance of the drawing and its precision, with a “morbidezza del tratto per i particolari decorativi e per le linee di costruzione, precisione del tratto a grafite dura nel disegno dei prospetti e nelle linee di sezione, chiaroscuri a penna sulle prospettive, sui particolari decorativi e sui prospetti.”

This paper contains some of never-published original drawings, including a pencil one of the study of the proportions of the main front, dated 1909, which reveals a focus on symmetry and the correct correlation of the proportions between all the elements of the composition (see Figure 2). This drawing shows a possible application of the principle of analogy by Augusto Thiersch according to which harmony stems from the repetition of the same alignments between different elements to generate similar figures.

Preparatory studies for the decorations of the monument in Piazza Vittorio Veneto (1909) are, for example, drawn in pencil, India ink and ink, with an exceptional graphic style; the friezes are designed partially in detail, with shading and chiaroscuro effects. They permit a reading of the thicknesses and an understanding of plasticity; the symmetrical other half, more basic and simplified in the style of drawing, present the geometries of the construction and its dimensions. These drawings, which constitute the tools for considering and verifying design choices, also feature annotations, sketches and calculations.

In the perspective drawing of the original design of the monument, still without the colonnade, Basile used shading to emphasise the plasticity of the composition (see Figure 3). Also represented is the wall, evident in the design of its stone blocks. The insertion of a human figure at the feet of the monument provides the proportions and dimensions of the entire design.

The series of drawings relating to the fencing of the square were realised by Basile between February and October 1930. They represent several variants of the sectors, with different studies of pylons and pedestrian entrances. These drawings also include two versions of the general planimetry in which Basile indicates four streets that converge into the square.

The drawings of the colonnade also includes several variants, realised between 1930 and 1931, and details of the trabeation, the capitals and the moldings. One of the drawings represents the central gate and two versions of the side bays (see Figure 7).

“I disegni architettonici possono senz’altro esprimere di più che non l’architettura costruita. Tecnica, stile di rappresentazione, taglio, formato, segno

24. “Softness of lines for decorative details and for construction lines, a precision of lines in hard pencil for elevations and section lines, chiaroscuro in ink for perspective views, decorative details and elevations.” Miceli, La “Professione” della Qualità. Cento Disegni a Matita di Ernesto Basile, 2008), 28.

25. A. Thiersch, Die Proportionen in der Architektur (Stuttgart, 1904).
This is true, without a shadow of a doubt, of the drawings of Ernesto Basile.

A Survey of Current Conditions and the Representation of the Monument and its Urban Context

A simultaneous comparison of IGM (Istituto Geografico Militare, or Military Geographic Institute) maps at 1:25,000 from 1912, 1937 and 1970, reveals the important changes to the area of Piazza Vittorio Veneto and its surroundings over the course of almost sixty years (see Figure 9).

The maps from 1912 and 1937 already show the square, known as Piazza della Libertà, and the monument is already represented. Neither the streets orthogonal to Via Libertà and heading toward the square, nor the extension of Via Libertà behind the monument, were completed, and the street leading to Resuttana and Villa Sofia is still visible. The area had yet to be built up, with the exception of a few isolated areas. Via Libertà was also still largely unoccupied by buildings.

In the 1970 map, the area is now shown as massively built up in the wake of a strong push toward and beyond the square. The extension of Via Libertà had not yet been realised behind the monument, though this street is now lined with a continuous row of buildings, beyond which the city extends and branches out. The layouts of Via dell’ Artigliere and Via delle Brigate Verona are visible. The head toward the square and run orthogonal to Via Libertà, connecting the square with the entrance to the Parco della Favorita to the east and Viale Piemonte to the west. These streets were also laid out in the plan of Palermo from the 1950s drawn up by the Istituto Geografico Visceglia, in which the square already bears its current name.

26. “Architectural drawings can without a doubt express more than built architecture. Technique, style of representation, view, format, graphic signs, ductus, all illustrate the author’s intellectual intention. Drawings of architecture [...] acquire their own artistic value, and can in their own right be proposed as autonomous works.” V. Magnago Lampugnani, La Realtà dell’ Immagine. Dibegni di Architettura nel Ventesimo Secolo (Stoccarda: Edizioni di Comunità, 1982), 6.
The monument was represented, in its current configuration, as a Monge projection and in three-dimensional virtual reconstructions, based on a Structure from Motion survey (see Figure 10). Such techniques permit the extraction, from a set of photographs, of a point cloud (as by the use of a scanner laser) or a three-dimensional numerical model that maintains the colour values of each point, resulting in a more realistic overall effect.  

![Figure 10. Survey Structure from Motion (by Vincenza Garofalo)](image)

The pictures must be captured with the intent of ensuring an overlap between the images of at least 2/3. Dedicated software recognises homologous pixels in different images, identifying the spatial coordinates of the recognisable points and, after making the automatic collimation, generates a point cloud that is used to process the 3D model. From the knowledge of at least one real dimension, it is then possible to scale the entire object and obtain a 3D model that corresponds to the real form and size. This model can then be used to extrapolate all numerical information required, defining an ideal base for all future studies. Dedicated software performs photogrammetric processing of digital images and generates 3D spatial data.

This type of survey does not imply a choice of information during the phase of measured surveying, because the photographic a-critically document everything visible to the camera lens. It is during the successive phase of interpretation of the

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27. The point cloud is a very large set of points having $x$, $y$ and $z$ coordinates; if observed from a distance, the point cloud simulates a 3D representation of the monument.

28. The software can generate triangular meshes from the point cloud and superimpose a photographic texture extracted from the initial photos.
graphic result that the operator intervenes. In fact, this representation serves as the medium for transmitting an understanding of the real situation.

The survey involved a first phase of data collection and a second critical phase of integrating the information obtained in to verify observations and hypotheses. The model of Basile’s monument, from the Structure from Motion survey, presents a number of gaps owing to the presence of dense and tall trees set against the external part of the colonnade, which do not permit the full photographic coverage of the entire object of the survey. This required the integration of missing information through direct surveying and the elaboration of a reasoned model that has filled gaps with a critical attitude.

If the digital models here are cognitive systems, "data collection" of the different projects of Basile, the single views extracted from the 3D models allow the interpretation, communication and representation of the monument and the project.

It was chosen to represent three moments of the story of the monument and its surroundings by schematic plans, frontal views, axonometric projections and perspectives. These drawings, extracted from the 3D model, depict the monument designed by Basile and reveal the spatial dynamics with respect to the urban context.

To represent the frontal views of the fence project and the final version with the colonnade, the rendered views of the model of the first version of the monument were integrated with two-dimensional drawings of the later projects. As a simulation of the design moment, such views integrate the designed architecture with the built architecture, maintaining the distinction between the two moments. Perspective representations, adopting "human eye height" points of view, provide more information on the perception of the monument from the road.

The original version of the monument in 1910, even without the current colonnade, is revealed in 3D model views in all its space force. The monument stands alone in the center of the square and this isolation gives it dignity and solemnity (Figure 11). The assonometric view reveals the clear integration between the organic language of the garden and the solemnity of the compositional lines of the monument.

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29. If the point cloud presents many gaps, the automatic calculation generates incorrect surfaces from the geometrical point of view. Therefore, further elaborations are needed to make "effective" the finished model.
Figure 11. The Monument and the Urban Context in 1912, 1937 and Today's Configuration. Axonometric Views of 3D Model (by Vincenza Garofalo)

The views of the 3D model of the fence reveal the fragility of this project, which seemed less evident in the original drawings by Basile. The perspective views show that the fence appears too small compared to the general size of the square and the height of the monument. This solution was never realized because it was probably considered incapable of embodying the sense of a Monument to the Fallen, as well as ideologically imagined by the common sense and the need for officiality of the City Government.

The latest configuration shows that, at the time of its construction, the colonnade was a sign that underlined and surrounded the monument and ended via Libertà in an ideal hug.

The axonometric views and perspective of the current configuration show that the colonnade appears as a physical separation filter and show the loss of identity of the monument incorporated in an urban space with no more quality, among overhanging buildings that overlook it in height.

Conclusions

Through the analysis of Basile’s original drawings (1909 and 1930) and the representation of the modifications made over time, this text proposes an original reading of the configuration of Piazza Vittorio Veneto and the Monument to the Fallen, in relation to important moments in its history, from its design to the present day.

For this reason the survey SfM has been carried out to realise the digital model of the current state. It was useful for the knowledge of the geometrical-morphological data of the monument, from which its past or never realised configurations have been redrawn.

