

# Digesting Gastroitecture

A constellation of associations between  
Architecture and Gastronomy

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## CONTEXT

This fourth issue of the UNIVERSITY of Universities Scientific Journal, titled *Gastroitecture*, aims to achieve a broader understanding of the intertwined relationships between architecture and gastronomy, expand the limits of both disciplines and register the emergence of new practices supported by innovative and unconventional approaches from design and technology. *Gastroitecture* has invited academics, researchers, designers and students to contribute with their works that broadly converge architecture and gastronomy and openly understand their borders.

The UOU scientific journal, has experienced several transitions since its birth in Sweden in November 2020 in the framework of a research seminar on the topic of International Research hosted by the Umea School of Architecture (1). *Gastroitecture* collects works and projects developed during the pandemic and also incorporates contributions and face-to-face experiences of this post-pandemic period in which we find ourselves. However, the singularity of this issue would not be “coming back to normality” but having invited a discipline other than architecture to reflect on the need for interaction between different fields and their visions of the future. It allows architecture and gastronomy to expand their applications within the contextual urgency to acquire new skills for having a global idea of our realities. *Gastroitecture* seeks to holistically offer a more comprehensive picture of today's education and research and presents works aiming to inspire educators, students, professionals and researchers.

In *Atlas of emerging practices, being an architect in the 21st century*, the project New Generations, developed by

Itinerant Office in 2013, was presented by Gianpiero Venturini. The project looked at how the architecture industry changed after the financial crisis. It examined the careers of selected 95 young, emerging architects from 22 European countries to give architecture students, recent graduates, and emerging firms essential tools and information in the early phases of their careers. Other architects like Alejandro Zaera-Polo also did a sweep on the state of the profession. In his article *Well Into the 21st Century. The Architectures of Post Capitalism*, published in the 187 issue of *El Croquis* magazine, mapped and categorised architecture studios based on their emerging ways of practising and understanding the profession. The architect and academic Juan Herreros, in conversation with Nikolaus Hirsch and Nick Axel spoke about the obsolete vision of the architect as an orchestra conductor, which he classified as unsustainable in our times. He proposed instead that “*Our work today is closer to a DJ, using fragments, identifying moments, confronting inputs and information from very different people and knowledges*” (2).

The pandemic outbreak in 2020 once again forced the need to reinterpret architectural design and practice radically. The shortcomings of our built environment were highlighted during confinement and social isolation, and, the university education had to reinvent itself. UNIVERSITY of Universities is a novel alternative to the current options of remote teaching, which are similar in most schools in the European context. Likewise, the UOU scientific journal represents this singularity as a great opportunity. *Gastroitecture* has sought to be a call to show diverse works representing multidisciplinary practices that facilitate innovation. Innovation has been framed lately as the constant to be fully incorporated into our work routines, becoming

today one of the critical factors for the survival over time of any company in an era of ever-changing professions.

Delving into the pairing of architecture and gastronomy, Samantha L. Martin-McAuliffe discusses the shared attributes between eating and building and how food studies and architecture can learn from each other in her book *Food and Architecture at the table*, Bloomsbury Academic, 2016. It is the first book that explores, interrogates and illuminates the reciprocity between the vocabularies of these two fields in the present day, focusing on the four most repeated and debated shared terms: regionalism, sustainability, craft and authenticity. (3) *Gastroitecture* intends, more than making a terminological classification, to bring a diversity of voices that illustrate new multi, inter and transdisciplinary<sup>1</sup> bridges that are relevant today through dyads or “bigamies” understood as seemingly improbable pairings that result in new genres. The range of voices contributing to this issue and finding an intersection between architecture and gastronomy in their work goes from Architects, Professors and Students of Architecture to Physical Biochemists, Gastronomic Scientists, Experimental Psychologists, Sociologists, Experts in Future & Virtual Environments and Food Designers.

## THE CALL

“*Architects, like chefs, turn the raw into the cooked, transforming basic materials into an end product. In both cuisine and architecture, a sensory and social world opens up from the perfect combination of elements brought together in time and space. The two practices answer the mere necessities of life, shelter and food, but both can transcend the prosaic to reach a higher level of culture*” (4)

*Gastroitecture* presents itself as

the hybrid between gastronomy and architecture. Gastronomy means the art of eating, from the Greek *gaster* 'stomach', and *nomos* 'law'. (5) Architecture means the art of building, from the Greek *arkhitéktōn* (architect), *arkhi* 'chief' and *tektōn* 'builder' (6). Both gastronomy and architecture are part of our everyday life, as an expression of cultures, as an interdisciplinary practice involving senses, combining materials, defining structures and forms of living together involving a social dimension.

