

Making/Re-making: representational devices of creation

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ΠΕΡΙΛΗΨΗ: Με την παρούσα εργασία γίνεται μια απόπειρα αποτίμησης της Επιστημονικής Εσπερίδας με τίτλο “Making/Re-making”, όπου εγκαινιάστηκε μια συζήτηση που αναζητούσε διασταυρώσεις και κοινά πεδία ανάμεσα σε μορφές της τέχνης και σε έργα μηχανικών. Η ευρύτερη έννοια του making ως «πράττειν» βρίσκεται μέσα στην προσέγγιση κάθε είδους δημιουργικότητας, από τον αρχιτεκτονικό σχεδιασμό έως την εικαστική σύνθεση και την κατασκευή, εστιάζοντας ειδικότερα στις έννοιες της αναδημιουργίας, του επανασχεδιασμού και της ανακατασκευής, ως εναύσματα για τη θεώρηση του χώρου. Η Εσπερίδα είχε στόχο να αναδειχθούν διαφορετικές προσεγγίσεις του “Re-making” ως ένα ψηφιδωτό χωρικών προθέσεων και επιστημονικών εκδοχών, που διαμορφώνουν ένα πεδίο συνάντησης μεταξύ μηχανικών και εικαστικών δημιουργών. Υπό αυτό το πρίσμα, το “πράττειν” μεταλλάσσεται από όχημα υλοποίησης σε παραγωγικό μηχανισμό, που ενεργοποιεί αφηγήσεις, αναδεικνύει συλλογικότητες, ανακαλεί μνήμες και παράγει απρόσμενους συνειρμούς και εμπειρίες του χώρου.

Λέξεις κλειδιά: πράττειν, ανακατασκευή, αναπαράσταση, εργαλεία, τεχνικές, δημιουργικότητα.

ABSTRACT: This paper attempts an evaluation of the colloquium titled “Making/Re-making” which initiated a discussion that looked for cross sections and common fields across various forms of art and engineering. The concept of “making” is embedded in the approach to any form of creativity, ranging from architectural design to artistic composition, construction and crafting, focusing on instances of re-creation, re-design and re-construction, viewing them as agents for the reflection on space. The colloquium aimed to highlight different approaches to “re-making” that draw a mosaic of spatial intentions and scientific understandings forming a common field for engineers and artists. From this point of view “making” is transformed from an agent of realization to a generative tool that activates new narratives, highlights collectiveness, recalls memories and produces unexpected connotations and spatial experiences.

Keywords: making, remaking, re-construction, representation, tools, techniques, creativity.

I. INTRODUCTION

This article will attempt to highlight connections between processes of re-making and tools of representation as devices that enhance creativity and enable the emergence of common ground between the arts and engineering, drawing from the proceedings of the Colloquium titled “Making/Re-making”, that took place on the 16th of April 2021 at the International Hellenic University, where the invited speakers were artists and engineers. “Making” as a concept has gained increased attention in architecture since the development of digital fabrication tools. “The digital design and manufacturing processes have pushed us towards reconsidering values for making, as

embedded again in the medieval maker builder, not maintaining distance between designing and constructing” [1]. This approach promotes a tighter relationship between making and thinking, concept and construction, thinking and acting, as well as acknowledging the impact these technologies and tools have on our perception and culture [2]. As early as the 20th century, the Bauhaus program placed emphasis on the unity between architecture, the fine arts, crafts, industrial design and manufacturing. It sought to bring attention to the significance of this unity for the society of the future. Technique and technology were considered as a value for art [3]. In the 21st century digital technologies facilitate further the dissolving of defined boundaries, enhancing a creative interaction between diverse fields. Making has been associated with craft, art, engineering, science and mathematics, attracting attention from all types of efforts that search into aspects of creativity, whether in the domain of arts or technology [4].

