Other Environmentalisms: Resisting Colonial Legacies in Architecture Education

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Keywords: Pedagogy, post-colonial, environment.

The paper describes a teaching pedagogy deployed simultaneously in a seminar and design studio, titled Other Environmentalisms. The pedagogy critically examines and reimagines the production of contemporary architecture in the Middle East and North Africa (MENA) by interrogating the relationship between architecture, the environment, and colonial legacies. This has been developed within two ongoing challenges in the MENA: 1. The erasure of nuanced cultural specificities in the architectural imaginary; and 2. Climate crisis.

Specifically, the paper problematizes how teaching about the environment in MENA's architectural institutions, especially those driven by North American curriculums, reproduces a problematic form of Environmental Orientalism. By Environmental Orientalism I mean the systemic weaponizing of narratives that conceal the heterogeneity of the biophysical environment of the MENA, amplifying narratives around the homogeneity of a hot desert barely able to support a struggling pastoralism. This also permeates contemporary architectural production in the MENA and is made doubly problematic when the majority of the student bodies originate from diverse ends of the MENA.

The paper is structured in three parts. First, I will unpack the theoretical framework and contextual background that enables the integration of orientalist critiques and environmental history methodologies. Second, I will outline a seminar course structure and the narrative logic that investigates these issues. Finally, I will describe the application of this framework into a design studio environment.

INTRODUCTION: A POST-COLONIAL CLIMATE CRISIS

It is no coincidence that within one week in October 2018, the UN Intergovernmental Panel on Climate Change (IPCC) announced that an increase of 1.5 degrees Celsius, projected to occur between 2030 and 2040, will have catastrophic environmental consequences, and that the Prize in Economic Sciences in Memory of Alfred Nobel 2018 was awarded to William D. Nordhaus for his work on the relationship between economics and climate change. The events of that week highlight how the global climate crisis continues to create existential environmental, social, cultural and economic challenges that have recently climaxed with emergent events like the Global Climate Strike in September 2019 that views previous international calls to action through policy and implementation, such as the 2005 Kyoto Protocol and the 2016 Paris Agreement, both set out by the United Nations to address climate-driven challenges, as projects in need of urgent redressing.

Urgency has also started to come frequently and consistently from beyond mainstream climate experts. For example, Naomi Klein, an author known for her previous work on globalization and capitalism, has turned her attention towards the climate crisis with her last two books, *This Changes Everything: Capitalism vs. The Climate*, and more recently, *On Fire: The (Burning) Case for a Green New Deal*. In this new body of work Klein argues for the need for a "radical change on the social side, as well as on the political, economic, and cultural sides"[1]. In parallel, renowned post-colonial theorist Dipesh Chakrabarty has urged social scientists to turn their attention to the climate crisis as the most urgent issue of our time[2].

The urgency declared by Chakrabarty, and the implicit post-colonial critique driving his proverbial call to arms, highlights the relationship between the climate crisis and empire building. The role of the environment in empire building is well documented, and its relationship to the contemporary climate crisis does not require significant leaps of logic. In a significant work that is aptly titled *Ecological Imperialism: The Biological Expansion of Europe, 900-1900*, ecological historian Alfred W. Crosby argues that "European imperialism has a biological, an ecological, component."[3]

This historical, systemic and exploitative relationship between empire building and the environment is at the heart of the arguments laid out in this paper, which argues that uncovering and rethinking the relationship between colonial practices and discourse around the environment in the Global South and contemporary architectural practices reveals systemic problems with contemporary architectural production that can be resisted through developing new pedagogical models of architectural education in the now post-colonial Global South.

The development of new pedagogical directions within architecture education in the Global South is especially important given that, generally, architectural responses to the climate

crisis have been largely myopic and driven primarily by techno-logical positivist attitudes occupying mainstream conversation around developing codified technological solutions[4]. This has resulted in an ongoing erasure of context-specific historical and cultural practices around the environment that misses an opportunity for providing alternative solutions that overcome the homogeneity resulting from techno-optimist attitudes that continue past problematic practices.

