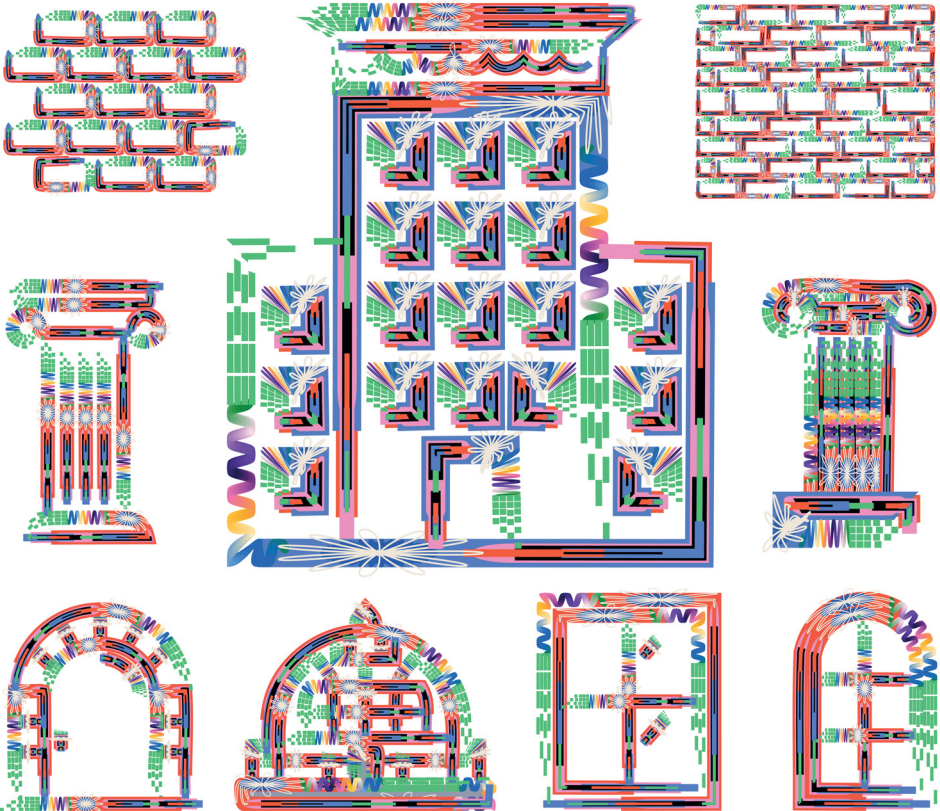
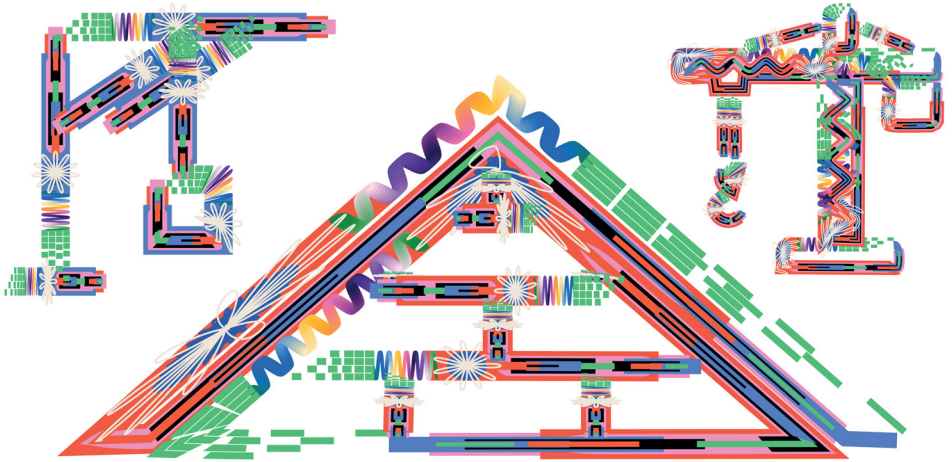


WORLDCRAFT



STUDIO SPACE POPULAR

WORLD CRAFT

From the Pattern Book to the Asset Library

WINTER SEMSTER 2025/26
[VIRTUAL CRAFT]