II. MAKING, TOOLS AND CREATIVITY

This closer relation between design and materialization has been further enhanced by the formation and proliferation of the “Maker movement” in the beginning of the 21st century: “The maker movement is a cultural phenomenon that celebrates shared experimentation, iterative learning, and discovery through connected communities that build together, while always emphasizing creativity over criticism” [5]. The maker movement is viewed by its followers as a revolution, that is open to all fields and ages. Making empowers us to experiment, solve problems, propose solutions and thus enhances our creativity. It emphasizes the ability as well as the joy that people can have while fabricating all types of objects and sharing the information and tools through networks. “...the availability of affordable constructive technology and the ability to share online has fueled the latest evolutionary spurt in this facet of human development” [6].

Making is being increasingly being considered as an important feature to be integrated in formal and informal educational programs, suggesting that it provides opportunities for STEM [7] teaching, emphasizing the creative potential of students, encouraging them “to develop positive maker habits, experience the frustration and satisfaction of developing a personally meaningful artifact, collaborate with others in both the process of constructing and sharing artifacts and have an opportunity to explore STEM-related tools that can fuel their curiosity and creativity” [8]. In a manner somewhat

parallel to the Bauhaus almost a century ago, it focuses on creativity and seeks to eradicate strict boundaries, encouraging experimentation and innovation, from the arts to sciences, engineering or even simple DIY artefacts.

Another form of making, *re-making* particularly involves working with something existing in order to create something new. From an architectural point of view, re-making revolves around re-designing and reconstructing buildings and structures. These are demanding projects that frequently have to be addressed. They have proven to be complicated, presenting architects and engineers with a variety of existing factors and limitations that challenge the formation of a new proposal. They require a multi-disciplinary approach, where all agents involved are encouraged to collaborate and find a “clever” solution, something “innovative”, something that no-one had ever thought of before. In the end they will hopefully be praised for “creative thinking”: having put together things un-associated before, towards a new proposal.

Re-making in art does not necessarily have the same objectives, but remains challenging. It is often regarded as a procedure of analysis and interpretation: “Only by remaking an artwork can the full extent of the original working process be understood” [9]. Artists point out that even for just re-producing a work of art the process of reproduction is very informative and educating. “It is only through copying that an artist can internalize the formal qualities, visual language and techniques of another artist” [10]. Remaking art reveals new narratives and creates new ways of experiencing an artwork. This is further enhanced with the development of new media, a field of experimentation for many artists. Remaking in art can involve multiple materials and media (mixed media). In the course of the 20th century established techniques of representation such as painting, drawing and sculpture were enriched by new technologies for representation: photography, cinema, video, digital technologies. Each of them had a profound effect on making and re-making of art.

Appropriation is also related to remaking in art. “Appropriation refers to the act of borrowing or reusing existing elements within a new work” [11]. With this act the existing objects are endowed with new meaning, in another context, often through new media. Appropriation in the 20th century was strongly influenced by mass media, the proliferation of images and consumerism: photography and film enabled the expansion of new media. While appropriation artists focus on questioning ideas of originality and authorship, they have also enabled a broader cultural exchange: “It is common for other industries to appropriate imagery and aesthetics from modern and contemporary art and artists” [12]. With remaking, the maker cannot escape the reference in time: that what exists spurs the creation of something new. Either through fragments, appropriation, or different media and techniques the presence of the past is unavoidable. Time is part of the new narrative.

In this light, making and re-making make us increasingly conscious of the tools and technologies that we employ. Since we are involved in every stage of making, our choice of tools and techniques affects our perceptions and activities. “Making is thinking in action” [13]. In every field, tools are far from transparent agents that help us achieve a goal: they influence our way of thinking. “Perception, memory, attention, intention, estimation, expectation, prediction and anticipation take the form of a dialogue between the maker and the material that sometimes agrees and sometime resists” [14]. The idea that humans shape technologies which in turn shape humans is by now widely accepted [15]. Tools exert significant influence on the way we perceive and operate within a specific field or the way we interact with another field. «...our *expressive* technologies also become *perceptive* technologies — expressing and extending us in ways we never thought possible, radically transforming not merely our comprehension of the world but also our apprehension of ourselves” [16].