The paper presents its response to these problems through describing a teaching pedagogy, titled *Other Environmentalisms*, deployed simultaneously in a seminar and senior undergraduate design studio in a MENA institution that very closely follows a North American architectural education curriculum.

The paper is structured in three parts. First, it will describe the ideas driving the development of the Other Environmentalisms agenda, as well as its aspirational goals and objectives. Second, the paper outlines how this theoretical framework shapes the structure, content and delivery of a seminar course that runs simultaneously alongside a senior undergraduate architecture design studio. Third, the paper describes the application of this framework into the design studio environment. In this section, this paper will focus on a single studio iteration that examines the architectural potential of the *Plan Maroc Vert* (Green Morocco Plan), an ambitious plan that aims to tackle current impacts of climate crisis on the Moroccan landscape and economy.

ENVIRONMENTAL ORIENTALISM

Teaching about the environment in MENA's architectural institutions, especially those driven by North American curriculums, reproduces a problematic form of Environmental Orientalism[5]. By Environmental Orientalism, I mean the systemic weaponizing of narratives around the natural environment in the MENA that conceals the heterogeneity of its biophysical environments. This attitude amplifies deterministic narratives around the homogeneity of a hot desert barely able to support a struggling pastoralism. Be extension, this attitude continues to permeate contemporary architectural production in the MENA through project narratives and material and spatial solutions that ignore the diversity of the biophysical environment. This is made doubly problematic when the majority of the student bodies within these institutions originate from the diverse ends of the MENA.

Orientalism, a concept coined by Edward Said in 1978, describes the historical and systemic othering of the East by French and British imperial knowledge production. In his book of the same name, Said argues that the "the Orient was almost a European invention, and had been since antiquity a place of romance, exotic beings, haunting memories and landscapes, remarkable experiences."[6] The architectural relevance of Orientalism is hardly invisible, too. Historian Sibel Bozdogan describes how architecture becomes a tool in "how a culture is perceived, described and ultimately reconstructed by another, often gravely reducing, schematizing and distorting the image according to the predilections of the beholder."[7]

Geographer Diana K. Davis points to the practices by imperial powers in MENA that aimed at othering the environment to facilitate and justify imperial goals[8]. Therefore, Environmental Orientalism can be seen in the direct lineage of Said's work. A historical example of this practice can be found in British satirical novelist William Makepeace Thackeray's 1846 *Notes from a Journey from Cornhill to Grand Cairo* in which he describes the landscape while travelling in the Levant:

> The mountains round about us dark, lonely, and sad; the landscape as we saw it at night (it is not more cheerful in the daytime), the most solemn and forlorn I have ever seen. The feelings of almost terror with which, riding through the night, we approached this awful place, the centre of the world's past and future history, have no need to be noted down here. The recollection of those sensations must remain with a man as long as his memory lasts; and he should think of them as often, perhaps, as he should talk of them little.[9]

This paper build on Davis' work by arguing that there is a discursive continuity between colonial environmental narratives and contemporary discourse around sustainability in the MENA region, cloaked within seemingly neutral greening projects. Furthermore, I also posit is that the emerging but still limited critical discourse around environmental orientalism is currently limited in scope to traditional historical narratives and has not yet been researched through the lens of its relationship to the built environment, both historical and contemporary.

The paper posits that colonial environmental manipulation under the guise of environmental protection and environmentalism set the stage for an ongoing colonialism which works "to assimilate diverse cultures and spiritual traditions into a homogenous code."[10] Therefore, resistance can be formed by integrating a critical environmental history methodology into architectural discourse and design. This enables students (i.e. future professionals and researchers) to rethink of the relationship between historical environmental narratives, techno-scientific environmental solutions, as well as their post-colonial context in the Global South in general, and the MENA region in specific. This raises the following questions that can be resolved through integrating architectural and environmental history methodologies: What is the relationship between contemporary MENA architecture and colonial legacies vis-à-vis the environment? How do the ideologies and practices of Environmentalism impact MENA architectural practice? And finally, what are non-Western designers to do in the face of ongoing Orientalism and the growing threats of climate change?