STUDIO SPACE POPULAR

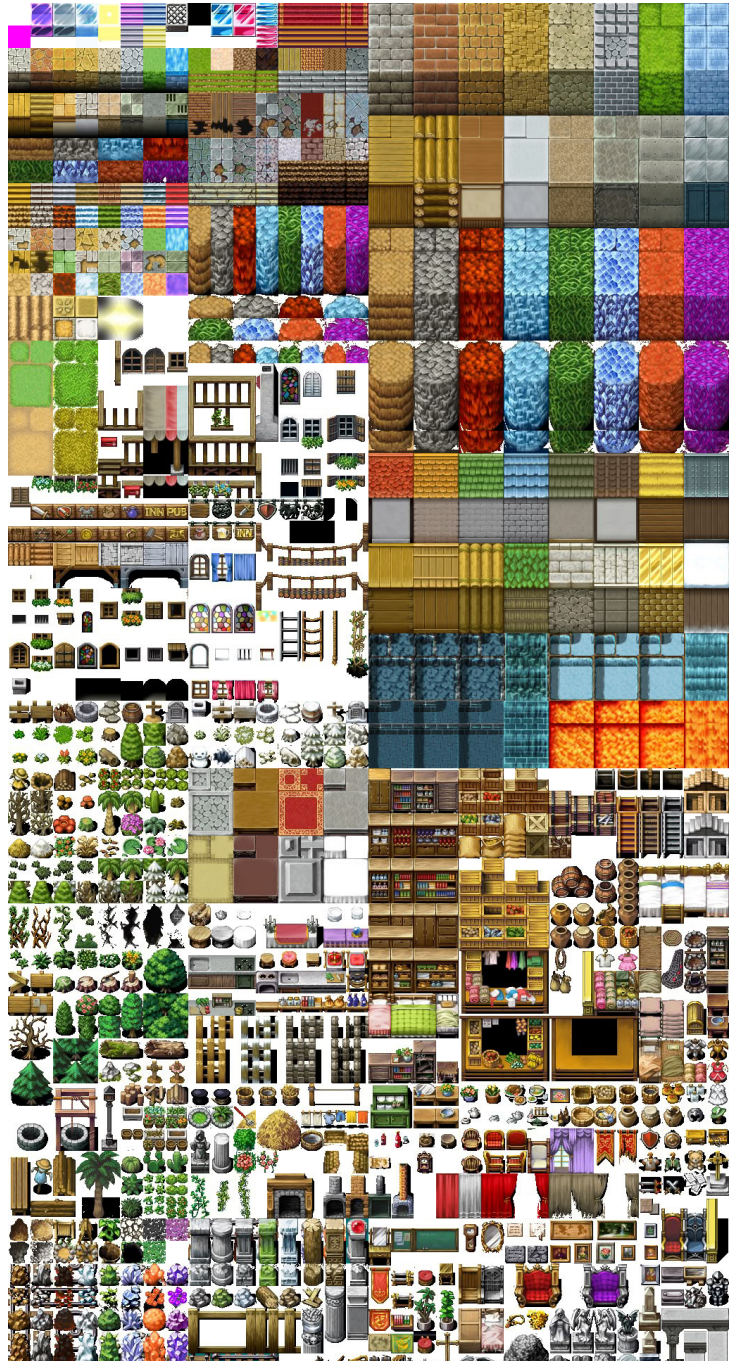
Professors
Fredrik Hellberg Lara Lesmes

Assistant Professors
Anousheh Kehar - Martin Murero - Maja Ozvaldic - Bence Pap

Studio Coordinator
Jan Jugueta

Institute of Architecture (IoA) - die Angewandte





Example of Game Asset Library

INTRODUCTION

This semester we will concentrate on the dimension of architecture that determines how spaces are sensed, valued, and given meaning: aesthetics. Beyond beauty, taste or styles, aesthetics is about how architecture participates in collective life, encoding ideologies and framing our sense of belonging. Following both enabling and extractive methodologies of the style catalogue (from the 19th-century pattern book to today's asset library), we will trace how architecture has carried ideology through aesthetics in physical and virtual space. As part of this exploration we will build our own asset libraries and develop methods for assembling them into spaces using game engines to construct worlds and produce video-essays. All of this will be tested through the program of a Transmedia stage set for a series of selected stories, where both performers and audience participate in hybrid formats.

AESTHETIC IDEOLOGIES IN ARCHITECTURE

Architecture operates within the realm of aesthetics. Every space, every facade, every room is met through the senses—light, sound, material, scale—and perceived through the cultural frames we carry with us—memories, habits, and associations encoded in styles. This dual perception, felt and interpreted, is what is meant here by aesthetics and can be defined as the dimension of architecture that shapes how places are experienced and valued. Through aesthetics, architecture can participate in collective life.

While the deterministic tone of an early 20th century statement that “architecture is the will of an epoch translated into space,” feels rather outdated—as if an epoch could be reduced under a single unified will—it still captures something crucial: architecture embodies ideology through aesthetics¹. Our perception of the progressive, the dignified, the beautiful and the ugly, is shaped by cultural codes and political agendas. The Gothic Revival in 19th-century England was not only a taste for pointed arches but a moralising national project; Mughal palaces of the 16th and 17th centuries in South Asia projected imperial cosmopolitanism; Ottoman mosques encoded civic and spiritual order across Istanbul and beyond; and modernist housing across northern Europe and Latin America became a symbol of progress. Architectural styles embody aesthetic ideologies—systems of perception capable of reshaping how communities imagine themselves, how power is expressed, how belonging is staged.