On the one hand, the architect Bjarke Ingels names these hybridizations "bigamy" and describes it as *"taking multiple designable elements that may not seem fit together, and merging them to create a new creation or genre."* (7). This thinking allows us to step out of the accepted parameters of any field, such as architecture or gastronomy, and in doing so, bring life to new ideas that previously seemed impossible or unheard of. On the other hand, Daniel H. Pink speaks of the end of the "Knowledge Age" and the beginning of a new era, the "Conceptual Age", where the future belongs to a type of person with a global and creative vision. That seeks transcendence instead logical, linear and computational capabilities, typical of the information age. (8)

Gastroitecture aims to achieve a broader understanding of the intertwined relationships between architecture and gastronomy, expand the limits of both disciplines and register the emergence of new practices supported by innovative and unconventional approaches from design and technology. Gastroitecture invites authors to converge architecture and gastronomy, understanding their borders broadly. Multi, inter and transdisciplinary expressions and research through the proposed but not limited "bigamies" and keywords listed below:

### **Time, Space & Food**

Relationships between food elements, ways of cooking, presenting, serving and tasting rituals, and food to human body relation, context and space surrounding it. Unconventional culinary spaces. Scenographies and artistic approaches to gastronomic spaces and table settings. Cum-edere "to eat with", unprecedented visions of gatherings around food. Atmospheres / Symbolisms / Time / Spaces for food

### **Cities & Food**

Architectural and urban solutions bearing food industry issues and facing the challenge of how to feed a growing population without destroying its natural resources. Conciliation between food production, habitat, environmental impact, health, consumption and waste management. Circular gastronomy and sustainable cycles in the food industry. Living architectures: building with organic products and materials derived from food. Architecture defined by farming and its processing. Form follows food

### **Farming & Space Food**

Food and farming systems for outer space. Farming solutions on sites with extreme environmental conditions

### **Sci-Fi & Food Design**

Food that brings us the future. Culinary outputs where food, hardware and software intertwine cross methodologies and visionary settings. Kitchens as Fab Labs. Advanced food design. Food & Algorithms: Parameterization and computational design applied to food. Food genotypes, evolutionary optimization. Gastrophysics. Food tech. Future's food

### **Graphics & Food**

Graphic expressions of food,

from analog representations to open forms. Food & geometry. Food graphics & codes. 2d, 3d, 4d, 5d representations. Visual narratives. Drawings / Notations / Mappings / Models / Collages / Montages / Diagrams / Simulations /

### **Future Environments & Food**

Emerging practices of architectural design entering the field of future environments and Metaverses, proposing unseen forms of creation and experimentation of food and space. Virtual-Mixed-Augmented-Extended Realities advancing the Human-Food interaction (HFI) that will play a significant role in future human behaviors, gastronomic experiences, socializing and finance. VR / MR / AR / XR / Metaverses / Metafood / NFT / Web 3.0

### **Multisensorial Experiences & Food**

Natural and artificial multisensory creations around food. Neurogastronomy. Psychological comfort. Sensory disturbances. Food Pairing / Food Bridging. Tools and tableware as sensorial stimuli

*"All the senses, including vision, are extensions of the tactile sense; the senses are specialisations of skin tissue and all sensory experiences are modes of touching and thus related to tactility. Our contact with the world takes place at the boundary line of the self through specialised parts of our enveloping membrane."* (9)

Twelve articles and an atlas of student works are presented in this edition of UOU Scientific Journal to introduce you to the realm of Gastroitecture. The contributions touch on more than one of the aforementioned keywords. As the issue's editor, I opted to structure the sections as "bigamies" of linked ties between gastronomy and architecture. Following this classification, you

will read one article related to Time, Space & Food, four articles related to Cities & Food, two articles related to Farming & Space Food, one article related to Sci-Fi & Food Design, one article related to Graphics & Food, two articles related to Future Environments & Food, and one article related to Multisensorial Experiences & Food. Of course, this structure presented here is not the only one possible, nor is having used the notion of bigamy to relate fundamental aspects or terms of architecture and cities with food and gastronomy. Still, it is a structure of its own with which I have tried to echo the richness of relationships and ties between the two.