ENVIRONMENTAL HISTORY

Unpacking the role of Environmental Orientalism can be supported through looking at the relationship between Environmental and architectural histories. Environmental history is a relatively new field of study that coincides with the

rise of environmental consciousness in the latter part of the 20th Century and aims to unpack the bilateral historical relationship between humans and changes in the environment.

There are three general methodologies utilized in research and production of environmental history: 1. Studies of changes of the environment (e.g. Mapping distribution of arable land in a region); 2. Studies in human responses to issues within the environment (e.g. Policy responses to climate change); and 3. Studies of human cultural production that examines the environment (e.g. Painting practices engaging the natural environment)[11].

There are three-fold advantages for thrusting environmental history methodologies into contemporary architectural pedagogy in the MENA. First, despite the recent productive output of the discipline globally, the environmental history the Middle East and North Africa (MENA) remains nascent and even then focuses primarily on Ottoman centers and provinces given the wealth of those archives, to the detriment to other regions within the MENA.

Second, the paper identifies that there is a general gap within environmental history as a discipline, in that it does not directly engage with the relationship between environmental history and the history of the built environment. This presents an opportunity for architectural research to uncover past, present, and future relationships between the MENA's natural and built environments. This intersectionality seems to be emerging in other disciplines dealing with similar issues, as Graham Huggan & Helen Tiffin argue by stating that "environmental studies can learn much from postcolonial theory, while the general neglect of environmental issues in postcolonial studies sorely needs to be addressed."[12]

Finally, the three research focuses of environmental history described above closely mirror architecture's material, political and cultural registers, making an intersection of both disciplines an extremely productive endeavor.

OTHER ENVIRONMENTALISMS

For architecture to become instrumental in the midst of the contemporary climate crisis, with roots in historical colonial practices and discourses, it is important to deploy architecture's technical and cultural agency to critically re-examine how specific colonial practices and discourses about the natural environment have affected the trajectory of human development, and by extension, the built environment, in the MENA.

As such, this paper presents a response to this line of inquiry through describing an architectural agenda, deployed as a teaching pedagogy, title Other Environmentalisms. This teaching pedagogy aims to activate MENA environmental practices to drive innovative contemporary building solutions by exploring context-driven modes of production, alternative material systems, and the relationship between environmental and architectural imaginaries.

Focusing on the material and the cultural aspects of the MENA environment, this pedagogy deploys environmental history methodologies and material research to generate architectural conditions that exhibit alternative attitudes to making and assembly to mainstream sustainable architectural production. The goal of this pedagogy is to encourage students to challenge deterministic ideas about the MENA natural environment which limit architectural discourse and production in the MENA.

The pedagogy critically examines and reimagines the production of contemporary architecture in the Middle East and North Africa (MENA) by interrogating the relationship between architecture, the environment, and colonial legacies. This has been developed within two ongoing challenges in the MENA: 1. The erasure of nuanced cultural specificities in the architectural imaginary; and 2. Climate crisis.

Uncovering and highlighting the relationship between the natural and built environments in the MENA through this lens allows students, myself as a faculty member, and other faculty members, who are primarily western, to investigate, or at the very least, confront the following deeply architectural questions: What is the relationship between contemporary MENA architecture and colonial legacies? How do the ideologies and practices of Environmentalism impact Arab architectural practice? What do colonial legacies have to do with environmentalism, and how does this shape architecture? And finally, what are non-Western architects to do in the face of ongoing Orientalism and the growing threats of climate change?

In confronting and investigating these questions within the context of MENA architecture education, Other Environmentalisms aspires to enable future architects to think critically about their role in the production of a post-colonial built environment that is deeply intertwined with consistently deterministic ideas about the natural environment. As such, the pedagogy encourages the critical examination and reimagining the production of contemporary architecture in MENA by interrogating the relationship between architecture, the environment, and colonial legacies. This has been developed within two ongoing challenges in the MENA: 1. The erasure of nuanced cultural specificities in the architectural imaginary; and 2. Climate crisis.