FROM THE PATTERN BOOK TO THE ASSET LIBRARY

Style is one of the many architectural vehicles for aesthetic ideology to travel through. Atmosphere, craft, media and technology are powerful carriers too. They remind us that aesthetics does not operate on the surface of architecture but through its very substance: how things are built, with which resources, under what conditions, and sustained by

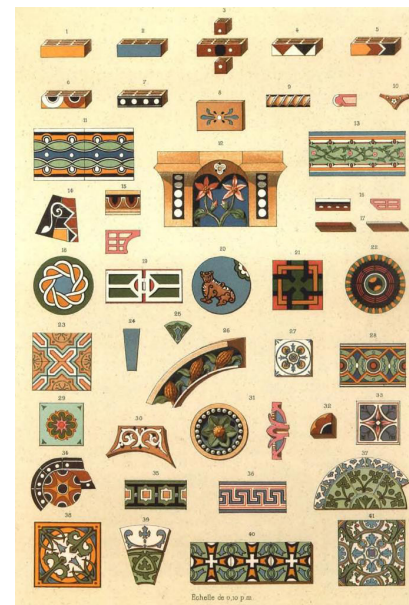
¹ Ludwig Mies van der Rohe's “Aphorisms on Architecture and Form” (1923)

which economies. This becomes especially clear in the 18th and 19th-century encyclopaedic projects that imperial architects occupied themselves with, hastily codifying aesthetic repertoires found abroad, often referred to as Pattern Books. Fischer von Erlach's *Entwurf einer historischen Architectur* (1721) blended documentation and fantasy in an imagined universal history of architecture portrayed through engravings—a medium that made circulation possible. Owen Jones' *Grammar of Ornament* (1856) gathered motifs from across the British Empire into a system intended to be inspiring but that resulted in an instructional catalogue for cultural extraction. Auguste Racinet's *L'Ornement Polychrome* (1869–85) presented a global inventory of styles lavishly illustrated using chromolithography for the visual pleasure and consumption of the book-owning class. Pattern books were aesthetic ideologies in print, exoticising architecture into a catalogue of worldviews, hierarchies and fantasies.

If the pattern book was the medium through which 19th-century aesthetic fantasies circulated, today it is the Asset Library. In the making of virtual worlds, the asset library is one of the starting points. Whether drawn from existing repositories or custom-built collections, all elements in the world are designed as a kit of reusable parts. In game design, 3D artists create assets—a door, a chair, a tree, a trashbin—and store them in a categorized library to be dragged, dropped, resized and retextured in the engine where the environment is assembled. A single arch or wall may be reused hundreds of times in

different guises, just as a motif in a 19th-century pattern book could be copied across furniture, architecture, and stage sets. The library defines the aesthetic vocabulary of a world that is achieved through its recombination.

Like the chromolithographic plates of Owen Jones and Racinet or von Erlach's engravings, asset libraries make aesthetic worlds portable, reproducible, and distributable. In doing so, they also flatten difference and cultural specificity. These are culturally extractive systems that decontextualise motifs and ornaments for the sake of portability, disguising cultural value as neutral design data and consequently turning histories and identities into interchangeable aesthetic resources. At the same time, this methodology democratised access to design knowledge by circulating it through distribution media, leading to experimentation and development through a wider range of craftspeople. Today it is also embedded not only in the digital workflows but also in the protocols through which digital environments are rendered in more energy-efficient ways—with effects not dissimilar to standardisation in construction. For example, in game engines a repeated object is effectively stored only once through optimization techniques like Instanced Static Meshes. This reduces the number of “draw calls” the computer makes to the graphics card, substantially reducing energy use. These may be seen as the equivalent of the plaster mould for ornaments, where once the form exists it can be multiplied at low material and labour cost.



Details of Victorian Architecture



These contradictions show why the catalogue in its many forms persists as it is at once a tool of extraction, a means of efficiency, and a mechanism for democratization. But what does it mean to work within a system both extractive and enabling? Just as pattern books shaped the 19th century, how do asset libraries shape our imagination today? Can the catalogue, if stripped from its encyclopaedic ambitions, be reimagined as a framework for questioning, experimenting and reimagining how worlds are crafted and buildings designed?

Today artificial intelligence further automates the creation of assets and even entire worlds. A simple line of text describing an environment can call on resource-hungry data centers to deliver an environment in mere seconds. This raises questions of

value: does an object lose value when the effort that went into its production is hidden behind mechanical or algorithmic production chains? We are inclined to assign more worth to what appears more laborious, an interpretive mechanism (or bias) known as effort heuristic² especially relevant to discuss today in the context of AI.

2 The effort heuristic is a mental shortcut where people judge the quality or value of something based on how much effort they think went into making it. In other words, the harder it seems to create, the more valuable or worthwhile it's perceived to be. Kruger, J., Wirtz, D., Boven, L., & Altermatt, T. (2004). The effort heuristic. *Journal of Experimental Social Psychology*, 40, 91–98.

The vastly different use of human and technological (and therefore material) time and resources spans the various creative processes in use today. Designing a facade from sketchbook to stone carving vs. prompting an AI to do so faster than one can fold a napkin, brings us to question: what kinds of values must a 21st-century architect uphold?