Tool making also lends itself to creativity. After more than two decades of continuous development of digital technologies we have reached the point where we design the tools with which we design. The development of tools can be a creative process, involving innovation and experimentation. In the late 20th century, the proliferation of multiple media and various techniques drew attention to the characteristics and potential of old and new mediums. Often *tools* are identified as *mediums*, however there is a distinction. Tools imply a supporting technology, that includes not only technological apparatus, but bears principles and ideology. A tool is a mechanism or method that can achieve a purpose through a medium. A medium on the other hand implies the mediating action of tools. According to Bolter & Grusin, a medium is that what re-mediate: new elements of new media derive from specific ways with which they re-organize existing media, which are again re-organized in order to meet challenges posed by new media. In a broader definition of this continuous process, a medium is a cultural activity that does not have to coincide with the invention of its mechanism [17].

Making culture has been made possible thanks to the development of new tools as well as the technology to share them. Sharing these tools on a global level increased communication and interaction between diverse fields and opened up further chances for innovative solutions. A mentality gradually developed that empowers bringing together previously distant fields, encouraging experimentation and exploration of new relations and associations, often working on the margins of previous borders into new territory. In order to redefine the boundaries of a field we need to redefine its tools.

Creativity [18] has always been associated with the creation of something new. However there are many aspects to creativity: it is the object of a vast field of research from various disciplines. Creativity has been deemed especially important in our era of technology. It

is often presented as a synonym for innovation and discovery. On the other hand, it has been argued that creativity is “about *making* something new, rather than merely applying or discovering something new” [19]. The creative process is about change, evolution and development [20]. The representations used in the creative process are primarily thinking tools, carefully chosen by the individual during the search for his proposal [21]. They constitute a visual environment within which the final proposal will hopefully emerge. Research suggests that representations can substantially support and enhance creative processes [22].

Maker culture promoted the idea that through making anyone could be creative on any field. Creativity entails experimentation and exploration, forging new ground away from fixed assumptions. “Creative thinking is inseparable from intuition and aesthetic experience” [23]. While art is inextricably associated with creativity, the sciences and engineering would be more reluctantly associated with them. Overturning this assumption would require to review these fields with an open mind. “In sciences and arts alike, creativity appears magically as an unpredictable fountain of inspiration from the subconscious. Its unexpected content breaks routines within traditional thinking.” Research into the unknown requires breaking with established thinking, an explorative quest for solutions still hidden from the naked eye: undoubtedly every scientific breakthrough is a moment of creativity. This also holds some truth for engineering as well: novel proposals and innovative solutions are examples of creative thinking and making. Fortunately, the creative aspect in the work of engineers has increasingly gained attention. Since the latter half of the 20th century the re-use of existing building structures has resulted in multiple new proposals, an outcome of original and daring ideas from both architects, engineers and constructors, on various levels, from conceptual to technical. These proposals pushed the boundaries of established practices of reconstruction and breathed new identities and meaning into the new buildings. Since “..creativity is concerned with the generation of effective novel solutions, creativity and engineering are in essence two sides of the same coin” [24].

The case of engineering and re-making in particular, where multiple fields are involved raises a well-known issue for engineers: communication through representations. When a diverse team is focused on providing an innovative solution, it demands keeping an open mind and looking for new associations. In engineering each field is accustomed in working with specific representations: re-making in particular demands collaboration, that in turn requires the initiation of visual communication channels. This collaboration constitutes a dynamic situation where creative thinking can produce new solutions. But there are more reasons for diverse fields to look upon a shared problem: “One of the deeper reasons why it’s important to have different people approaching the same problem – even if they end up finding the same solution – is the path towards a

solution suggests many divergent ways things could progress and having many of those paths is still useful” [25].