## Time, Space & Food

The first article, **“Building bridges: A transdisciplinary view on gastronomy”**, is a conversation between a food open scientist and a sociologist about the diverse range of areas naturally embraced by gastronomy and that can be used to explain specific characteristics of food and the act of eating. In this dispersion of areas, the authors reflect on the great challenge that gastronomy means for science and the need to build an overall vision and common language, what they called an “archipelago of knowledge” or “gastrology” that leans on transdisciplinarity and what sociology states as the science of associations, to approach that goal. They share the variety of definitions when the same object is analysed from different disciplines and the loss of possibilities if all these definitions are not first deconstructed and then connected with bridges. One way to deconstruct the kitchen is to blow it up by moving its parts to the periphery and allowing other outside thinkers to position themselves in the centre. That look from the outside is what the Kitchen Dialogues (Diálogos de Cocina) congress offers, organised

by the restaurant Mugaritz, Euro-Toques and the Basque Culinary Center, and where the authors have been and are participating. From my perspective, a holistic vision of gastronomy and architecture forces chefs and architects out of the centre of their disciplines. This move may allow us to solve shared challenges such as feeding and housing the overpopulation while dealing with climate change, and using gastronomy and architecture as educational tools.

## Cities & Food

In the second article, **“EDIBLE, or, the Architecture of Metabolism”**, the head curators of the 2022 Tallinn Architecture Biennale, presented food as the tool for imagining scenarios for alternative futures. They discuss the unsustainability and fragility, further accentuated by the pandemic, of the current global food systems and raise awareness about the journey of food that reaches our tables and its impact. In the same way, it is intended to reveal how architecture builds, feeds on materials and discards them. They addressed three scales: the micro-scale of materials –from brick to soil-, the macro-scale of large-scale territories – food and geopolitics- and the meso-scale of habitation -the metabolic home-.

In the micro-scale of materials, the results of the investigation contemplated in the eighth article of this Journal “RootSkin - from soil to soil” and the fourth article “Can We Eat Earth Buildings? The mineralogical common of earth building and edible earth practices” were presented and exhibited. In the meso-scale of habitation -the metabolic home raises the question: how can architecture radically intervene in these metabolic processes? One of the first modern attempts to construct the architecture of metabolism was Grahame Caine’s Eco-House, featured in the sixth

article of the Journal, which I recommend cross-reading along with the “The Metabolic Home” Biennale program.

In the third article, **“Food as a City Masterplan: Three Visions”**, the author proposes three hypotheses for designing and alter a city using a diet as an agent of urban and social planning. The first proposal exposes the consequences on the body, the home and the city of taking advantage of the “Lightnahrung” diet, feeding exclusively on the light. The second proposal values the local product, the second life of food that is not fit for sale but can be processed. Being a 2008 project, he revisits and updates it today, advising linking organic farming with the new collaborative economy systems managed by DAO, blockchain, tokens and gamers that would help engage the younger community. In the third, a more speculative proposal, the author revisits the Paleolithic, the golden age of humanity, according to Jean Chavaillon. It proposes the denial of agriculture to sponsor and free food from the property, from the act of cooking and consuming to become a relational platform. In this high degree of technology, the author transfers architecture to food and choreography to the city of leisure; there is no longer production but consumption. These three projects carry new architectural typologies and urban models, as seen in the previous article.

In the fourth article, **“Can We Eat Earth Buildings? The mineralogical common of earth building and edible earth practices”**, the authors present one of the most distinctive bigamies where the mutual dependencies between humans and their surrounding natural resources are revealed. Through this pioneering research, the authors analyse, compare and contrast soil as a building material and food, something more commonly found in other

animal species. It is a theoretical and experimental research-by-design investigation into the mineralogical content within earth materials and its role in building and human metabolism. The Results of the research-by-design process of creating buildable and edible earth artefacts were presented in a public [EAT ME BUILD ME] installation as part of the 2022 Tallinn Architectural Biennale. A significant project and its potential circular value of using earth-based materials as a healthy building material, food and local resource.