THE STAGE AS MEDIUM

Any architectural programme could serve to test questions of aesthetics: a parliament, a house, an office tower; but the stage set forces the issue in the most direct ways. On a stage everything is language -it communicates- and loaded with meaning: a forest must be legible as a forest, and yet one can imagine a myriad of versions of it. The stage also must compress and dramatise the aesthetic world it portrays, and in that synthesis lies the key to its aesthetic ideology. The stage will be our medium of inquiry into aesthetics.

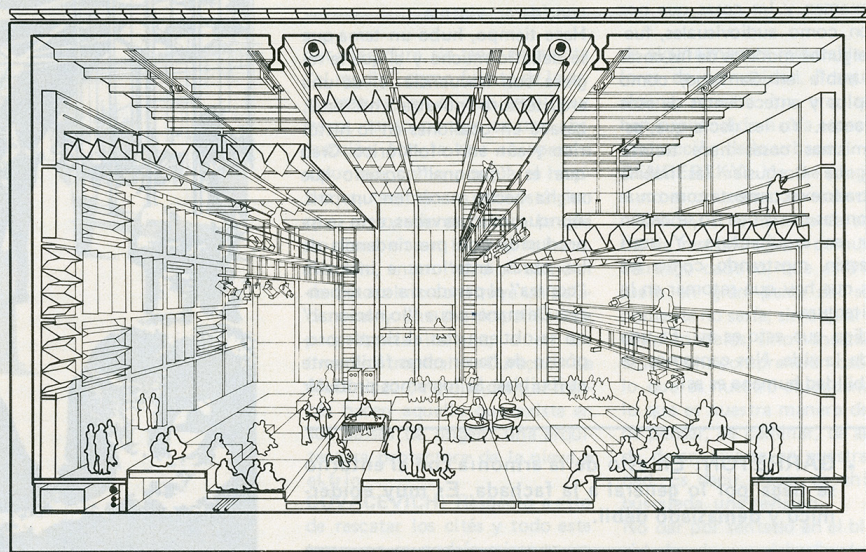
1. WORLD

Responding to a story from a provided selection of plays and operas, we will compose archetypal environments (forests, halls, domestic interiors, etc.) based on carefully crafted asset libraries. These will set the aesthetic world for the projects where questions of meaning, representation, and craft are to be considered.

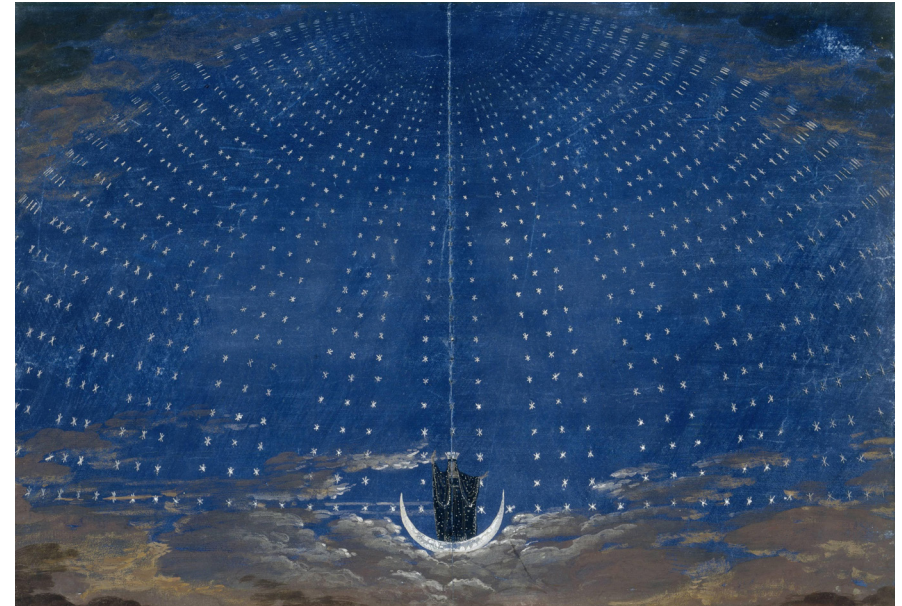
2. STAGE

The stage is the mediator of the world. Even if the entire world of a play is imagined, only certain perspectives or paths are shown. This is done through a process of mediation where the support may range from a painted canvas to a digital display, in a transmedia environment where digital and physical layers intertwine.

The stage must redefine the imaginaries of archetypal environments and also confront the technologies through which aesthetic worlds are mediated today.



Richard Rogers and Renzo Piano. - 1977



The arrival of the Queen of the Night. Stage set by Karl Friedrich Schinkel - 1815

PLEČNIK'S LJUBLJANA ([LINK](#))

To ground these ideas in a physical case study we will travel to Ljubljana, a city that demonstrates the role of aesthetics in defining civic identity through the built environment. In the early 20th century, Jože Plečnik restyled Ljubljana through a series of civic structures with a shared style. Bridges, colonnades, markets, churches and squares stand not as isolated works but as part of a coherent style that gives the city (especially its center) a defined character. We will retroactively construct Plečnik's asset library for Ljubljana and trace its precedents.