On the other hand, art is always operating in the realm of representations: making and re-making art is interwoven with representational tools, media, techniques. Creativity cannot be separated from their operations. Creativity also cannot be separated from questions of tooling: it is impossible to consider any creative process without an understanding of the medium in which it works. In environments that foster creativity among diverse fields, tools for representations are considered indispensable.

III. THE COLLOQUIUM: “MAKING/RE-MAKING”, 16TH APRIL 2022.

This meeting between experts from art and engineering around the theme of “Making/Re-making” gives us an opportunity to investigate on the nature of representations used in the projects presented and their contribution as devices of creativity. The exchange on the processes, the encountered difficulties, the tools and the meanings of the representations involved would highlight alternative perceptions of otherwise established representations, that when integrated into another field could yield surprising outcomes. It would also assist in revealing the creative sides of all different fields. This is especially important, as our era, despite of the global expansion of digital technologies and tools, remains an era of hyper specialization. Research into each field and in art focuses on innovative but very precise goals, remaining detached from others. The 20th century gradually saw a “cultural and institutional polarization of art and science” [26], while there have been strong suggestions that their interlapping would be much more beneficial. History has shown us that creative periods are the ones where there is increased interaction and understanding between arts and sciences.

Three engineers and three artists were invited to present their projects. The engineers were grouped around the re-design and reconstruction of a historical building called “Olympos-Naousa” in the center of Thessaloniki: they addressed its history, the proposal for the redesign of the building and its re-construction that was almost nearing completion at the time of the Colloquium. The invited artists presented their work respectively on the restoration of wall paintings in archaeological sites, the production and stage design of two operas and on a workshop in experimentations of facial representations based on a grid, from a unit of students from the Department of Interior Architecture at the International Hellenic University.

A. “THE CRATES”, YANNIS THAVORIS

Architect and stage designer Yannis Thavoris presented the stage design of two consecutive operas: *Cavalleria Rusticana* (Mascagni) / *Pagliacci* (Leoncavallo) at the stage of Holland Park, London, in 2013. The two operas

are usually performed together and organized in a single production due to the intertwining of common themes in their stories (such as jealousy, representations within a representation, setting in rural Sicily), their sharing of musical features (format, common melodic and rhythmic elements) [27] as well as their duration, which is very well suited for audiences. The collaboration of the director and the stage designer usually formulates the unfolding of the two plays, the transition from one play to the next one, as well as the time frame where they will be situated.

For the stage design the designer turned to the search of images, looking for an image that would trigger a suitable narrative. Photography was used as a heuristic device. Once suitable images had been found and their narratives set in motion, the transition from idea to material was investigated. As depicted in a series of images, crates as were chosen as the main feature of the stage, however the material was yet to be identified. The change of material of the crates from one play into the other finally formed the backbone of the entire staging: wooden crates set the stage for the *Cavalleria Rusticana* in post-war Sicily, while colored plastic crates set the scene for the *Pagliacci* in industrialized Sicily of the 70's. Another search was needed for the cart of the touring company in *Pagliacci*: film stills from Fellini's *La Strada*, posters and sketches provided the device for the entrance of the touring merchant Canio in *Cavalleria Rusticana*, which was transformed into the touring cart for the *Pagliacci*.



Figure 1. Left: image by Letizia Battaglia after a mafia crime. Right: Image from the Italian South, before World War II.

The two operas hinged on the representations used: the chosen images from the connecting and transitive devices from one play into the other. Objects from the first play were transformed and found their way into the second play. Passion, jealousy, rituals and representations were weaved from one play into the other. The opera staging and performance oscillated between conceptual and material making and remaking. Photography was the main device through which the stage designer searched for ideas and unveiled the re-telling of the story, through the appropriation of images and the reconstruction of objects.