THE DISCURSIVE ANGLE

This section outlines the structure, content and delivery methods of a seminar course that integrates readings and discussions around Orientalism, Environmental Orientalism, Environmental History, as well as colonial and Post-Colonial architecture in the MENA. This course began as a standalone

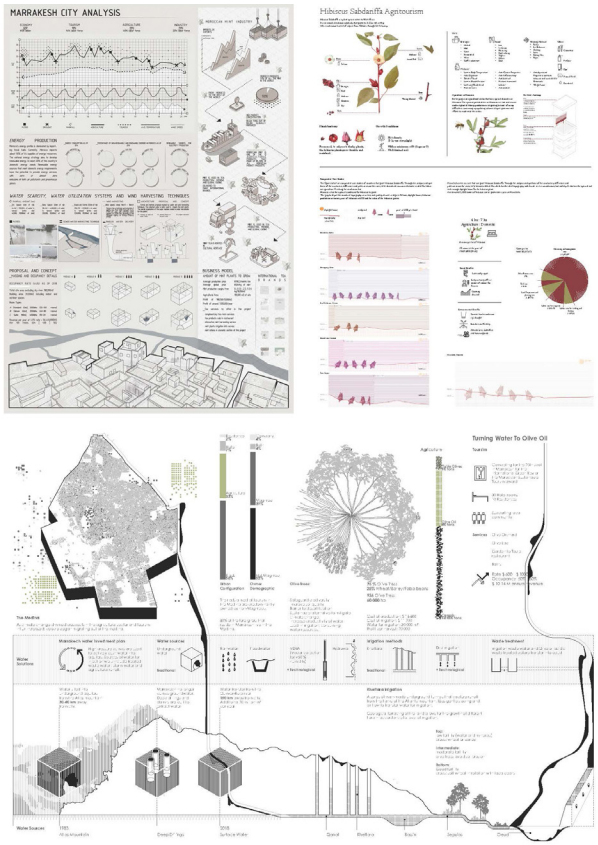

Figure 1. Sample of infographics produced as part of the research. This exercise enabled students to identify specificity in the agri-tourism program including crop selection. Student work by Sundos Sibai + Nohair Elmessalami, Jumanah Rizk + Basel Altaher, Jawaher Almutairi + Zeenah Mahmoud.

condition in Spring 2018 and ran in parallel with a senior undergraduate architecture studio the following year in Spring 2019.

The course is structured in two consecutive parts. First, the readings build up in complexity by introducing the concepts of Orientalism, Environmental Orientalism, and environmental history. Second, the seminar moves towards a case study approach, with each week looking at a specific territory within the wider region to unpack the relationship between colonial architectural practices, the construction of an environmental imaginary, and the case study's actual environmental history. Thus, the structure and content of this seminar aims to enable the students to achieve the following learning outcomes and tools:

1. Understand the conceptual framework of Orientalism and its relationship to architecture, the environment, and nation building in the MENA with a specific focus on viewing it through the lens of Environmental Orientalism.

2. Deploy research methodologies used in environmental history into architectural research. This is due to the close proximity between the material, political and cultural components of both disciplines.

3. Identify the differences amongst colonial practices as it relates to the environment and architecture across the region.

4. Contextualize the emergence of post-colonial architecture practice in the MENA and how these practices, and critical analysis of these practices, might influence contemporary architecture culture in the region.