Street Lamp by Joze Plecnik - Ljubljana, Slovenia

OBJECTIVES

Throughout this semester students will:

Gain an understanding of the role of aesthetics in architecture

- Recognise how architecture embodies —cultural and political— ideological agendas through style
- Identify the many layers through which architecture can carry aesthetics: materiality, media, craft, etc.

Critically engage with historical precedents and methodologies

- Understand 19th-century pattern books as both enabling and extractive devices
- Identify the roots of contemporary digital design workflows in historical cataloguing practices

Build an intellectual framework for value in the design process

- Evaluate how architecture is valued depending on processes of design, craft, and maintenance..
- Analyse how the use of resources contributes to the aesthetic experience of architecture

Learn how to use the game engine software Unreal Engine

- Gain skills for building of worlds in the software and manage files
- Learn how to export images, videos and immersive experiences from the software.

Learn and apply a worldcrafting workflow

- Develop asset libraries for Unreal Engine as the foundation for environment building
- Construct environments from selected viewpoints

Experiment with conventional architectural representation

- Extend conventional architectural plans to account for time, remote presence, and mediated space
- Develop narrative spatial design through film-making

Synthesise virtual worlds within physical space

- Technically resolve a mixed media space
- Convey multiple and layered worlds through a concrete transmedia space



Leyi He - 2023 UCLA - Student Work

METHODOLOGY

PHASE 1 WORLDCRAFTING

We will begin by crafting the key environments for the selected story/play. Following the methodology of the style catalogue, today known as the asset library, we will craft the environment in a modular way by designing a series of repeatable assets (and borrowing others) that can be assembled into various configurations.

An asset library is a collection of design elements (mainly 3D models and textures but may also include sounds or animations) that are the building blocks of a virtual world. The workflow introduced uses the software Unreal Engine, where assets can be easily repeated and retextured at low computational cost.

Here is how to proceed:

1. Select a story/play from the selection provided and familiarise yourself with it (read it, look at various instances of it being performed, find adaptations, etc.)
2. Identify the key scenes in the story/play and define the key environments (ideally no more than 3-4) and establish key perspectives (we will refer to them as worldviews)
3. Build a visual reference board that helps you find a language or style. You may need more than one given the environments in your story/play but there must be a coherence between them
4. Study the key references in your board (where do they come from, what do they communicate, what associations do they create, etc.)
5. Design an asset library: collect/modify/build assets for the world ensuring a coherence among them and an overall aesthetic
6. Compose key environments (with your assets, review them as needed) in Unreal Engine and extract a set of worldviews
7. Resource Map. Compile a document that outlines the use of resources used to build the asset library and world.

Key questions:

- What defines the aesthetic vocabulary of this world and why?
- What happens when environments are constructed from recombining parts?
- What imaginaries does the asset library tap into?
- What values does the project uphold through the use of resources -hidden or exposed- and how are they perceived?

All work during this phase will be conducted individually.

Link to all stories here: [LINK](#)



Herzog & de Meuron's 2012 Serpentine Pavilion, designed with Ai Weiwei, featured an excavated-like plan that overlapped the footprints of all past Serpentine Pavilions since the program began in 2000.

PHASE 1 - TRIP PLEČNIK'S ASSET LIBRARY

During our field trip to Ljubljana we will attempt to retroactively compose Plečnik's asset library for the city through various forms of capture involving observation, drawing, photography and 3D scanning. This will involve:

- On-site recording of details through sketch, photography and notes
- On-site digital capture using photogrammetry/3D scanning
- Organising the gathered material into a categorised library (textures, motifs, forms, etc.)
- Reflection on how the process -the act of cataloguing- transforms the aesthetic experience of the city



Giuseppe Verdi. Aida. Vocal score title page. 1871



The Grammar of Ornament. Owen Jones. Egyptian plate number 8. 1856

PHASE 2 STAGING

From the crafting of virtual worlds we will move into the design of a mixed-media stage set. The aim is to think about the stage not only as a physical arrangement of props but as a transmedia environment where architecture, media, and performance come together. Incorporating digital media interfaces such as screens, projection, VR/AR augmentation, and/or other experimental tools, the stage must enable remote access to the audience and/or remote participation of performers.

The stage will be developed through what we call the **non-euclidean plan**: a drawing that bends layers of time and distance across physical and virtual spaces, and captures media connections. Based on the conventional plan drawing, we will aim to represent the spaces of remote presence, transformations of the space over time, and the mediation of environments.

The non-euclidean plan will be accompanied by a **score**: a time-based diagram showing the temporal dimension of the play, sequencing key moments, transitions, and where each intervention exists (physical vs. virtual space).

Below are some points to consider:

- Following the requirements below compose a layout for the stage set and the spaces for the audience, considering both physical and virtual participants
- Test this layout across a few key moments of the performance and consider how the transitions between them are made and what they require
- Design the basic formal configuration of the space (diagrammatic/no details) considering how it can hold motifs, props, and views to set the scene for the performance
- Consider what is physical and what is virtual, and think about the many mediums through which virtual space can be presented beyond the digital

Spatial requirements: The physical space must accommodate

- The number of performers will depend on the chosen story. It is up to each group to decide how they are distributed (physical or virtual presence) and how their presence takes shape
- A minimum of 50 audience members physically present
- A minimum of 20 audience members virtually present. It is up to each group to determine in which way this presence takes shape.