The study of Basile’s drawings and historic maps and photographs served to construct a digital model that includes a hypothetical reconstruction of the immediate area around the monument. The three-dimensional models reproduce the monument and its surroundings at the time of its construction in 1910, based on the first version for its expansion (unbuilt), with the addition of the exedra from 1930 and in its current condition (see Figure 11).

These digital models make it possible to represent configurations of the monument that no longer exist, or which were never realised, together with hypothetical reconstructions of its immediate surroundings that, already at the outset, possessed their own autonomy with respect to the current city. Exploring spaces and volumes that no longer exist, they are unable to express any mimetic relationship with reality.

The redesign and extrapolation of different views of the digital models also provided original images of use to new readings of the perception of this space. They are not intended as efficacious three-dimensional illusions, but merely serve to aid the comprehension of the object of study.
The drawing cannot be considered as the equivalent of architecture and cannot take its place: it tends to explain it and to reveal its historical and theoretical structure, it allows the careful reflection on the architecture of history and memory and on that of desire and invention.  

Acknowledgments

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Experiencing, Knowing, and Building Architecture

By Rui Manuel Reis Alves*

Introducing the theme of experiencing, knowing and building architecture necessarily departs from key references outside architecture’s realm. The studies of António Damásio on the link and interdependence between mind and body, and the influence of the instinctive and body mechanisms over rational processes – namely in what it relates to the creative process (J. A. Marina) – as well as the body of knowledge on the phenomenology of perception by Merleau-Ponty, are then the core sources of my positing: architecture, being a physical and mental phenomenon and a mind-body experience, becomes a reflection of how the human being connects to the outside world; it delivers visibility to what remains otherwise concealed in other areas of knowledge - perhaps due to a tendency to simplify conceptual models throughout the creative process in architecture. Whereas other areas of knowledge are traditionally linked to rationality and science, or intuition and arts, architecture’s creative process was always hazily thought about or deemed ‘confusing’. Taking into account the references above, we can say that architecture’s creative process – or a project-based reasoning – is not in essence different from other disciplines. What differs is the object and work processes. Relating both rational and instinctive processes in the ‘creative act’ is then found to be part of the interplay between the memory of sensorial images and lived images. This lead me to highlight the importance of sensitive experience in both the practice and teaching of architecture – in sum, sensitive experience is here thought as the foundation for creative memory and creative inquiry or, in other words, real knowledge. A number of projects will be used to examine in depth what I have posited above. With selected works of Álvaro Siza, Steven Holl, Peter Zumthor, and Le Corbusier, I will try to illustrate this apparent

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1. António Damásio (1944), Portuguese neuroscientist, professor and researcher at University of Southern Califórmia, Known for his studies on the brain and human emotions. Major works include O erro de Descartes (1994), O sentimento de si (2000), and Ao encontro de Espinosa (2003).

2. José Antonio Marina Torres (1939) Spanish philosopher. Author of the theory of creative intelligence and one of the main thinkers to put forward the cultural paradigm of “ultra-modernity”.

3. Maurice Merleau-Ponty (1908-1961), French philosopher of the phenomenology strand. Merleau-Ponty was a high-school teacher before WWII during which he served in the French army. He became a professor at Université de Lyon in 1945 and, from 1949, at Sorbonne. Influenced by Edmund Husserl, however, always grounding his theory on the body and perception. Author of Phénoménologie de la perception (1945), Le visible et l’invisible (1964), and L’œil et l’esprit (1985).


5. Steven Holl (1947) American architect. He has remarkable work has an architect, like the addition to the Nelson-Atkins Museum of Art (2007), Kansas City, Missouri, the Kiasma Museum (1998), Helsinki, the Chapel of St. Ignatius (1997), Seattle University; but he also has written works
dance between lived images and memory levels vis-à-vis the rational-instinctive and body-mental process of experiencing, knowing and building architecture.

Initial Considerations

The notion that the body is dependent of a mental existence seems to influence the separation of the ‘mental’ process of designing and interpreting architecture from the more physical processes, be it construction, or the more immediate confrontation of the human body with the ‘built mass’ of a building or site. Here, we resort to ‘built mass’ once it is directly and firstly presented to us before any other aspects such as light and configured space, for instance.

Indeed, the value placed on architecture as a physical object was never made secondary – large scale buildings or built landscapes have always been ‘impressive’. However, mental and physical processes eventually became more disjoined. In a way, mirroring the changing role of the architect – one that designs but does not build – that in no doubt accompanied the separation of the design act from the construction process, a proclivity brought about by the Modern Era. Generally, this historic evolution resulted in the clustering of conceptual disciplines around the design process – drawing, perspective, projections, geometry, and the emergence of architects of the un-materialised among which Giovanni Battista Piranesi was the most paradigmatic example. These developments accompanied a technological evolution and the specialisation of the so-called construction sciences which, in their own category, also went through the separation of knowledge from execution.

Engineers became the holders of technical knowledge whereas architects were tasked with architecture’s artistic conception once architecture was considered one of the Beaux Arts.

This Cartesian conception underpins the separation, in architecture, of thought or idea (the abstract, mental process) from everything concerning the body (the human figure and its extension). Hence, construction and space were thought as a consequence of the idea.

Descartes himself, to demonstrate the veracity of deductive reasoning – the ordering from premise to conclusion in a sequence of linear logic - resorted to thoughts of mathematics and geometry.

Sensory experience became largely undervalued vis-à-vis the ideal construction – the ‘truly’ abstract process in architecture (geometry and metrics) were thus singled out from anything linked to the senses. The value of architectonic creation was placed only in those aspects closer to the idea.

like Questions of Perception, Phenomenology of Architecture (1994), he wrote with Juhani Pallasmaa and Alberto Pérez-Gómez. He is also a watercolorist.

The notion of ‘architectural space’ first articulated in the XIX century and further developed throughout the 1900s did not interfere with this proclivity to value architecture’s geometric nature over its sensory materiality and qualitative experience. Louis Sullivan’s own words conveyed this platonic and Cartesian conception when he stated not be troubled with the eventual physical disappearance of his works because “It is only the ideas that count.”

However, phenomenology and the much later research developed by neuroscientists, prominently by António Damásio, came to challenge that long held duality.

Now, this fact was long known in the natural sciences – mind was related with brain activity and it was long understood that the body homes the brain and there is a mutual interaction. By bringing new insights about how the body influences mental processes, the work of Damásio greatly helped to place such dual conception on the spotlight - conception which, however, continues in the present.

We can draw a parallel with architecture. Beyond the exposed relation between architecture as an abstract construct vis-à-vis built-architecture (and also the relation of thought and the sensory experience of architecture) it is not surprising the hold of such duality. In addition, the value placed on the confrontation of the human body with the built landscape or object is often overlooked whereas image and virtual representation are strongly highlighted.

Souto de Moura once said that the thought in architectonic design is not a conceptual one⁹ - I endorse his stance. Indeed, if we cannot disentangle the mental process from the physical or bodily experience of architecture then, in the same way, we cannot think architecture independently from its material reality – as an artefact, or construction. Although there is a conceptual part in the design of architecture but, even so, it stays related with the sensory realm.

These two aspects are not always found in perfect balance in an architecture object. Other architects place more value in logic and the intellect and much less in the sensory experience and perception.

“Le Corbusier is one of the few architects who never suppressed the call of the senses and thought. He always kept both in a balance and, in that way – though we can find this with other architects too – while the intellect civilises the sensory part, the latter actualises ‘civility’. That is his most salient

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7. Prominently in the theory of space by German art historian August Schmarzow (1853-1936) first voiced in the 1894 – A. Schmarzow, Das Wesen der Architekttonischen Schöpfung (Leipzig: Karl W. Hiersemann, 1894); and also in Alois Riegl's treatise – A. Riegl, Die Spätromische Kunst-Industrie nach den Funden in Österreich-Ungarn (Wien: Österr Archäologisches Institut, 1901). This idea of an (interior) architectonic space, highly significant for architecture throughout the XX century, considered the three dimensions but not the moving body in space.


9. Interview to the Público newspaper in the 90s.
message. Precisely, the conceptual argument never suffices as a pretext. It always needs to be re-interpreted anew in light of its perceptive aspects.”

The Body Homes the Mind: The Body’s Influence over Mental Mechanisms

In his works, António Damásio has demonstrated his thesis according to which, and contrary to traditional conception, we cannot consider mind and body as separate entities – if the body and brain constitute one single organism, we can then say that the mind is in the body more so than in the brain; consequently, the mental process is a biologic one as other biologic processes in that same organism and, as these, shares the same objective: first and foremost, to survive and maintain the body’s wellbeing.