5. Develop critical positions about contemporary architecture education and practice in the region.

Student assessment occurs in three key ways. First, students undergo a thorough research project that results in written text, photographic documentation and a final oral presentation. The students focus their research on an infrastructural project within the immediate surrounding region (Exact location to be revealed after the peer-review process). The criteria for selection of sites or objects of research include its historical relevance vis-à-vis nation building, the inherent relationships it presents with some form of shaping or manipulation of the natural environment, accessibility to an archival record, physical access to the site itself for the purposes of photographic documentation, and most obviously, its viability to be researched, documented and written about within the context of the ideas in the course. The second assessment method focuses on in-class discussions. Given the nature of the seminar, critical discussion and discussions form a large portion of the assessment tools, given its central role in this kind of student learning experience. Finally, short reading responses are submitted by the students prior to every class for assessment. These in turn inform the in-class discussions.

DESIGNING OTHER ENVIRONMENTALISMS

Finally, the pedagogy described above was deployed into a design studio environment. The studio represents how the seminar discussed above helps students and unpacks how a critical assessment of the existing literature enables the deployment of environmental history methodologies into an architectural design process that resists orientalist clichés around the environment. The paper will focus on a single studio iteration that examines the architectural potential of the Plan Maroc Vert (Green Morocco Plan), an ambitious plan that aims to tackle current impacts of climate crisis on the Moroccan landscape and economy. The studio output includes infographics, academic research, architectural drawings, and physical constructs, all produced in a circular fashion, with each component providing feedback for other components of the project. The project brief challenged students to integrate the critical and analytical tool developed in the seminar with controlled material studies and developed space-making techniques to produce projects that resist orientalist homogeneity.

The students responded to the questions raised within the agenda through developing an agri-tourism project that integrates economics, agriculture, infrastructure and architecture, situated

Figure 2. Images from a project that utilizes earthen materials to drive innovative contemporary building solutions and space conceptions. Student work by Sundos Sibai + Nohair Elmessalami.

in Marrakech, Morocco, on a 120,000 m2 site on the eastern edge of the Oued Issil, a dry river that undergoes extreme flash flooding once or twice a year due to heavy rains from the Atlas Mountains south the city. In general, the project required working across scales, integrating masterplan strategies that integrate the agricultural research component with the design of single unit conditions of the eco-tourism project, as well as all support conditions.

Specifically, the project narrative was designed around a fictional project for The International Center for Agricultural Research in Dry Areas (ICARDA), although probable, given that it already operates major activities in Morocco. ICARDA is a non-profit global research-for-development organization that works to create sustainable communities in dryland areas through primary focus on agriculture[13]. While ICARDA's actual sites are typically non-urban, this project's proximity to Marrakesh's old Medina, it requires solutions that integrate environmental sustainability with economic, social and cultural activities. Therefore, the project's challenge expanded beyond the scope of a traditional architectural project, and was meant to develop narratives its larger socio-economic impact on the area, with emphasis on both the human and natural element, by providing job opportunities, a source of continuous income to fund the agricultural research, as well as promote the spatial and material culture of the region in the face of ongoing environmental orientalism.

In reality, ICARDA does not run commercial entities such as an agri-tourism project. As such the students conducted extensive research on both agriculture and tourism in Morocco to develop a business model that drives the project's conceptualization. Questions asked in this stage included: What is the agricultural research to be conducted here by ICARDA? What crops you will grow? How many plants will there be? What would their yields be? How many tourism opportunities would you provide? What is the percentage breakdown between the agricultural and tourism spatial components? These questions were tackled and presented in the form of an infographic, which itself remained a living document that evolved throughout the project (Figure 1).

Next to the continuously evolving infographic, the students worked to develop integrated material and spatial systems that can be deployed at an architectural scale. The spatial/material strategies developed through an iterative messy process. In general, there emerged three design strategies in which the projects can be grouped: 1. Material; 2. Cultural; 3. Technological. It must be noted that these groupings do not erase the fact that all projects were encouraged to address all three components, however, these categories are used here as a tool to describe the different focus areas, and related discussions and critiques, that emerged throughout the studio.