Minimum spaces required:

- Foyer / Lobby
- Stage
- Back of house / Control Room / Technical Gallery
- Basic services (if not already available)

Energy + resource budget: groups must account for the use of energy and resources

Site:

- Projects will physically exist within a prototypical warehouse hall
- The size of the warehouse hall must be between 500sqm and 2000sqm
- Optionally, a specific warehouse in a location on earth can be selected if beneficial to the project

All work during this phase will be conducted in teams of 2-3 students.

PHASE 3 TRANSMEDIATION

The second half of the semester will be dedicated to refining and detailing the design, bringing together the virtual world developed in Phase1 and the stage set from Phase2.

This involves making formal and material decisions concerning how the virtual world is staged into the physical stage set through various digital (screens, projection, augmentation, etc) and non-digital (tapestries, frescoes, print, etc.) supports, and how choices of aesthetic materiality (medium, craft, technology) respond to questions of value. Questions of effort heuristic will be central to understanding how value, ideology and aesthetics interact through design choices: Is a hand-painted backdrop perceived differently from a projection? Does AI-generated content carry less weight than a manually modelled 3D asset? And how can the audience even tell?

Besides conventional architectural drawings and images, we will work with the methodology of the spatial video-essay. Here is how to proceed:

- Diagram a basic layout for the world, considering how the various environments sit next to/within one another (nested, sequential, circular, fragmented)
- Put this diagram together with your non-euclidean plan and consider how to weave them through your film: which elements could act as bridges between worlds in the narrative?
- Based on your argument and woven with your research, develop a storyboard
- Work on the key scenes from your storyboard adding further detail there while keeping the in-between or background space simpler
- Create your camera path linking it to your narration
- Work on colour and lighting across the overall film
- Optimise, improve, edit as needed

The “spatial” in spatial video-essay refers to the digital environment in which it takes place being three-dimensional. However, groups are encouraged to consider the support for their presentation being something other than a 16:9 screen. Groups may use multiple screens, trackers, and other technologies for their presentation at the final review.

For the final event/screening, where custom setups will not be available, a single video file will be required.

SELECTED READINGS

To build and expand on the ideas introduced in the brief, a series of readings has been selected. These texts provide historical grounding, theoretical perspectives, and contemporary critique of aesthetics in architecture. Guidelines are provided to help prepare and frame the reading discussions. (You will be assigned 2 readings for the semester. The list is offered as a further resource for the semester.). [LINK](#)

1. Rabbat, Nasser, "What is Islamic Architecture Anyway?" Journal Of Art Historiography no. 6 (June 2012) (pg. 1-15)
2. Alina Payne. *From Ornament to Object. Genealogies of Architectural Modernism*. Yale University Press, 2012. Introduction (pg. 1-24)
3. Gülru Necipoğlu. *The Topkapi Scroll: Geometry and Ornament in Islamic Architecture*. 1996. Chapter 6: "Ornamentalism and Orientalism: The Nineteenth- and Early Twentieth-Century European Literature." (pg.131-166)
4. Kathryn Ferry, "Printing the Alhambra: Owen Jones and Chromolithography," *Architectural History*, 2003, Vol. 46 (2003), pp. 175-188
5. Myra Nan Rosenfeld, "Sebastiano Serlio's Drawings in the Nationalbibliothek in Vienna for His Seventh Book on Architecture" *The Art Bulletin*, Vol. 56, No. 3 (Sep., 1974), pp. 400-409
6. D.N. Perkins, E.H. Gombrich, Review of *The Sense of Order: a study in the psychology of decorative art* (pg. 77-81)
7. Ernst Gombrich, *The Sense of Order: a study in the psychology of decorative. Chapter 1 - Issues of Taste - 1979*
8. Swati Chattopadhyay, *Small Spaces: Recasting the Architecture of Empire*. Chapter 1: "Of Small Spaces" (pg. 1-12)
9. Sibel Bozdoğan, "Orientalism and Architectural Culture" *Social Scientist*, Jul., 1986, Vol. 14, No. 7 (Jul., 1986), pp. 46-58
10. Zeynep Çelik, *Displaying the Orient: Architecture of Islam at Nineteenth-Century World's Fairs*. Introduction (pg. 1-15)
11. Linda Nochlin, *The Politics of Vision: Essays on Nineteenth-Century Art & Society*. Chapter 3: "The Imaginary Orient" (pg. 33-59)
12. Gülru Necipoğlu and Alina Payne (eds.). *Histories of Ornament: From Global to Local*. Princeton University Press, 2016. Introduction (pg. 1-6)
13. Kishwar Rizvi (Ed.), *Affect, Emotion, and Subjectivity in Early Modern Muslim Empires: New Studies in Ottoman, Safavid, and Mughal Art and Culture*. Introduction (pg.1-19)