Therefore, the body strongly influences the mind’s contents while the opposite seems to be less relevant. We have to consider, however, a certain autonomy of the mind which remains as if ‘inaccessible’ to the body – we can recognise the existence of a mental process that is, to some extent, independent from the environment and body; although, again, even this stems from the human organism interacting with the surroundings, in other words, this is the make-up of mental images being formed through perception. These images are recalled through memory and, to their reconfiguration, we call imagination.

Memory and imagination are closely linked processes: both depend on the ability to reconstruct mental images from mechanisms imprinted in the mind at the moment of perceptive experience – something Damásio calls “neural patterns.” Damásio explains that every mental image leaves an imprint and this becomes the true repertoire of our knowledge-formation – it stays dormant waiting to be activated by one or other trigger. Knowledge is both innate - instinctive, corresponding to the body’s regulatory mechanisms existing at the inferior levels of the brain – and acquired – in this case, neural patterns are located in the upper levels of the brain.

Imagination is then the possibility to reconfigure or relate the summoned images – to relate involves both rational processes and involuntary ones in what Damásio terms “somatic markers.” In Damásio’s thesis, memory constitutes the essential mechanism, one of the most important capacities of the mind, essential to survival.

Moreover, the influence of the body upon the mind was found to be at the same level as the so called rational processes, namely when we choose and take decisions, and even when we create something. Creativity, if following Damásio, is enacted by memory and the “somatic markers” as they ‘mark’ our past

13. Ibid.
experiences, be they positive or negative. They are activated or resurface by particular stimulus. Physiologic and mental reactions ensue and what emerges is what he calls a ‘sentiment’.

And this the origin of intuition, fundamental in decision-making, choosing, or in all processes implicated with creativity – in particular, in the making of connections between apparently unrelated things or foreign something succeeding only by the action of “somatic markers”. The latter are thus intimately linked to our personal experiences and the imprint left on us. Such process was developed for human survival and is constantly re-enacted for other purposes and in many functions.

For Steven Holl, in regards to architecture, the sensitive experience opens us to perception which then guides us to multiple, possible meanings. Perception allows us to reach an internal lifeworld and, through it, we can discover the sheer brightness of the outside world. Le Corbusier also made reference to something similar. In both, intuition is taken as the guide to that elusive internal world through which architecture is able to communicate meaning. Far from Merleau-Ponty’s “raw knowledge” equated to perception, Holl differentiates architecture from pure phenomena based on the “intentionality” contained in the architectonic object.

To Design: Discernment and Intuition

“To a large degree, designing is based on understanding and establishing systems of order. Yet I believe that the essential substance of architecture we seek proceeds from feeling and insight. Precious moments of intuition result from patient work. With the sudden emergence of an inner image, a new line in a drawing, the whole design changes and is newly formulated within a fraction of a second. It is as if a powerful drug were suddenly taking effect. Everything I knew before about the thing I am creating is flooded by a bright new light. I experience joy and passion, and something deep inside me seems to affirm: “I want to build this house!”

In Peter Zumthor’s account we can see that same mechanism described by Damásio. Even when the architect states that the design process is for the most part a rational task – to discern and to order – he comes around admitting that the true and key substance is emotion; in other words, a mechanism of physical, sensory, and bodily nature.

Peter Zumthor confirms the phenomenon, if you will. At times he finds himself “under the effect of some strange drug”. For brief moments, rational control drops off...we’re blindsided by the whole thing. Precisely in those moments, instead of disorder or disfiguring, the project is re-routed to another

14. Ibid.
level of calibration, another level of meaning, all without the workings of any logical process. Perhaps could not be otherwise because, as Damásio explains, deductive logic is not sufficient to solve a problem whose variables are too complex or where data is incomplete.

This is nothing more than the same mechanisms which allow us to deliberate and choose in everyday life without a thorough analysis of every variable, otherwise we would be stranded and any choosing would be impossible. The same evolved mechanism allows us to make decisions based on incomplete data and relate things which would seem unrelated or foreign. This is the principle of intuition – results from the action of what Damasio calls “somatic markers” allowing us to summon former experiences in a quasi-automatic fashion. In all this, for the architect in that moment, there is a sort of ‘clear insight’ - to be on the brink of a solution to a problem always stirs passion and joy. Emotion, once again, guides us to know what is right.

Siza Vieira accounts that, before he jumps into any complex and thorough process of analysis say, of a complex functional programme and project, he immediately draws a sketch as soon as he gets an overall picture of the programme and site.\(^\text{17}\) It does not mean, however, that the solution is reached by intuition or otherwise casually; instead, what happens is the mind can make connections, sometimes surprising ones, and point out solutions based on incomplete information. Moreover, the more data we have the more difficult it becomes to find said solution. For that reason, the mind foreshortens the search with options to be tested and further confronted with the deductive process – complete data is not necessary at this point because stimulus help to summon those images stored in our memory through our lived experiences.

For the North-American architect Steven Holl, who normally identifies with Merleau-Ponty’s phenomenology, the approach is quite different: in a conscious fashion, architecture is built from an idea or concept whose phenomenological potential he sets out to explore in the project and in built architecture. Singularly, a relation is established between the mental and physical aspects of architecture.

In the interpretation of any architectonic place, the first gauge of information is always disperse and place-bound. It juxtaposes and accumulates but, further, we are able to gradually elaborate a system of relations – the basis of a synthesis and understanding of the architectonic place as a whole. According to Steven Holl, the system of relations exiting in the architectonic place is something arrived at intentionally during the project and this can only be understood introspectively and intellectually.

For Holl, the crux of this process is in the subjective link (or inter-subjective, of who experiences and who designs) between perception and the conceptual logic guiding the project. This is the case in one of his most prominent works, the Kiasma Museum in Helsinki\(^\text{18}\) (Figure 1). Different concepts are here intersected, such as the concept of quiasma – the intertwine of body-world (Merleau-Ponty) –

18. The Kiasma Museum (built 1996-98, Helsinki) resulted from an architecture competition open to Nordic architects and to four specially invited international architects, among whom was Steven Holl who eventually won.
symbolically related to the building’s location in the city, and also the concept of parallax – a scientific notion taken by phenomenology to study the phenomenon of perception with the human body’s movement in space – which manifest in the spatial experience of the interior intentionally putting us in a sort of unbalance with the distorted perspective of the slight folding of the walls and surfaces.¹⁹

Steven Holl refers to his use of concepts - stemmed from various disciplines and symbolically mirrored in his architecture – as a method to stimulate his creativity and escape from a language of forms or what could turn into a shallow manipulation of formal repertoires.²⁰

![Figure 1. Interior of the Kiasma Museum (1996-98) in Helsinki, Finland. Steven Holl](image)

*Source: Author, 2009.*

**The Mechanisms of Creativity and Architecture**

José António Marina²¹ articulated the relation between those mental processes and the mechanisms of creativity based the testimonies of writers, scientists, and artists as a case study. His findings show that it is possible to understand how, for us to make actual use of the mental processes subordinated to creativity; we need to use particular tools. The reason why we establish objectives, draw strategies,

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and search schemes and also why we feel the need to gauge results and redefine objectives throughout an often long creative process which, nevertheless, always advances in stages.

Marina explained the relation between perception and creativity, also between the simplest mental tasks and the most complex. The way we approach the world and worldly things - there lays the seed of creativity. In the most mundane action, such as sighting, looking at a random thing, begins the capacity to produce something extraordinary because, as Damásio put it, the imprints of mental images resulting from our interactions with the environment and the way we relate those images in accord to our experiences, constitutes our own-made knowledge.

We can relate Damásio’s and Marina’s theories with the experience of architecture and the processes that organise and stimulate creativity. At this point, based on their conclusions, we can understand that the mental processes enacted by the perception of an architecture object and also in its creation are not, in essence, different from those generally used in the perception of everyday events and creativity in any realm – the distinction lies in the work process and its object.

The so called ‘architectonic thought’ comprises the use of methods and specific instruments to attain a very precise objective – the architecture design. Beyond this, said ‘thought’ resorts to the same mental mechanisms that we all use in the everyday and infinitely adapt and re-work in varied creative tasks.

Proved, as it were, that mental activities are built from the relation between organism and environ, and also the influence of the body upon the mind, concurs with the positing of Merleau-Ponty elaborating on the phenomenology strand. Merleau-Ponty suggested that perception constitutes the base of all reflection in the collusion of body and world. This presented a breakthrough from the traditional conception of Cartesian origin, particularly in regards to the belief of human subject and object as opposites. Even though Merleau-Ponty’s questioning aimed at the essence of knowledge, his defence of the value of the senses of the body and our most basic relationships with the world, accords with Damásio’s conclusions.