First, the studio attempted to rethink the role of vernacular materials, and the deterministic narratives around the use of vernacular materials in contemporary professional practice. This design strategy was supported by developing attitudes towards it in the seminar. For example, thorough analysis and discussion of Hashim Sarkis Studio's use of sandstone in the 2016 building, Byblos Town Hall, in Byblos, Lebanon[14]. According to Sarkis, the office was "somewhat uneasy"[15] about its use due to its technical deficiencies, despite the fact that it became a material that "evoke(s) a sentimentalized, Lebanese/ Arab muddled past that never was"[16] in the period after 1990. The results from this strategy varied, including projects that used rammed earth as both, a form/space finding exercise as well as a final material deployed in ways that might not have been technically possible in a purely vernacular mode of construction, such as raising it above ground level of concrete slabs and breaking its typical reading as discrete walls as can be seen in Figure 2. Another example to highlight the potential of working through a site's existing material condition attempted to the potential of integrating agricultural techniques deployed on the site, such as different ploughing patterns, to create a tilt-up concrete wall system while controlling variable flows of concrete casting to allow for the emergence of an integrated two-type surface condition. An example of this approach can be seen in Figure 3.

The second design strategy aimed at uncovering cultural histories in developing the programmatic, material and spatial conditions of the project. An example of this includes a project that builds on Morocco's historic relationship with honey making. Thus, the project shown in Figure 4 acts as an architectural response to the disappearing bee population of Morocco. As such, the project develops wall systems that act as beehives set within a public agricultural park focused on hibiscus growing, a primary crop in the enhancement of bee populations.

The third design strategy looked at the technical components of agriculture as a generative tool. For example, the project shown in Figure 5 focused on issues of water scarcity and the wasteful water transport (over significant distances) and storing found in typical agricultural land across Morocco. As such, a water reservoir-come-hotel lobby, as well as a water distribution system for drip irrigation of olive groves, become the primary space making tools for the project at both the masterplan and human scale. Protecting the reservoir from heat becomes a impetus to develop a public park on top, and furthermore, the project advances its water collection goals by designing wall and column conditions that aim to maximize water collection and subsequent integration into the main water network whenever it rains.

CONCLUSION AND FUTURE TRAJECTORY

While the issues described above are far too complex to be resolved within a single coupling of a seminar and design studio, there is room for this coupling to achieve greater success. The value of techno-optimist solutions should not be ignored, and techniques such as off-the-shelf energy modeling for building design should be integrated with the cultural and context-specific solutions designed within the studio environment. This attitude would provide a valuable quantitative component into the feedback-loop driven design process described in the section above.