RESOURCES

[LINK](#) TO SOFTWARE (UE) / HARDWARE / TECHNICAL SKILLS & AI TOOLS

[LINK](#) TO INSPIRATIONAL EVENTS VIENNA

References:

Cataloguing

Nora Al-Badri, [Babylonian Vision](#). 2020, Gan Video
Ginny Maki, [Inventory / Elevator Button](#)
SpacePopular 2025_ [WhyYouShouldCareAboutStyle](#)

Pattern books:

(Visit to the MAK Library on Thursday, 2nd October)

Sebastiano Serlio, [On the Five Styles of Buildings - 1537](#)
Owen Jones & Jules Goury. [Plans, Elevations, Sections and Details of the Alhambra](#)
A.W.N. Pugin, [Gothic Ornaments selected from various ancient buildings - 1854](#)
Owen Jones, [The Grammar of Ornament](#)
Gottfried Semper, [Der Stil in den technischen und tektonischen Künsten](#)
Johann Fischer von Erlach, [Entwurff Einer Historischen Architectur](#)
Alois Riegl, [Stilfragen: Grundlegungen zu einer Geschichte der Ornamentik](#)
Sir Charles Eastlake, [A History of the Gothic Revival](#)
Auguste Racinet, [L'Ornement Polychrome - 1869](#)
Jacob von Falke, [Art in the House. Historical, critical, and aesthetical studies on the decoration and furnishing of the dwelling.](#)
Franz Sales Meyer, [A Handbook of Ornament - 1892](#)
Thomas Weil, *New Grammar of Ornament*, 2021

World-building/Decolonization:

Sergio Calderón Harker, [Decolonial: Abya Yala's Insurgent Epistemologies](#)

WHY YOU SHOULD CARE ABOUT STYLE

A letter from Space Popular

The choppy waters of style are treacherous,
yet we navigated them lightly,
as one would a ball-pit rather than a daunting ocean.

Understanding style does not rely on having its meaning explained by an expert or historian. Style is recognised intuitively, and produced through repetition. Style is about nodding to each other through our influences, our preferences – and as architects, through our work. Style is not imperative; the strength of any style relies on its ability to communicate.

Trying to claim that a style is one's own is like trying to own a piece of the wind and keep it safely in your pocket. Style can never be about the individual. Embracing style means abandoning the struggle towards individual genius, innovation, originality; it means dropping the saber and embracing the fact that nothing is created in isolation. Style is about us, about appreciation and exchange.

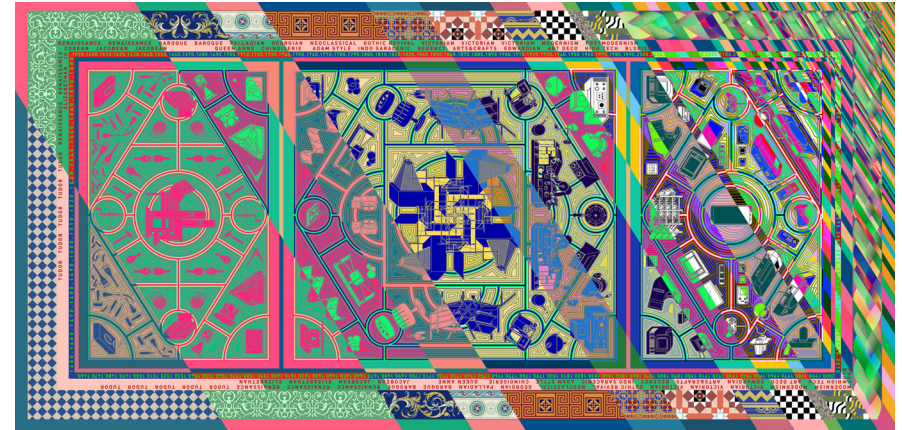
We cannot name a style as it is forming, but that does not mean we cannot perceive it. In fact, at times it feels like we perceive

far too much: we live in saturated times, and it's hard to know which bits of culture will calcify into an enduring style, and which will be discarded. Style needs your attention, because it does not exist unless you see it.

The speed, accessibility and vastness of the internet has thrown us into a dizzying freefall: our neurons feast and choke on an overdose of pattern recognition. If style is driven by cumulative and collaborative exchange, then the internet is no less than a style-making paradise.

At the same time, simulated reality is currently undergoing a paradigm shift. Representational media is moving from the visual plane – in front of us – to the experiential sphere around us.

The growing presence of immersive media means that virtual architecture is not only a reality; it is a lucrative and rapidly growing phenomenon. For the first time, instead



Space Popular, Carpet design for the exhibition displaying the timeline of styles by date when they originated from the 15th to the 21st centuries. In Freestyle: Architectural Adventures in Mass Media. London: RIBA, 2020

of being represented by media, today architectural experiences can exist wholly inside it. It is time to review our description of architecture as something only physical.

Comparing the historic evolution of styles and media formats for this exhibition has revealed parallels and correlations too intriguing to ignore. What we have found – and attempt to demonstrate in Freestyle – is a path of continually expanding inclusivity in the production and recognition of style. The ambition of any media is to constantly widen its reach. If style depends on media, then its inevitable goal is to engage more of us and with greater intensity.