In every new opera performance, we speak about the familiar and the new: the libretto, the musical score are

familiar. The stage re-constructs a new setting for the unfolding of the story. Re-making in this case is about the staging of the plays, the re-connection of two narratives: from re-using found objects in new contexts in order to produce new meanings and fabricate new representations to imagining narratives that spring from still images, infusing them into the stories.



Figure 2. Top: Scene from the *Cavalleria Rusticana*. Bottom: Scene from the *Pagliacci*.

Black and white photography, color photography, physical stage models, film stills, posters and paintings: they all form a pool of representations that are integrated into both plays. Rituals, objects, costumes, devices, are extracted, replaced and reused in a new context, both conceptually as well as materially. These representations try to convey the atmosphere of the plays, the transformation over time, the temporality which is inherent in the unfolding of each play on stage. They allude to both the time of the initial images as well as the time of the performance. Representations are intermingled one in the other.

B. "FROM FRAGMENTS TO SYNTHESIS: RESTORING FRAGMENTS OF INCOMPLETE WALL PAINTINGS FROM AKROTIRI IN THIRA AND MYCENEA IN THIVA.", NIKOLAOS SEPETZOGLOU.

Nikolaos Sepetzoglou is a painter and presented works or restoration of interior wall paintings in archaeological excavations. Archaeologists, researchers and artists attempt to restore the initial image of the wall paintings from found fragments and to offer an insight, an interpretation of what this image could have been.

Excavations and restorations work with highly specialized restoration processes and techniques. The archaeological excavation involves a large team from various disciplines and arts as well as skilled craftsmen. The classification and placement of fragments on their initial position on the mural are key to the re-structuring of the whole picture. Contrary to past restorations in archaeological sites, artists today are not free to imagine and propose a final image, but must present their proposal, even if incomplete, where each decision is well justified on solid evidence.

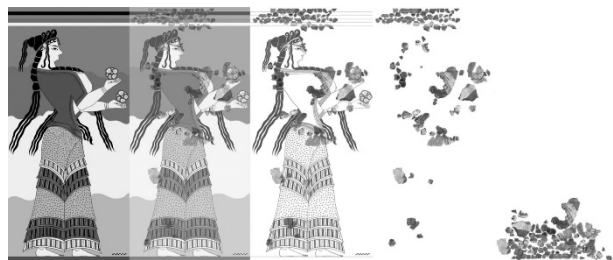


Figure 3. Woman's figure from the wall painting "Procession of women" at the Archaeological Museum in Thiva. Drawing: N. Sepetzoglou, 2015.

Another pre-occupation of the whole team is the reversibility of all actions, so that each restoration can be restored back to its initial state. A variety of painting and drawing techniques are used in order to document and study the fragments in the first place. After this stage, composite drawings and paintings gradually analyze and finally complete the image as far as possible. In many cases the artists would simply have to proceed on hypothesis and research: usually there is a great deal of uncertainty.

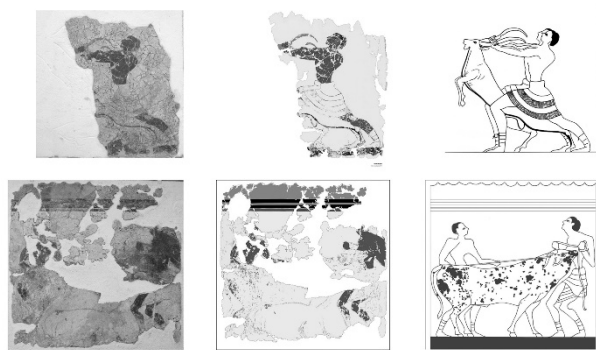


Figure 4. Wall painting compositions known as Wild Goat and Bull Hunters at the antechamber of Xesti at Akrotiri. Drawing documentation, restoration and representation. M. Sepetzoglou, 2013.