The different areas of the brain are deeply connected and work together. Moreover, there is dominance of the sensory processes (or mechanisms created from the body) over mental processes.

We have to consider, however, a certain autonomy of the mind which remains as if ‘inaccessible’ to the body – something we can perhaps call the domain of intelligible. Yet, the sensory (if designating the whole of mental processes related to the sensory system) exerts a key influence even in the more ‘rationalised’ processes, through what Damásio designates “somatic markers” – these can be equalled to “intuition”.

22. Ibid.
According to Damásio, this is origin of creativity, i.e. the intuitive establishment of relations and connections between apparently unrelated things. Fundamental to artistic and scientific creation, creativity derives from processes originally developed for basic survival; the same are active beyond the fulfilment of basic needs as in the personal and social realms.

Thought is based on the permanent interaction of the organism with the environment. The latter feed the formation in the mind of images not just visual ones but all across the five senses – these images are the basis of thoughts. In other words, every thought stems from images originated in the sensory system. They can also be built by the mind through those mechanisms activating neural patterns related to images formerly produced. In the summoning of images – by recalling or imagining – a reinterpretation of existent patterns takes place; such reinterpretation is always fed by images formed ex ante.

The mind produces images from the sensory system and also has the possibility to summon images from patterns previously formed in the brain.

The sensory system does not function without the brain or the mind (where images get to be formed). And so, the mind is dependent of the relation to the environment mediated by the sensory system (the basis of thought proper). The idea that the brain can function autonomously is, therefore, discarded.

None of these types of mental operations differ from the ones used by the architect throughout the design process. We have to acknowledge that the cornerstone of the capacity to think in architectonic terms is the capacity to form images of an essentially visual nature.

And yet architecture goes well beyond the strictly visual universe. Not least because sound and audition is involved (hence, audible images are formed or summoned when the architect is creating) but also because architecture calls for a tactile relation, both direct or indirect; for instance, the texture of walls and other surfaces, the materials, communicate tactile sensations through sight or through the movement of the body in space. However, visual images are prominent, the main structure to which other images of a different nature come to ‘fit in’ if you will.

The formation of sensory images is, according to Damásio, the basis of any type of reasoning. In that sense, the ‘architectonic thought’ does not differ from other thoughts – it is not a specific nor a particular type of thought.

In all likelihood, there are no specific thoughts for different knowledge areas as Marina puts it. All knowledge areas find support in the same mental processes. With that said, we can perhaps suggest that what might foster the capacity to think in more ‘architectonic terms’ is the build-up of an architectonic memory - to relate a hazy repertoire of images and to give structure to space becomes the key aspect of architectonic creation.

Memory, Imagination, and the Architectural Design

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“When I concentrate on a specific site or place for which I am going to design a building, if I try to plumb its depths, its form, its history, and its sensuous qualities, images of other places start to invade this process of precise observation: images of places that I know and that once impressed me, images of ordinary or special places that I carry with me as inner visions of specific moods and qualities; images of architectural situations, which emanate from the world of art, of films, theater or literature.”

“If I lived this or that, then many things remained and then tend to show up again unconsciously. In the making of architecture many things come from the unconscious. Things that are part of us and lead us to search towards a particular direction. Our mind is also a storage accumulating more capacity the more it is used. In the case of the architect, this store-house is made of accumulated information, ever widening, of what you see and study. And what you see are cities, movies, paintings, people… Literature, music, everything! Literature is so linked to music, to sculpture and painting, to ballet… Back in the day we would start with focusing on a person and his or her work. Afterwards, we would start to know more of this and that, to widen. At some point, we’re not copying anything; we have some much information that it becomes part of us. Pops up when needed. Shows up because it is in us.”

In both Zumthor e de Siza’s accounts, we see the importance of memory as a recurring tool, a potent weapon in the arsenal of creativity. Science demonstrates memory to be the basis of intelligence. Brain functions – from directing body motions to perception and creative activity – imply a constant access of the mind to memory, to stored knowledge. Such knowledge can be so deep as if it is already “part of us”, as Siza said. Further, it allows us to understand reality with different levels of depth according to our own knowledge and through mechanisms unaware to us. It reconfigures constantly establishing new links in an act we can compare to digestion. The more ‘usable’, ‘digested’ knowledge, the more creative we get. Seemingly, this is the true source of human creativity.

For instance, Peter Zumthor speaks of personal experiences unrelated to architecture. Siza Vieira speaks of an initial interest about a character which he started to copy and how this ‘trick’ helped him to unfold and widen understandings and knowledge by, first, relating that character with other characters and situations.

In both cases, one needs to know, understand, and experience. Knowledge has to imprint something in us, emotionally and rationally. It is possible, and many people attest to this, to understand some of Siza’s memories of architecture even if transfigured or re-contextualised. At times this seems deliberate, consciously done, as if comments, critics, other times, they seem to come from less conscious territories.

To illustrate the first case, we can see a reference to Adolf Loos (Figure 2) in the Avelino Duarte House (Figure 3) designed by Siza in Ovar (1981-85); in the second, we find a relation, perhaps an unconscious link, between his School of Education Sciences in Setubal (1995) (Figure 4) and the old shrine of Cabo Espichel (Figure 5).

When asked about the similarity of his School in Setubal (Figure 1) built in the 90s with the old shrine of the 18th century only 40km East (Figure 2), Siza said that it was so obvious although he never thought of it, at least not consciously.\footnote{M. Matos, “Inquirição a um Projecto,” in Álvaro Siza (ed.) L. Trigueiros (Barcelona/Lisboa: Gustavo Gili/Editorial Blau), 1995.}

We can then infer that Siza’s acquaintance with the spatial structure of the shrine lead him to adopt, even if not deliberately, that same structure not as a metaphor but instead as a syncretic parallel to, eventually, build another structure different from the shrine in almost everything except in its overall lines. But this circumventing and match was not consciously done. As he said, “I wasn’t
copying” [although we cannot say the same about the house in Ovar]. Such information, if you will, is “already part of us. Pops up when needed. It shows up because it is in us.”

Le Corbusier once shared a similar account about how he would introduce the project’s initial information in his head and then leave the mind to work on its own until, one day, the idea would find it way.

As we saw earlier, memory is the mind’s ability to summon already lived, experienced images. There is creative capacity unattached to the possibility of relating visual or other type of images – “dispositional representations” existing in the brain boost such possibility. At the same time, these “dispositional representations” can only exist once we have experienced architecture emotionally and intensely enough to form a lasting impression.

Knowledge spurs from existent dispositional patterns able to generate mental images. In that sense, mental images of architectonic spaces are the raw material of architectonic thought.

However, as briefly mentioned earlier, those dispositional patterns allow us to produce beyond images.

Figure 3. Exterior View of Casa Avelino Duarte (1981-85) in Ovar, Portugal.
Álvaro Siza
Source: Fernando Guerra | FG+SG.

The very rules and strategies for the manipulation of said images are here enacted. Both stem from the understanding, in this case, of architectonic systems. Then, the experience of architecture is never limited to a sensory experience. It needs to rest on discernment and thorough understanding.

Damásio also refers to the existence of “somatic markers” associated to particular experiences, and which help us in complex decisions and choosing as is the case in any creative endeavour.

As a result, knowledge does not derive from a purely rational process. Quite the opposite, Emotion plays an important role when we relate things in whichever creative task is at hand and, of course, also saliently in the design process in architecture.

The role of emotion does not dismiss the importance of reflection in the creative process. Selecting and decisions do result from impulse alone. Reflection is fundamental for our discernment of lived experiences. More so in regards to architecture being as it is a complex realm of knowledge not only because of architecture’s specific issues but also because of its increasingly elaborate relationship with other domains.

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Architectonic thought cannot be simply equated to perception. Why? Because it convenes the use of logical and rational processes which help us to set objectives and to fine-tune and direct creativity. Architectonic thought is far from raw, as in only relating to the world through the senses as Merleau Ponty highlighted in regards to painting. As Marina explained, the creative process depends of the intuition and of a set of other processes feeding it with precise objectives, context, and the possibility of assessment – this occurs in architecture-making and other areas, in the arts and sciences.

How is this revealed throughout the design process? What is the role played by intuitive mechanisms and logical mechanisms throughout the project? Are there stages where any of these mechanisms seem to predominate?

All architects mention the starting phase - when they are confronted with the ‘problem’, with the functional programme, the site, and the budget – as a fuzzy period where any data input feeds a cloudy amalgam, something they cannot discern as a clear structure. Adding all the data just won’t do. Sometimes, the more elements you add the more the problem blurs into a mass. Therefore, at this stage, observing and feeling are paramount.