In the fifth article, **“Architecture for Fermentation and vice versa: A review of the passive-cooling strategies they may share to combat the rising temperatures due to climate change using Iberian pork slaughterhouse as hypothetical model where both disciplines converge”**, the author proposed that the contamination of fermentative techniques and spaces through architecture - and vice versa - are a form of biomimicry that generate results more adapted to the environment, economy and social functioning. We see that, like many of the articles in this journal, the vernacular architecture, construction techniques, materials and local products are necessary conditions to guarantee more sustainable cycles. The Iberian pork slaughterhouse and the amphoras for fermentation are examples where form follows function, and food production is the leading agent that shapes the space. This study links to the next chapter since the conclusions drawn from these processes in extreme global warming can inform solutions to other extreme situations, such as those created in outer space.

## Farming & Space Food

In the sixth article, **“Junk Food: Radical approach to sustainability in Grahame Caine’s Eco-House”**, architecture

and food production are not introduced in the context of extreme environmental conditions, which does happen in the fifth and seventh articles. Instead, architecture proposes an extreme performance to align with a radical approach to food production and the waste recycling cycle. It is an example where two basic needs stand out: the construction of a shelter and food preparation. It reveals the cohesion of the energy cycle that humans and architecture need and can produce. Architecture, tightly associated with science, technology and its environment, looks back to its origins and becomes a social and political agitator in this “inhabitable housing laboratory”. It reformulates the idea of “house” and its design processes as well as the physiology and psychology of living where the inhabitant makes the diagrams and the house works.

In the seventh article, **“From being Consumers to becoming Producers: DESIGNING CYCLES AT 64° Interior Urban Landscapes and the Water-Energy Food Nexus / PHASE 0”**, authors present the challenge of growing food in the sub-arctic climate, at 64° latitude, where agricultural land is minimal, and the built-up area as an untapped opportunity for food production by exploring greenhouse extensions and building envelopes as local passive architectural solutions. Using the city of Umeå as an example, they introduce phase 0 of a living lab set-up, similar to Grahame Caine’s Eco-House presented in the sixth article, and the need to test this research through a prototype “safe-to-fail”, reflecting on the idea of a new vernacular for local food production reconnecting food with the soil and specific conditions required to produce it. With this model, academia and applied research built productive interfaces between the private and public sectors, involving architects,

urban planners, students, NGOs and the general public to develop models that connect transdisciplinary knowledge in a holistic system. Authors reflect on these critical approaches by analysing precedents, even from different latitudes, that try to extend the growing seasons, and balance energy consumption and resources. These references are already addressing the world’s expected population by 2050 and the current segregation, dehumanisation and globalisation of food production. The social implications of the project would also help to reconduct the phenomenon of increasing loneliness in Northern countries. Food production is presented as a tool to reconnect people by defining new housing and living layouts.

## Sci-Fi & Food Design

In the eighth article, **“RootSkin - from soil to soil”**, the authors portray a living architecture that is both responsive to and harmonious with nature by recycling plants into architectural applications, specifically biodegradable textiles from plants supporting food growth. It intends to restore the environment’s equilibrium through multispecies (humans, plants and bacteria) cooperation embedded in the design. It incorporates robotics and digital fabrication, allowing them to generate patterns that guide plant growth. Rootskin was also presented at Tallinn Architecture Biennale 2022. This article could be hosted together with “Can We Eat Earth Buildings?” article within the framework of building materials from the soil, multiple applications for architecture and food, and circular cycles. Nevertheless, this high degree of technification incorporating robotics in construction and manufacturing via computational design gives it another condition. Its lower temporality distinguishes it compared to bricks since when

the membrane biodegrades, it returns the roots back to the soil to provide, through bacterial decomposition, the nutrients for the next plants to grow. Finally, as an interdisciplinarity approach to design, analytical work was carried out to develop the moulds by studying other artists and designers who work with roots.

## Graphics & Food

In the ninth article, **“The disorder of the dining table”**, the author takes us into the context that hosted the elaboration of the drawings that precede The plan of the house at Stock Orchard Street, 2001, colloquially known as the Straw Bale House. The drawings explore the relationship between diners around a table compared to the interactions between occupants in the home. Since table settings dictate people’s behaviour during a meal as pillars, walls and stairs dictate the user experience, interactions and movement. The drawings illustrate a set of a meal for eight people at different times of the evening. They serve to record the wealth and enjoyment that springs from people’s daily lives when they are not tied to pre-established behaviours, regulations or protocols, and

are also more faithful to what happens instead of what had to happen, something that causes discomfort in architects and that we use to forget when planning. This sequence of drawings helped the author and architect Sarah Wigglesworth build a house that was unprejudiced in its distribution and in the incorporation of local construction materials. The resulting architecture accommodates the growth of food and the freedom to combine the ingredients to generate new recipes, understood as distributions of use, daily scenes, adaptations to changes and the incorporation of the Everyday. Analogically, the house has thatched walls that make the connection between architecture and food explicit.