Re-making a destroyed image involves including traces of the past: it is a reconstruction of a representation, a remake of art of another age. It is these intermediate, hybrid drawings and techniques that reveal the power of the image and the potential of its interpretations. They reveal the thinking process of the study and the artistic work that supports it. Even though the final image remains the ideal goal, the re-making process is a most telling experience, communicated only through these complicated, hybrid, mixed media drawing constructions. These could be a template for many variations and alternatives of the initial image, and, given new evidence, are open to re-definition.

C. "OLYMPUS-NAOUSA" TWO FACTORIES, ONE COMPANY AND A REFERENCE BUILDING IN THE WATERFRONT OF THESSALONIKI., PROFESSOR VASILIS KOLONAS.

Professor Vasilis Kolonas presented the history of the building "Olympos-Naousa". The building is interestingly one of the buildings belonging to the city's historic waterfront, having been erected at the place of an older building destroyed by the huge fire in 1917, which wiped out the largest part of the commercial city center. The top floors hosted the offices of a brewery company.

The ground floor was the theater of the city's most renowned upper-class restaurant, a hub of cultural life and social gatherings.



Figure 5. The building of "Olympos-Naousa" on the waterfront of Thessaloniki in the 1930s.

Professor Kolonas's presentation unfolds the history of the building, using a variety of images: aquarelle paintings, ink architectural drawings, maps, city aeriels, interior photographs of the famous restaurant, posters. In its unique position the building itself was a re-construction of the waterfront's skyline, its height finally determined by the height of adjacent buildings. This decision reflects the mentality that prevailed for the reconstruction of the waterfront after the fire, that asked for low-key interventions as far as the old city fabric and skyline were concerned (a policy that changed radically after the 1950s). Through this series of different images we are able to mentally imagine another epoch, where different values and ideas shaped the urban environment. The presentation proceeds much further from the depiction of pure form, into a mental re-construction of the social conditions, atmosphere and the evolution of the surrounding city scape.

The images depicted serve as tools for documentation, as well as analysis. In this case they are closer to a type of "dialectical imagery" as suggested by Ian Bordain who speaks about the "imaging of architectural history—the process of interpreting and communicating architecture which necessarily involves images as an integral part of its operations" [28].

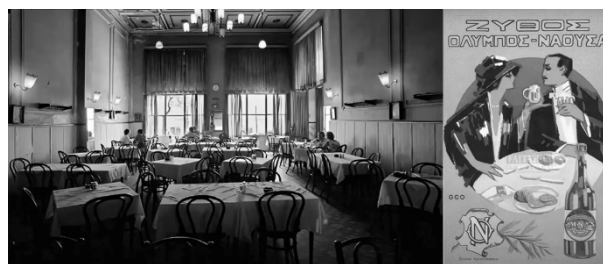


Figure 6. Left: Interior view of the restaurant "Olympos-Naousa". Right: Poster advertisement.

The architectural historian studies this building through the lens of re-making: he is no longer confined to photographs and drawings of a building, but uses any sort of reference as an archive, aiming to bring forth the forces at play that constitute the building's overall history

[29]. Any type of image is an archive, evidence of what once was. The plurality of images reflects the multitudes that finally shaped the building's evolution. Beyond its eclectic architectural style, itself a re-making of other architectural styles, it is precisely the making and remaking processes which shaped the building's history which are brought to the fore. This type of representation instigates thinking towards process rather than form per se. It paves the way for a mosaic of reconstructions of what once was, helping the historical analysis not only to provide explanations but to invite more explorations.

D. "OLYMPUS-NAOUSA" RE-FRAMING THE CITY'S WATERFRONT", ASSIST. PROFESSOR DIMITRIS THOMOPOULOS.

The architectural proposal for the re-design, re-use and re-construction of the building was presented by Assistant Professor Dimitris Thomopoulos. He described in sequence the analysis, documentation, design concept and unique features of the new building. The architects' presentation used a wide variety of representational tools: diagrams, maps, documentation photographs, architectural drawings, sketches, aerials, 3D models, 3D visualizations, street views, interior renderings [30]. Among all these, the architects stress that the creation of the 3D model was pivotal in the development of the project from the first stages of the design: from the detailed documentation of the building with its surroundings, to the formulation of the proposal, down to the final detailing. Once set up, the 3D model provided multiple instances, where through abstraction, the team could focus on certain issues solely or combined.