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It is also a period when the architect is fully focused on the site. For Siza Vieira, for instance, the process of what we sometimes call in architecture schools “reading the site”, is mainly an exercise of observation by drawing – to see in depth, to disassemble and relate, and also the gesture that seeks to match the visual thought; drawing makes visible our interpretation of what is observed. An elaborate process, no doubt, that leaves a mental imprint or “a pattern of disposition” if in Damásio’s parlance. And, of course, the focus called for when one draws opens the door for this mark to build up well beyond the sheet of paper. On drawing we can elaborate further: it is process of interpreting the visible as mentioned. By sketching we discover the ‘anatomy’ of a certain place, its topography, skyline, light, horizons, lines, as if we start to recognise its ‘face’.

Driven to survive, human beings are equipped with an innate ability to memorise and recognise the features of a territory as it occurs with recognising a human face. Why we recall or recognise places and faces from the past is more difficult to explain. This comes to show the almost automatic, instant fashion of visual recognition without resorting any logical reasoning. In drawing, because it implies interpretation, logic has to intervene.

Often we hear architects speaking about ‘capturing the essence of the place’, something one can only attain by ‘feeling’. Le Corbusier used to say that for him to ‘feel’ the site where the Chapel of Notre-Dame-du-Haut (Figure 6) was to be built, he spent several hours strolling that land only to know the soil and the open horizons.\footnote{35, Le Corbusier, \textit{Textes et Dessins pour Ronchamp} (Ronchamp: Association Œuvre De Notre-Dame Du Haut, 1965), 9.}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{notre-dame-du-haut-ronchamp.png}
\caption{Exterior View of Notre-Dame-du-Haut (1950-55) in Ronchamp, France. Le Corbusier} \\
\textit{Source: Author, 1991.}
\end{figure}
This phase is followed by a period of meditation be it long or short. Also for Le Corbusier, it could mean months without a single sketch. During this time, many authors speak about leaving the mind work ‘on its own’ and also they do not try to influence this process logically or even consciously. Perhaps a time for the mind to summon images through those “patterns of disposition” registered in the brain tissue while these are being linked by “somatic markers”.

We can thus assume that “neural registers” and “somatic markers” work together below the conscious level; gradually, from their conjoining, relations start to emerge, both from past experiences and knowledge so as to generate connections – connections which intuition comes to relate to reach the solution most apt to solve a complex problem, be it an architecture project, a scientific, or philosophic question and so on.

Before I conclude, some questions and reflections can be drawn from what was said hitherto.

If indeed the mind is incorporated – that is, correlates and cannot be disjoined from the body and the sensory experience – then rational processes are permanently influenced by intuition. What does this say about the creative process in architecture? It tells us that, ultimately, the process and its material result reflect back this deeply human phenomenon. Architecture is thought for and created to be lived through a human body. It caters to a body with a mind, a body that thinks and feels.

Isn’t architecture, first and foremost, a construction resulting from the interaction of body and mind in a surrounding environment? Is it not architecture after all a meticulously, rationally constructed image, carefully ordered? Is it not architecture this undoubtedly logical construct where desires, impulses, intuitions and all the gestures of creative freedom of the author(s) come to be reflected on? Does the same occur, albeit differently, with those who use this architecture?

When architects design, they make intense use of memory, they summon their references, architecture situations they know, the works of authors they follow, etc. Architects come to use logical-deductive processes as they seek an order, a geometry. Resorting to technical knowledge of construction, they organise and shape space. In this extended act, and as in other creative acts, mind is one with the body, the latter stimulates the former: our bodily experience stimulates and influences our thoughts. What we lived and experienced during the course of our lives is constantly summoned and, each time, things get reconstructed and assembled with other images and new patterns ensue. Memory is a dynamic mechanism and the origin of imagination. Jointly with mental images (that is, not necessarily of a visual nature) we learn the mechanisms of its use and these are also images.

The learning process in architecture - as in any other creative area of comparable complexity – develops in the long-haul in order for a sort of mental (and sensory) reconstruction to occur from acquired knowledge, particularly on architecture, as forming a cultural basis but also as lived experience and perceptive engagement – in short, a wealth of true knowledge needs to consolidate.
Conclusions

I conclude by highlighting the three key points developed in this presentation.

1. The findings of neuroscientist António Damásio bring new insights to the way we understand the creative process in architecture. Namely, the fundamental influence of the body over the mind, and also the relation between creativity and memory. Both are paramount to unveil how architectonic imagination and knowledge come together in the design act. The influence of emotions in decision-making is enacted by a mechanism which we can identify with intuition – we are then equipped to foreshorten connections between apparently unrelated things and this is unconsciously done. Such mechanism is the basis of creativity and feeds from the summoning of images stored deep in our memory, somehow marked by our experiences and emotional responses.

2. The mental processes called in the perception of architecture, and in its creation, do not differ from those we use in the everyday and in other creative tasks whatever their domain. It is then a particular attention to architecture (a perceptive focus if you will) that comes to change the very perception of space. The depth and width of architectonic culture alters the richness and operative ability of memory. Further, Marina’s conclusions underline how creativity is a vital, biologic process which we re-utilise for varied purposes and at times directed for a particular objective, as is the final result of designing an architectonic object. For this to occur, we find the need to set stages, objectives and strategies in order to make operative the capacity which we all have but need to find avenues to use it for this or that end.

3. The accounts and works of four well-known architects were taken as case studies. Here, we understood how sensory mechanisms are put at work and how these are indelibly linked to memory, particularly the memory resulting from experiences that impacted our mind and senses. This memory keeps expanding, reconstructing as it forms the basis for creativity. There is no creativity without memory. Memory is marked by emotions, by what the body feels and imprints on the mind. We thus resort to a sort of ‘deep pond’ of mental images to design architecture. Awareness of these processes helps to bring to the fore the importance of direct, sensory experience in the creation of architecture and also how it is learned and taught. And here the path is open for further research.

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Bibliography


After the “Starchitect:”
Wright Finds his Voice after Being Fired

By Michael O'Brien *

The term “Starchitect” seems to have originated in the 1940’s to describe a “film star who has designed a house” but of late has been understood as an architect who has risen to celebrity status in the general culture. Louis Sullivan, like Daniel Burnham, might have been considered a “starchitect.” Starchitects are frequently associated with a unique style or approach to architecture and all who work for them, adopt this style as their own as a matter of employment. Frank Lloyd Wright was one of these architects, working under and in the idiom of Louis Sullivan for six years, learning to draw and develop motifs in the style of Louis Sullivan. Frank Lloyd Wright’s firing by Louis Sullivan in 1893 and his rapidly growing family set him on an urgent course to seek his own voice. The bootleg houses, designed outside the contract terms Wright had with Adler and Sullivan caused the separation, likely fueled by both Sullivan and Wright’s ego, which left Wright alone, separated from his “Lieber Meister” or “Beloved Master.” These early houses by Wright were adaptations of various styles popular in the times, Neo-Colonial for Blossom, Victorian for Parker and Gale, each, as Wright explained were not “radical” because “I could not follow up on them.” Wright, like many young architects, had not yet codified his ideas and strategies for activating space and form. How does one undertake the search for one’s language of architectural essentials? Does one randomly pursue a course of trial and error casting about through images that capture one’s attention? Do we restrict our voice to that which has already been voiced in history? Wright’s agenda would have included the merging of space and enclosure with site and nature structured as he understood it from Sullivan’s Ornament. While the houses that followed Wright’s departure from Sullivan lack the formal coherence of the skillfully adapted “Bootleg” houses, these transitional houses constitute important markers of Wright’s practice-based research towards finding a harmonious relation between plan and section, space and mass, a structure for form and space. Practice based design research is essential to architects and architecture and can offer students and new practitioners a strategy to accelerate their own growth. Frank Lloyd Wright’s hundreds of houses offer a unique glimpse into the development of an expression of beliefs in form and space. This paper will present a timeline and study of Wright’s earliest, sometimes awkward steps, and propose that it is an ornamental structure, learned by Wright at the desk of Sullivan, was the catalytic force that freed Wright from historicism and set him on a path of clear principle that would deeply influence the works that have made him a Master.

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Introduction

Scholars often treat Frank Lloyd Wright as boy genius, producing innovative designs from his first moments as an independent architect but the historical record shows otherwise. A close examination of the early years surrounding his departure from Adler and Sullivan reveals an intense struggle for voice. Wright’s experiments with form, space, and structure as seen in the architect’s language of plan and section show his movement away from the Classical and Victorian influences of his “Bootleg” houses towards a more original structure based largely in the lessons he learned as a draughtsman in the employ of Adler and Sullivan from 1887 to 1893.