The cover of the UOU scientific journal issue #4 is inspired by the drawings of Sarah Wigglesworth. It represents an intermediate state where the crossing of aromas and flavours stemming from the different dishes is perceived. As well as the different cultures, origins and nationalities that are in tandem with the open and transdisciplinary character of this call. (See Figure 1).

## Future Environments & Food

In the tenth article, **“VIRTUAL PHENOMENOLOGY: A Critical Essay about the Relationship between Virtual Environments and the Senses”**, the author brings to the surface one of the most considerable challenges that the new media and associated controllers face: the stimulation of the senses in virtual environments. In the particular case that concerns us, the sense of taste brings together the most significant hardships for both the design of a tasting space and sensory experimentation. However, a cross-reading of the twelfth article, **“The form of taste: On the origins, implications, and applications of shape-taste crossmodal correspondences”**, may shed light. The author presents the results of the DDFT 473 – Virtual Environments course at the American University in Dubai. It addressed the relationship between the virtual realm and the senses using virtual reality, allowing students to create virtual spaces associated with food inside virtual reality.

In the eleventh article, **“The Blur Table: An investigation of the**

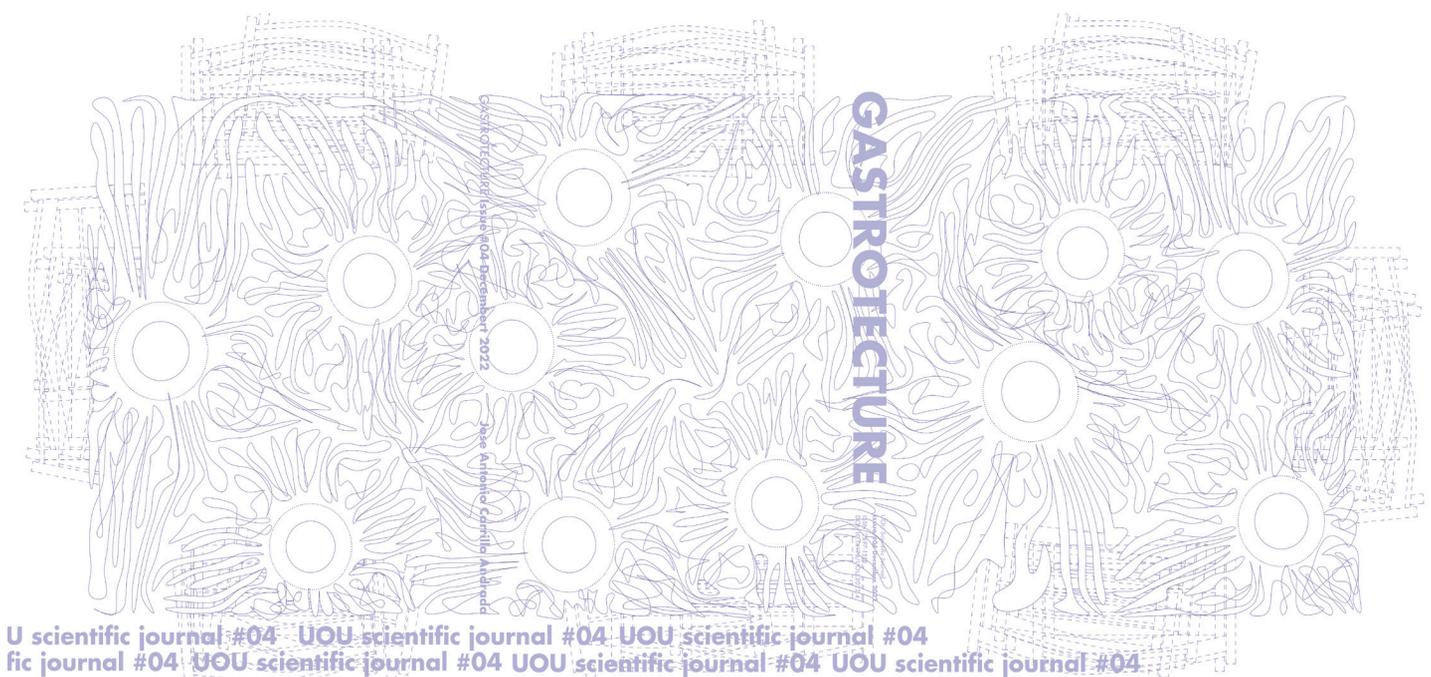


Fig. 1 - UOU scientific journal issue #4 cover inspired by The disorder of the dining table's drawings of Sarah Wigglesworth.

**virtual experience through the social act of the meal”** the author investigates the relationship between virtual space, physical objects, and the user in a domestic context in the context of the Covid-19 pandemic. At the core of the study is the social act of eating as a phenomenology of the social and as a connector between the virtual and the physical. This phenomenology is graphically recorded with digital and synthesised architectural tools in The Blur Table or, as the author calls it, “the borderless furniture”. The representation directly parallels the Sarah Wigglesworth drawings presented in the ninth article. The article discusses the symbolisms and the constructions of virtual spaces that come with us, personal relationships, and the sense of reality in relation to the virtual. The final step was materialising the investigated notions into The Blur Table furniture that manifests the virtual experience in space and time.

## Multisensorial Experiences & Food

In the twelfth and final article, **“The form of taste: On the origins, implications, and applications of shape-taste crossmodal correspondences”**, the author presents us with a historical narrative and a structured review of the affinities that an emerging body of crossmodal correspondences research has found between form and taste. Shapes that condition preferences and behaviours range from food to plateware, packaging, furniture and the servispace or dining environment. The insights have been attempted to apply in the fields of design, immersive virtual reality and experimental marketing and the results are associated with neurologically-normal individuals.