Figure 7. Design process for the new building in relation to the historic façade.

The building is re-designed and reconstructed from the beginning: only the historic façade is preserved, supported and re-integrated into the new entity. The façade is the main theme behind the whole building: it is preserved as faithfully as possible, aiming to fully reconstruct the previous urban experience from the street. Lines and proportions spread out to the new façade, which recedes from the old one. Everything is orchestrated through the special features and the limitations of the existing structure. While re-framing the new waterfront skyline, the new building is developed behind the historic façade, providing spaces for contemporary programmatic requirements and meeting current regulations and standards. On the interior, the re-design and re-construction aims to provide contemporary

quality without damaging its historic elegance, fulfilling client requirements.

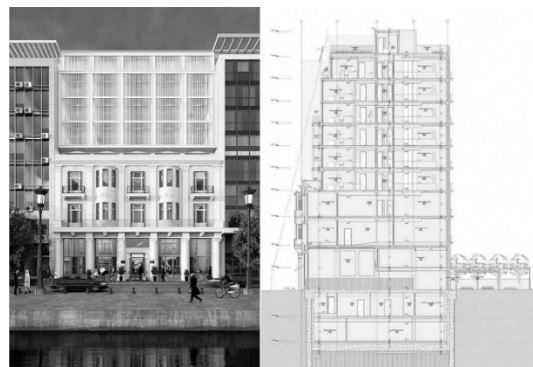


Figure 8. Left: Rendering of the final proposal for the building. Right: Building section.

All exterior views, 3D aerials, diagrams and architectural drawings depict a thorough analysis of the site and the existing façade. The representations visualize and follow the architects' line of thought as well as the emergence of the final concept. The 3D model was pivotal in ensuring the integrity of the proposal, while passing from the documentation to the proposal on every scale. The architects aim to show, beyond the building layouts and facades, the relation that ties the old with the new. Architects, due to the limitations of architectural drawings, are accustomed to dealing with a variety of representational tools [31]. Re-designing and re-constructing a historic building with a demanding program requires creative thinking and clever engineering. Since this building is inextricably tied to matters of visual relationships, the representations visualize, juxtapose and relate them, in order for the final proposal to emerge. These tools perform like thinking tools as well as documentation tools. They link thought and action in time.

E. DETAIL DESIGN OF THE STRUCTURAL RE-CONSTRUCTION OF THE FAÇADE OF "OLYMPUS-NAOUSA", DIMITRIS MITOLIDIS.

Dimitris Mitolidis is a civil engineer and the construction manager for the re-construction of the "Olympus-Naousa" building. His presentation aimed to show images "from behind the scenes": construction details and processes from the actual building site. After having been presented with the design proposal from the architects, the audience now was witnessing the special structural features and elaborate detail that gave life to the proposed design.

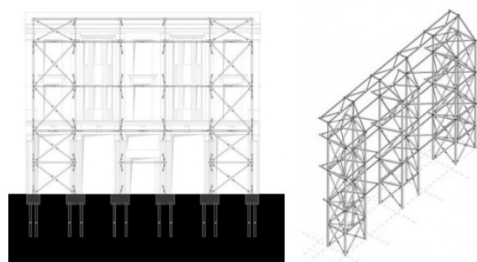


Figure 9. Left: Drawing of the supporting structure of the historic façade. Right: 3d view of the supporting structure.

Images involved architectural drawings, composite architectural and structural drawings, 3D rendering of the complex supporting structure of the historic façade, constructional details, images of the building and images of the construction processes, depicting people and tools. It is a testimony for the particularities of the conditions on site and the constructional technologies employed. These are to be future archives of otherwise hidden structures, removed parts of the building, processes that will not be repeated: immaterial and material forces that shaped the final building.