It is the thesis of this paper that the combined factors of Wright losing his position at Adler and Sullivan, his recent marriage to Catherine Tobin, and the quickly-growing family pressed Wright into a series of practiced-based design research undertakings to learn how to master the structural organization of space, mass, and movement into the form that architectural history now labels as the Prairie House.

Research Defined

The Oxford English Dictionary defines research as “The Act of searching carefully for or pursuing a specified thing or person.” As well as [A] Systematic investigation or inquiry aimed at contributing to knowledge of a theory, topic, etc., by careful consideration, observation or study of a subject. If we consider each commission an architect undertakes as a step towards a new understanding of the relation of type, space, and form in the emerging poetics of the American voice, then the careful, commission by commission search for the integration of fluid space and form that Wright intuited from the fusion of the geometric and the organic in Louis Sullivan’s ornament can be understood as a research agenda based on the active practice of architecture.

Practice Based Research is it Necessary?

The definitions above show that research may be either goal or methodologically oriented and may be reached either systematically or by “consideration, observation, or study.” “Forming and Framing” are the words Laurene Vaughan use. Unlike many Ph.D. students, practicing architects, beginning architects and students, the difficulty of defining the goal that is the desired outcome of the research is seldom undertaken as a search for principles. Indeed by not asking the hard questions about beliefs and instead,

choosing a school, or an architecture firm based on visual appearances and blindly following along, the beginner is freed from having to establish a programme or set of principles of their own.

By not questioning more than a benefits package given with employment, or an accreditation status given to a curriculum, the beginning architect never has to confront the difficulty of the conversion of belief to form and space. The contemporary condition that traps all too many beginning architects is one of complacency, perhaps like the job security Wright felt when he earned his contract with Adler and Sullivan.\(^6\) Wright’s marriage to Catherine Tobin, made possible by his secure employment with Sullivan, led to yet another financial bond with Sullivan in the form of a loan for the purchase of land and the construction of the Oak Park house.\(^7\) It was Wright’s propensity for the beautiful that led to “extras” added to the cost of the house, at once exceeding the amount of the loan from Sullivan, and provoking Wright into beginning his independent practice.\(^8\)

There is a cultural expectation that for a study to be considered “research” it must adhere to science-based models of inquiry, that is, “a systematic investigation, leading to greater knowledge or understanding of phenomena and of observable facts.”\(^9\) Implicit in this is the repeatability of the research to achieve the same result. This repeatability aspect is frequently used in University promotion and tenure discussions to negate the idea of design as research, and to be fair, often design is simply a re-aggregation of knowns with little or no aspiration for discovery. Yet the pursuit of the beautiful seems to have at one time been accepted as basic research. Even the National Science Foundation includes the following 1852 quote by Joseph Henry in an appendix where the definition of research is to be found.

“The true, the beautiful, as well as the immediately practical, are all entitled to a share of attention. All knowledge is profitable; profitable in its ennobling effect on the character, in the pleasure it imparts in its acquisition, as well as in the power it gives over the operations of mind and matter. All knowledge is useful; every part of this complex system of nature is connected with every other. Nothing is isolated. The discovery of to-day, which appears unconnected with any useful process, may, in the course of a few years, become the fruitful source of a thousand inventions.”\(^10\)

Perhaps the origin of a “starchitect,” an architect who’s unique vision and expression finds broad acceptance by the contemporary culture, begins with

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7. Ibid, 106.
10. Ibid, 50.
practice-based research. A programme or investigation across the boundaries of a commission to guide all the commissions of a firm such as Louis Kahn has done with the pursuit of presence, or SHOP has done with advanced fabrication, or the pursuit of the sublime by Sanaa. In each office, the question was advanced through the careful search, systematically undertaken to question every aspect of a project from aesthetics to representation to nature, mass, material, light, space and movement.

I believe practice-based research to be the key differentiator between a work of architecture and an act of building. The application of a programme having enough substance to guide every aspect of the work both differentiates building from architecture and in this way, practice-based research is a necessity in any work of architecture, and critical to the development of Wright’s architectural theory and voice following his termination by Louis Sullivan.

Wright’s Preparation for Architecture

Family

Frank Lloyd Wright was born in Richland Center Wisconsin between June 8 1867 and June 8 1869, there seems to be some confusion on the true date/year of his birth vs. the 1869 date Wright himself would cite in interviews with most historians agreeing on the 1867 date. He was the eldest of three children born to Anna Lloyd-Jones and William Wright who abandoned his family when Frank was fifteen. William’s influence on the family seems to have been in immersing the family home in music, an art form Wright would keep with him throughout his life.

Wright’s mother, Anna, was the dominant force in his life from his earliest memory to her death in 1923. She is said to have been convinced Frank would become an architect from the earliest moments of her pregnancy and became a proponent of Fredrick Froebel’s Kindergarten method of education using “gifts and occupations” to instill in young Frank that design was play, and play was learning. Froebel was an early proponent of the Kindergarten, and believed that undertaking creative endeavors were central to learning, even at the earliest ages. These creative endeavors were undertaken through a series of “gifts” provided for the child, and with instruction provided through rhyme and song, the student undertook the “occupations” as Froebel termed the lessons. The Froebel gifts were a series of geometric solids, cubes, spheres, cylinders, and rectangles, each made up of smaller components so that the form and shape

of the gift was changeable as the student “played” at the vital endeavor of creative making.\textsuperscript{15} It was the Froebel block gifts, number 3 through 6, blocks made in 1:1, 1:2 and 1:4 proportions that seem to be most present in his “Prairie Period” houses.

Throughout his career, Wright credited the Froebel education as central to his ideas about form, structure and the scalability of each to be furniture, building or townscape.\textsuperscript{16} Peter Blake, in his book “Frank Lloyd Wright Architecture and Space” credits or blames Anna with imbuing Wright with an enduring arrogance, a trait that made his declarations on nature and form seem all the more plausible.\textsuperscript{17}

Formal Training

Wright’s mother Anna had become a teacher in the Richland Center area and home-schooled Wright in the Froebel system during his early years she saved money to send Frank to the University of Wisconsin’s civil engineering program.

Anna Lloyd-Jones vision of Frank becoming an architect met the hard realities of the family’s limited finances when she enrolled Frank at the University of Wisconsin, Wright himself remembers “Architecture-at first his mother’s inspiration, then naturally enough his own desire, was the study he wanted. But there was no money to go away to an architectural school.”\textsuperscript{18} Wright’s mother placed Frank in the employ of the Dean of the Civil Engineering School’s private practice which funded Frank’s room and board, while leaving him time to study. Wright’s characterizes the memories of his time in the university as “mostly dull pain”\textsuperscript{19} with the exception of mathematics, which Wright saw as having great poetic potential, but unrealized by his professor. Even at this age, Wright was deeply interested in developing his own voice, he writes “The youth [Wright himself] yearned to read and write his own language—yearned to speak it-supremely well.”\textsuperscript{20} He records self-criticism of his writing noting that while the professor gave him “good” marks and notations like “thought excellent,” while Wright himself believed his paper to be “dishwater.” Wright concludes this text on his composition course by saying “He [Wright] was left to find out for himself if he could [find the limitations of language and turn them to advantages] and without material.” This is the first indication of a process towards finding his own personal expression, learning the limits of a context, and learning how to turn them to his advantage. He would later undertake much the same process after being fired by Sullivan and having to put food on the table for his family without

\textsuperscript{15} Ibid, 10.
\textsuperscript{16} Blake, Frank Lloyd Wright: Architecture and Space, 1969, 16.
\textsuperscript{17} Ibid, 14.
\textsuperscript{18} Wright, An Autobiography: Frank Lloyd Wright, 1932, 52.
\textsuperscript{19} Ibid, 52.
\textsuperscript{20} Ibid.
compromising his personal expression and without “any material” to guide him step by step through the process.

Wright’s life-long opposition to the classical tradition seems to begin in his senior year, where he recounts his frustration with Goethe and his “Classical” course was critiqued as “the very practice of the inappropriate; so any human edifice reared up on it was likely to fall down like the Capitol. Gestures were fine but – how about work? Reality?”

Wright’s autobiography recounts his internal struggle with feeling that his time at the university was being wasted, that he was a drain on the family finances, and his hope that his uncle Lloyd, a Unitarian minister in Chicago, building a new church, could get him placed with an architect’s firm all combined to Wright leaving for Chicago, without his mother’s knowledge or consent, and without finishing his university degree.