This last article allows me to connect with the archEatable academic course I have been directing since 2018 at the

Architecture School at the American University in Dubai. The course explores Food and Gourmet Pastry Art as a vehicle for teaching Digital Design and Fabrication lessons in Architecture. Students design and manufacture a consumable product from beginning to end in collaboration with professional chefs in the region. They study in depth the cooking philosophy and sources of inspiration of their partner chef, as well as the culinary culture and brand identity of the chef’s restaurant. Students design unique pieces that formally synthesise and reflect the brand identity aspects and the servispace. The edible creations are incorporated into the chef’s menu and the restaurant’s special events. Professor and students delve into the powerful collaborative synergy built with the chefs, learning from them which techniques and ingredients are more suitable to make the designs come true. The results are by no means possible without this cross-knowledge. Students and chefs jointly create a final product that responds to a transdisciplinary perspective.

This edition of the UOU Scientific Journal provides a constellation of associations between architecture and gastronomy through the 12 articles, allowing readers to reevaluate and discuss gastronomy in the context of architecture and vice versa. The “Atlas” section with student contributions, is meant to further the topic and provide examples. We hope your reading experience is enjoyable and stimulates unprecedented associations, new bigamies, and imaginative thinking.

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## NOTES

<sup>1</sup>According to Lakehead University’s “Essential Guide to Writing Research Papers,” multidisciplinary contrasts disciplinary perspectives in an additive manner, meaning two or more disciplines each provide their viewpoint on a problem from their perspectives. Multidisciplinary involves little interaction across disciplines. Interdisciplinarity combines two or more disciplines to a new level of integration suggesting component boundaries start to break down. Interdisciplinarity is no longer a simple addition of parts but the recognition that each discipline can affect the research output of the other. Transdisciplinarity occurs when two or more discipline perspectives transcend each other to form a new holistic approach. The outcome will be completely different from what one would expect from the addition of the parts. Transdisciplinarity results in a type xenogenesis where output is created as a result of disciplines integrating to become something completely new. CALDWELL, Willie. Official Grad 5104 blog: <https://blogs.lt.vt.edu/grad5104/multiintertrans-disciplinary-whats-the-difference/>



Fig. 2 - archEatable student's work. Editions 2018, 2019, 2020. Professor José Antonio Carrillo Andra. School of Architecture, Art and Design. American University in Dubai. <https://www.instagram.com/archeatable/>