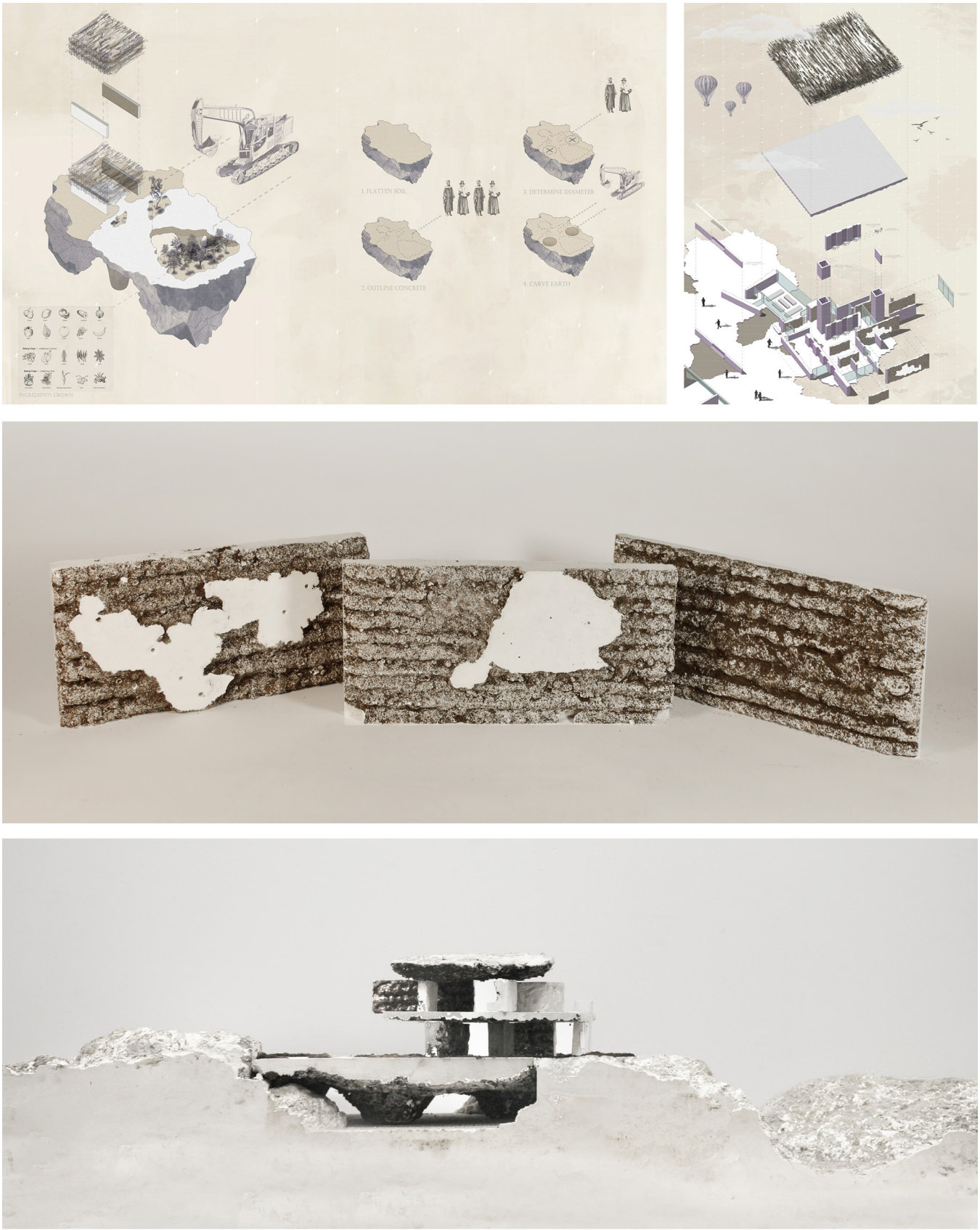

Figure 3. Drawings and models from a project that investigates the potential of integrating agricultural techniques deployed on the site to create a tilt-up concrete wall system. Controlling variable flows of casting allows for the emergence of an integrated two-type surface condition.Student work by Lina Saadi + Adomas Zeiniddin.

Figure 4. Images showing a wall system designed as a collective beehive and structure for an urban park made primarily by planting hibiscus, a plant that helps support growing bee populations. Student work by Jumanah Rizk + Basel Altaher