Apprenticeship with Silsbee

It would be accurate to say that Wright’s first apprenticeship had been with Professor Conoyer, the Dean of Civil Engineering, but his first architectural apprenticeship was in the office of J. Lyman Silsbee, Architect of All Souls Church, led by Wright’s uncle Jenkin Lloyd Jones. The time in Silsbee’s office opened Wright’s eyes to the risks of the picturesque tradition, and Wright was critical of Silsbee’s interest in the image of the building instead of its space and material form. This critical assessment of Silsbee is another hallmark in Wright’s own process of practice-based research towards emergence following his departure from Sullivan’s office. The image of the building, its spaces, and its substance would have to one. The achievement of this, through the “awkward” houses would be christened by Wright as “organic” architecture.

Wright gained much insight into how practice was conducted during his time in Silsbee’s office. His friendship with Cecil Corwin helped him to acclimate to the music and theatre culture of Chicago. Wright left Silsbee’s office after 3 months or so after asking for a raise and being rejected. He quickly found employment at a lesser firm, but with higher pay, being challenged to design buildings that “I should be learning to design.” For one of the few times in his career, Wright put aside his arrogance and left the position, telling his employer that he didn’t feel ready to “give out designs.” With that, he left, returned to Silsbee’s office and was rehired at the pay level he initially requested. Ultimately, Silsbee’s conventional approach to romanticism caused Wright to yearn for more fulfillment. Wright’s weekends were spent with concerts, boxing, and self-study of Owen Jones’s treatise on

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23. Ibid, 60.
24. Ibid, 73.
ornament, during which he made many ornamental drawings and tracings that would be the key to his employment at Adler and Sullivan.

Apprenticeship with Sullivan

Grant Manson’s account of Wright’s application to Sullivan’s office reveals the strength of Wright’s desire to join the innovative Adler and Sullivan spending long days leading up to the interview preparing drawings of ornament in Silsbee’s manner “sketchy and sentimental” as well as in his own manner, “directly and simply” to impress Sullivan.26 Such was the hunger of Wright to be a part of Sullivan’s works, characterized by Manson as “Unconventional.”27

Wright’s own account of the beginnings of his apprenticeship at Adler and Sullivan shows an undefined job as one of the draughtsmen “one of a crowd” he notes and when queried by Paul Mueller, the supervisor as to what Sullivan told him to do, Wright responds “he didn’t tell me.”28 The undefined job soon changed with Sullivan assigning Wright to re-draw and re-ink one a drawing “ruined by a duffer I [Sullivan] fired Saturday.” Intimidation and confrontation seemed to have been the nature of the culture in the draughting room, with Sullivan challenging and draughtsmen resigning as a normal daily ritual. Wright, however was “chosen” by Sullivan.29

Paul Sprague characterized Wright’s role in Adler and Sullivan as converting Sullivan’s small pencil sketches into larger scaled drawings.30 Even in this role as assistant, Wright sought out his own voice, injecting geometric motif’s into Sullivan’s “pure efflorescence” whenever he had a chance.31

Wright became Sullivan’s trusted assistant, recruiting George Elmslie to leave Silsbee’s office to join Sullivan. Wright asserted that he could design Sullivanesque ornament as well as Sullivan himself, an assertion questioned by Paul Sprague who noted “Wright’s personal ornamental designs, whether for Adler & Sullivan or for his own private commissions have demonstrated an innate sensitivity for geometrically controlled forms and a considerable lack of sympathy for Sullivan’s plastic efflorescence.”32 This innate sensitivity for geometrically controlled forms, and Wright’s role drawing Sullivan’s ornament for 7 years combine to give Wright the thesis for his Practiced-Based-Research that would ultimately produce the Prairie House.

As Sullivan’s confidence in Wright grew, he was given sole responsibility for the residential commissions that came to the office, Sullivan being more focused on the commercial and office buildings. He notes that Sullivan’s own

26. Ibid, 22.
27. Ibid, 21.
29. Ibid, 96.
house on Lake Avenue, as well as Sullivan’s house in Ocean Springs Mississippi were his designs as was the Charnley house in Mississippi, and the Charnley house on Astor Street in Chicago. Wright undertook these houses for Adler and Sullivan after hours, earning overtime to help pay for the extra’s Wright included in his own home, and in the expenses of his growing family.

Independent Commissions

The “Bootleg” Houses

Ultimately Wright’s expenses exceeded even the additional revenue provided by this overtime pay and he began accepting independent commissions for houses. The Harlan, Blossom, Mcharg and McArthur houses were designed with no “radical” design aspects because, as Wright records, he “could not follow up on them.”33 But these houses prove Wright’s ability to transform the academic traditions into solutions for his clients. This ability to catalog and recall visual sources was described by Wright biographer Meryle Secrest who observed “Wright was influenced, all his life, by everything he saw, however much the original idea might be transmuted and transformed by the alchemy of his imagination. He may have been in the position analogous to that of someone with a powerful musical memory, that is to say, haunted by images if not actually hounded by them, until he had exhausted all their possibilities.”34

The visual differences between Wright’s and Sullivan’s works led to a questioning of the importance of Sullivan on Wright’s blossoming in what is known as the Prairie Period with Manson writing “So much has been said, written, and inferred concerning the association of Frank Lloyd Wright and Louis Henry Sullivan that it deserves every scrutiny. Yet it is a relationship that has the qualities of a mirage; it grows less substantial the closer it is approached.”35 I hope the following evidence informs the reader that while an historian such as Manson might find this to be true based on visual similarity, architects might see more of the structural similarity Wright developed in his Practice-Based-Research with the structures of Sullivan’s most essential expressions, his ornamental designs.36

So, “hounded by” images, probably from professional journals Wright’s own house, and the houses for W.S. McHarg, Walter and Thomas Gale, Robert Parker skillfully transformed the Queen Ann while the George Blossom house similarly transformed the Colonial into houses for contemporary families. This

ability to apply “academic discipline” to his works would come to the attention of Daniel Burnham and lead to an invitation to study at the Ecole des Beaux Arts, an offer Wright ultimately rejected. Wright’s account of this, Secrest’s account of this both hint at this as a rejection of the skillful stylistic adaptations as the basis of Wright’s architecture leaving the stage open for the practice-based research leading Wright to his own voice, the Prairie House.

Research Agenda; after the “Bootlegs”

Following his quitting/firing from Adler and Sullivan in 1893, Wright opened his own office in space shared by friend Cecil Corwin initially, and ultimately with “the 18,” a group of architects credited with developing what became known as “The Prairie School,” not by the participants themselves, but by historian H. Allen Brooks. The term itself is not important, but the group’s pursuit of a midwestern architecture, eschewing the Eastern U.S. and European academic tradition for a more personal expression principled in the celebration of the Midwest. Participation/leadership in this group was instrumental for Wright, who at this time, cast off the images of the Queen Ann and Colonial and began his practice-based research agenda searching for a uniquely midwestern architecture using the single-family residence as his research vehicle.

I propose that the time period for this practice-based research agenda extended from Wright’s departure from Sullivan’s office in 1893 to 1900. 1893 is chosen as this is the year that Wright rejects the offer of the Ecole des Beaux Arts scholarship from Daniel Burnham and effectively rejects the academic tradition (that got him fired) for something yet unknown. 1900 is chosen as a milestone, not an ending, but a point where Wright’s ideas about the land, the sky, space, and family all find coherent form in the typology of the Prairie House.

From 1893 to 1900 Wright undertakes some 20 house commissions. Each is a research project negotiated between owner and architect leading to awkwardness as Wright learns the strategies of working with owner, and builder, all while reaching for something true to his beliefs, and staying a step ahead of creditors.

MacCormack discusses the Froebel lessons from Wright’s youth as a base from which Wright will transform cubes of maple toys to cubes of space, a cruciform of woven patterns to a cruciform of partially defined rooms and always, like was the case in the Froebel lessons, using all the parts to make the “whole.” MacCormack argues that the base grid for the Froebel lessons was

transformed by Wright through the privileging of some grids, while erasing others, thus forming a tartan grid which contained elements such as pier, fireplace, wall, leaving the space between the elements a more pure proportion in contrast with a Cartesian grid which always compromised proportions between elements due to material thickness.40

The earliest of Wright’s houses analyzed by MacCormack is the George Blossom house from 1892. The plan is analyzed to highlight the center and cross axis on the second floor and the four corner rooms on the first, completing MacCormack’s visual analogy to the cruciform outcomes of one of the Froebel lessons. He follows the Blossom analysis with the Winslow house from 1893, where his conclusion is that the underlying formal structure has a “far less explicit” relation to the Froebel lessons in both plan and elevation. The “Froebel whole” that is, in MacCormacks words, the “complete interdependence of exterior and plan” first appears in the Joseph Husser House of 1900.41

Yet, while compelling comparisons between masses that could be constructed with the Froebel gifts were made evident by Manson and MacCormack for Wright’s early institutional buildings, these formal comparisons did not hold well for Wright’s houses but are compelling if one considers the cubic maple Froebel gifts as the spaces within the houses and not the house form itself.