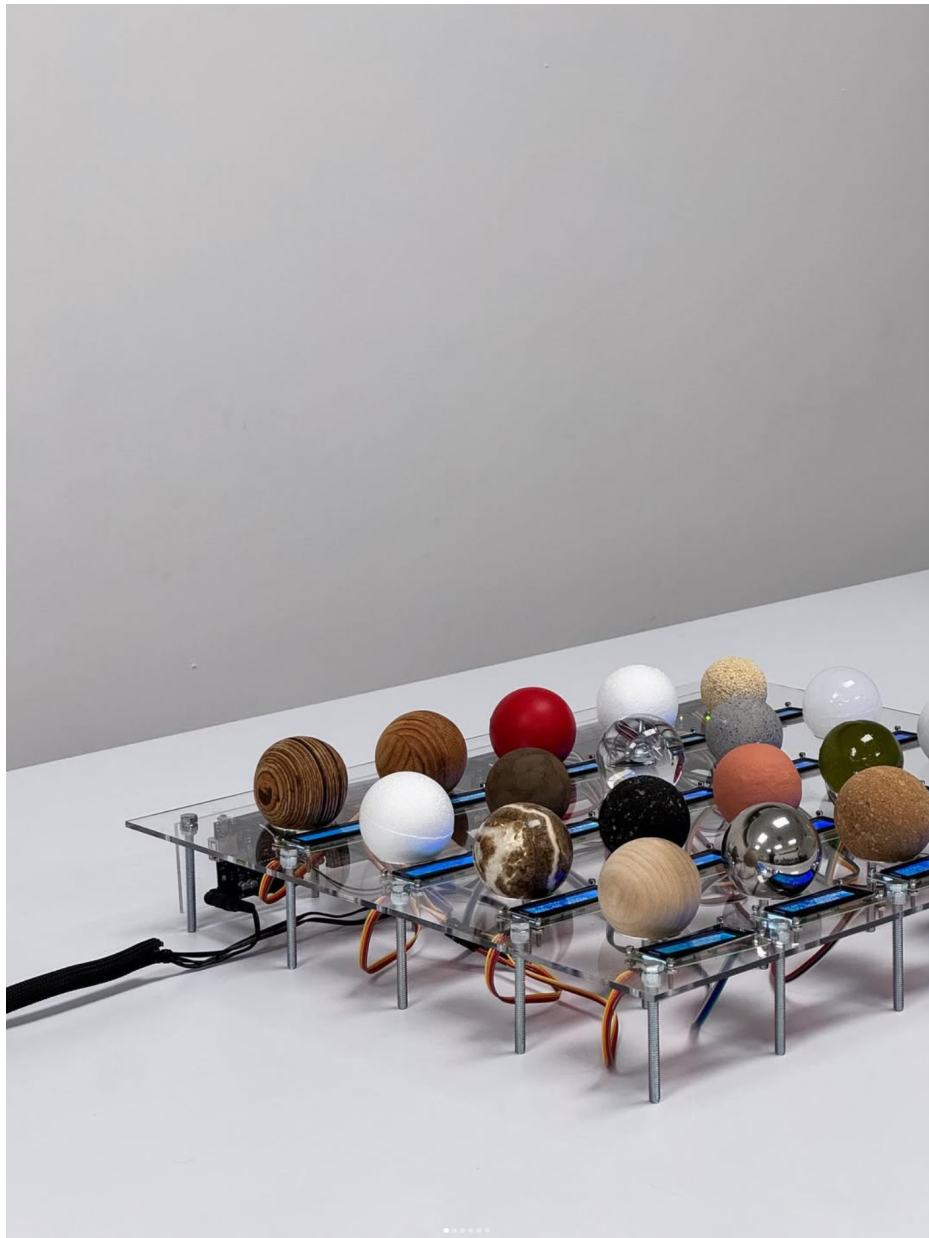
We do not attempt predictions about the future of style, or what architecture will look like; but rather how style will reach us and what that implies: that the inclusivity, openness and emancipatory character of new mediums can only be positive for architecture, even when it shakes ideas of

authorship and the architect's role; and that new social codes and freedoms may carry promises as well as threats.

There is only one inescapable reality – complex and multi layered – which is undergoing transformations that might change it beyond recognition. We do not have answers on whether these changes will be for better or worse. All we do know is that whatever currents do form in style, they will emerge from increasing freedom, and be shaped by our collective care.

Lara Lesmes & Fredrik Hellberg
2020. London. UK

Space Popular. “Why you should care about Style” In Freestyle: Architectural Adventures in Mass Media, edited by Shumi Bose. London: RIBA Publishing,



Rolando Girodengo - *The Weight of Things* - 2025

STUDIO SPACE POPULAR

Professors
Fredrik Hellberg Lara Lesmes

Assistant Professors
Anousheh Kehar - Martin Murero - Maja Ozvaldic - Bence Pap

Studio Coordinator
Jan Jugueta

Institute of Architecture (IoA) - die Angewandte