ENDNOTES

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4. The Author has described this issue at length in a previous essay. Tabbarah, Faysal. 2015. "Almost Natural Things: Aesthetics and Production." In Proceedings for 2015 TxA Emerging Design + Technology, 2015, 88-99. Dallas: Texas Society of Architects.
5. See Davis, Diana k. "Imperialism, Orientalism, and the Environment in the Middle East." *Environmental Imaginaries of the Middle East and North Africa* (Ohio University Press, 2011): 1–22, for her discussion around the practices by imperial powers in MENA that aimed at othering the environment to facilitate and justify imperial goals. I take this thesis further to suggest that there is a discursive continuity between colonial environmental narratives and contemporary sustainability discourse about the region, overcoming seemingly neutral greening projects. This is irrespective of how supported this discourse might be by scientific knowledge, given the history of colonial actors manipulating scientific knowledge. I also posit is that the limited discourse around environmental orientalism is currently limited in scope to traditional historical narratives and has not yet been researched through the lens of its relationship to the built environment.
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15. Ibid.
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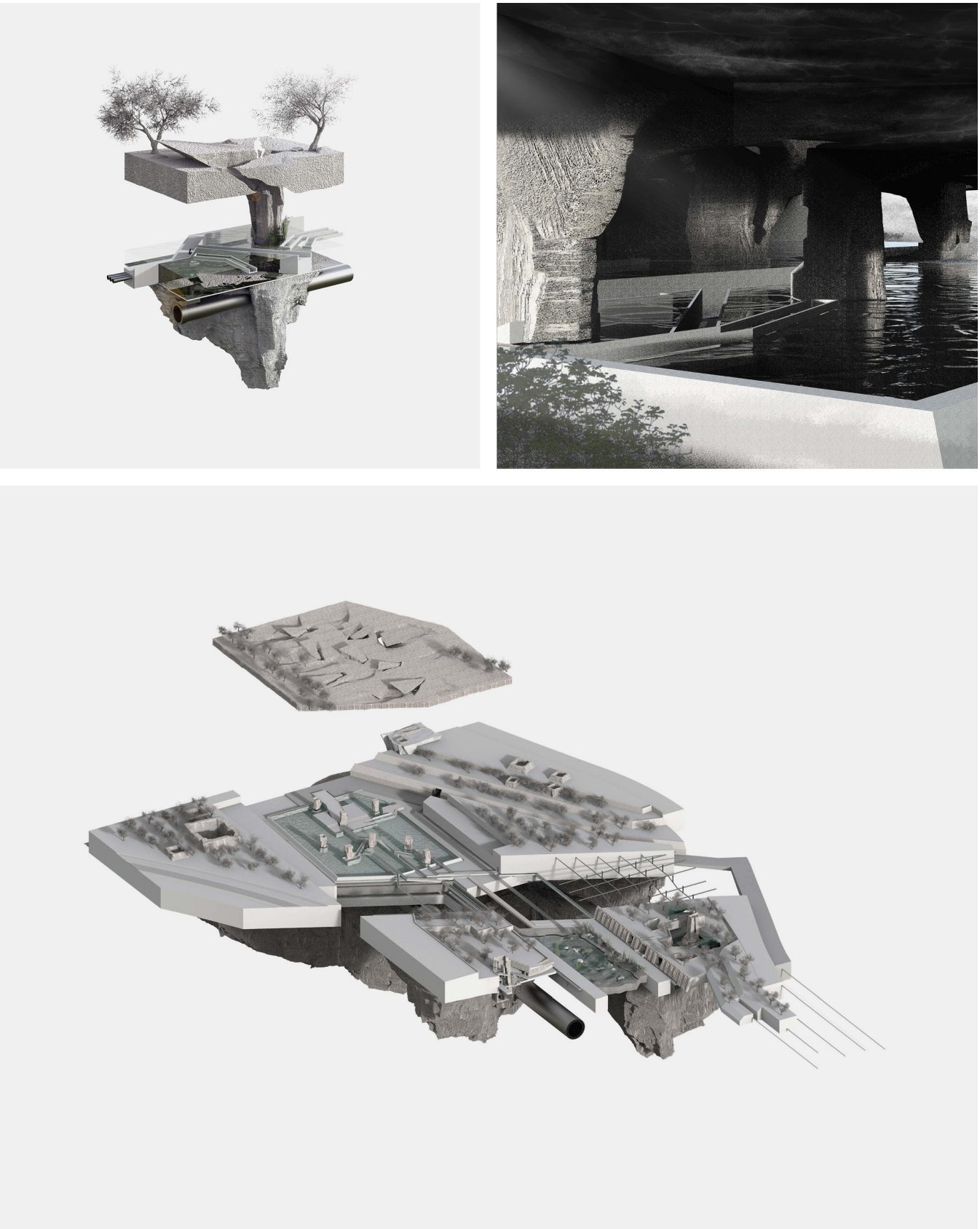

Figure 5. These images portray a project that focuses on issues of water scarcity and the wasteful water transport and storing found in typical agricultural land across Morocco, where a water reservoir-come-hotel lobby and a water distribution system for drip irrigation of olive groves, become the primary space making tools. Student work by Jawaher Almutairi + Zeenah Mahmoud.