If Wright held the Froebel lessons in one hand as a discipline for articulating spaces, I believe he held his lessons from Sullivan in the other. Wright’s role in Sullivan’s office began with his involvement in scaling and inking Sullivan’s ornament. Wright observed Sullivan’s “method” for making ornament, which in the early 1890’s differed slightly in its sublimation or celebration of geometry from Sullivan’s practices in the early 1920’s.

Ornament for the commissions of the late 1880’s and early 1890’s (Wright’s time in the office of Adler and Sullivan) Sullivan’s sketches for ornament show that the piece would begin with the ornament’s location, it’s “frame” or site within the overall architectural element (arch, soffit, capital, etc.) given this frame, Sullivan would locate the primary elements of efflorescence, often geometrically related to centers or geometric subdivisions of the frame, he then would unite these elements of efflorescence with lines of growth, also following secondary aspects of the frame’s geometry.42 Often these lines of growth would extend over the frame, clasping the organic expression of the efflorescence to the underlying structure of the geometrical

frame much as the trellis supports the roses grown by Sullivan in his Ocean Springs Mississippi garden.

Sullivan’s method, was cited by apprentice Charles White in a series of letters written while he was a part of Wright’s studio. Whites May 13, 1904 correspondence includes the following:

“When W. [Wright] first came out of Sullivan’s office, he very naturally put into his work much of S’s [Sullivan’s] method, and not a little of his ornament. Then came a period of transition, when he was trying to break away from Sullivanism, and casting about for methods of self-expression. His works of those days were interesting—and somewhat above the work of the average man, tho lacking the stability and refinement of his present work.”

This would seem to make the goal for Wright’s practice-based research clear, to develop a whole architectural expression of the principles of growth and efflorescence learned at Sullivan’s side within the ruled grids and using the clear spatial volumes used in the Froebel lessons.

If we consider Wright’s residential commissions between 1892 and 1900, we should be able to observe his progress towards this research goal. The Queen Ann inspired “bootleg houses” completed in violation of Wright’s contract with Sullivan as seen in Figure 1 demonstrate a vertical massing emphasis when seen from the street.

Figure 1. The Walter Gale (left) Thomas Gale (center) and Robert Parker (right) “Bootleg” Houses Share a Historicist Expression Common to Wright’s Early Houses
Source: Author.

Mapping the spaces proportioned as the Froebel gifts, 1:1, 1:2 and 1:4 as they occur between the walls or elements of these early houses, we can see that the Queen Ann styled Emmonds, as shown in Figure 2, innovative as it might be as an open plan interior, maps as a functional cluster, with no apparent structure of spaces.

Four years later, Wright’s Isadore Heller House from 1897, shown in Figure 3, shows the beginnings of structure with two offset stems of movement each leading to an important space / efflorescence, the living room and the dining room. Froebel proportions are compromised here, largely for functional reasons, indicative of Wright finding his way to balance owners needs with clear form and space.

**Figure 2.** Emmonds House Plan 1892 Overlaid with Froebel Proportions 1:1 (red), 1:2 (green), 1:4 (ochre)
*Source:* Authors Sketch Plan and Diagram.

**Figure 3.** Isadore Heller House Plan 1896 Overlaid with Froebel Proportions 1:1 (red), 1:2 (green), 1:4 (ochre)
*Source:* Author Sketch Plan, Image and Diagram.
Similarly, the George Furbeck house from 1897, seen in Figure 4, shows clear compositional intent of the plan geometries, anchored by a central octagon, with paired octagons left and right. These intentional space-forms are not yet entered by a clear structure, only a central door located under a square proportioned porch. Seen from the street, the remodeled porch awkwardly fronts the squat extrusions of the octagonal flanking spaces which are topped with conical roofs that, while clearly privileging the horizontal plane through their overhangs, never resolve with the roof (rectangular) over the larger central octagon. A clear failure in the resolution of the exterior form to the interior spaces.

Figure 4. George Furbeck House 1897 (right) Overlaid with Froebel Proportions 1:1 (red), 1:2 (green), 1:4 (ochre) Octagons (Blue)

Wright seems to have quickly corrected his formal strategy related to the octagon with the unbuilt plan for the Aline Devin house of 1896, seen at left in Figure 5. In the Devin House Wright frees the geometry of the flanking octagons from the cubic central mass of the house, giving the plan a distinctively ornamental structure and organization, much like the Sprite called “Gift Giver” seen at left in Figure 5a, fabricated by Iannelli in close collaboration with Wright for the Midway Gardens of 1914.
The McAfee House plan of 1896, shown in Figure 6, shows a similar ornamental structure with the element of efflorescence (octagon) atop a incremented stem axis, with root efflorescence below (kitchen), this is similar to the ornamental structure from a typical “root-stem-bloom” ornament type from Sullivan shown in Figure 6a. The Bradley house plan, Figure 7, considered the beginning of the Prairie houses and when mapped to the Froebel gift proportions, reveals an off-axis efflorescence element (living room) atop an incremented stem (arcaded walkway) that suggests Wright had control over his geometrical space/forms and had the confidence to step away from rigid plan symmetry and introduce a dynamism to the space that resulted from indirect paths of movement and views from entry to the fireplace that would characterize his next 100 houses over the next 10 years.
Figure 6. (left) A.C. McAffee House Plan 1894 Overlaid with Froebel Proportions 1:1 (red), 1:4 (Ochre), Octagons (Blue) a. (right) Merchants National Bank 1913 Louis Sullivan. Ornament at Entry showing Heraldic Efflorescence (octagon) atop a Incremented Stem Axis, with Root Efflorescence below.
Source: Author Sketch Plan, Photograph and Diagram.

Figure 7. Bradely House Plan 1900 Overlaid with Froebel Proportions 1:1 (red), 1:2 (green), 1:4 (ochre)
Source: Author Sketch Plan and Diagram
Conclusions

Wright’s dismissal from Adler and Sullivan set him free on a path to integrate what was learned from the Froebel Kindergarten lessons about geometry, space, and form with the lessons on organicism, structure, and vitalism learned as Louis Sullivan’s apprentice. The years 1893 to 1900 are marked with examples of Wright wrestling with the imposition of geometric order (from Froebel) in the context of the single-family residence, finding a coherence (unity) when he began applying the structural relationship between spaces in much the same way he developed the relationship between botanical structures (efflorescent elements) in Sullivan’s ornament.

His practice-based research was developed over a series of a dozen or so commissions and was not known by his office staff with Charles White observing “then came a period of transition, when he was casting about for methods of self-expression.” White goes on to explain that Wright would “fit the [owner’s] requirements to the design” an indication that Wright understood that the clarity of geometric space and its associated exterior form, wasn’t always a natural fit, and that as Wright found his voice, gained confidence he was more able to mold the owners needs to fit. This is consistent with Wright’s recommendation that owners not bring furniture with them as they moved in, rather that he would have custom designed it to retain the organic wholeness of the design.

Wright is not alone in employing commissions as design research. Mies van der Rohe undertakes a similar practice-based research path to his own voice following his departure from the practice of Peter Behrens in 1911. His Urbig House of 1917 follows a mannerist approach as did his Riehl House of 1907. His unbuilt 1921 proposals for the glass skyscraper and the Friedrichstrasse Office building are the first architectural proposals breaking free of the constraints of the technology of the European wall plane which Mies continued developing in his Weissenhof housing and Afrikanischstrasse housing through 1927. The transparency of the Friedrichstrasse returns in the German Pavilion construction in Barcelona in 1929 and opens a new spatial direction which he would continue integrating with his steel and glass transparent blocks designed for both the office and educational typologies.

Practice-based research in architectural design is often easier to comprehend after the number of experimental projects reaches a few dozen, particularly if those fall within a concentrated period of time, observations of plan, section, elevation can reveal a series of successes, but perhaps more importantly, reveal the failures as perceived by the architect, which tell us more about how design success occurs. Failures, particularly those accompanied by

the kinds of financial stress brought on by dismissal, family growth, and the capriciousness of the national economy are a powerful motivating force driving practice-based research for small practitioners like Frank Lloyd Wright.

Bibliography


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