Figure 10. View from the interior of the construction site, from behind the supported historic façade

The documentation of the re-construction of the building unfolds all constructions over time and could serve, in the future, as a tool for re-making of other similar projects. The images could, one day, serve as evidence, an archive to the historian of the future.

F. "ME, YOU, WE: PLAYING WITH THE GRID",
SPYROS KOKKINOS.

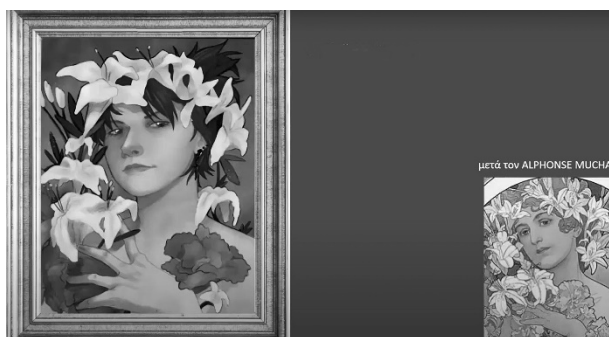


Figure 11. Student project of painting of a self-image: setting after a selected painting, transfer through the grid successively on different media, to the final painting.

Spyros Kokkinos, a painter and member of the Department of Interior Architecture Laboratory Staff, presented a workshop that took place in a unit taught at the Department, where a game was set up, based on transformations of self-images through a grid. After having highlighted the presence of the grid as a conceptual, organizational and formal device through the main art movements in the 20th century, the students' work proceeds to an analysis of self-images (photographs), their transposition to another medium through a grid and their reconstruction in a self-portrait (painting). On the next phase a self-picture is reconstructed through a grid, both as a sketch and as a digitally edited image. These two are intermingled, through a grid, in an attempt to redefine new identities, collectively and individually.

Remaking in this case takes place in the realm of representational techniques and media. The deliberate intermingling of devices (the grid) with representational techniques and different media (painting, pencil sketch, digital image), sets up a game, with no specific end: the experimentations can be limitless. Each image is never final: it documents a particular moment of the game and, gradually, the whole process.



Figure 12. Digital grid transformation of frontal self-images realized through different media.

These seemingly endless new associations created is characteristic of the creative potential of the grid, coupled with the intermingling of facial representation techniques and representation media, that alludes to the emergence of new identities. The grid by itself would not have been enough to test the boundaries of facial recognition: the range of deformations and re-interpretations is provided by the range of different representational techniques. Time again is a factor imbedded in the process and re-making gains significance as a part of continuous unfolding. It is also a learning tool, where the students can analyze, define and challenge the initial image, both in terms of meaning and in terms of technique.

IV. CONCLUSIONS

Re-making, through the constraints of the existing, provided all speakers with a common problem and therefore the representations employed were expected to be diverse, fulfilling multiple roles: documentation, analysis, heuristics, diagramming, synthesis. The discussion following the presentations revealed the shared interest from each field for the process of re-making and the particularities of the other fields. Most apparent was the great interest in the reasons that shaped every project rather than the final outcome: the presenting of the process was linked to the representations it involved. All speakers shared representations that performed as thinking tools: from the photography search in stage design, to the multiple urban images of the historical analysis of "Olympos-Naousa", the 3D instances of the architectural proposal, the 2D and 3D drawings of the supporting façade structure, the composite restoration drawings of the murals, the grid games with mixed media of self-images. The new narratives that emerged are inextricably tied to the process representations, making time a substantial feature in them. Each project was a novel approach to specific problem and the solutions

proposed were the outcome of collective creative thinking. It showed that the varied use of similar and different representations was pivotal in understanding and communication between all involved in the formation processes of each project. Representations performed as creative devices for processes of re-making, providing a stimulating environment and common ground for both arts and engineering.

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